A History of Muslim Philosophy Volume 2, Book 5

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Part 1: Language and Literature

Chapter 50: Arabic Literature, Poetic and Prose Forms

A. Poetry

Let us imagine an Arab Bedouin riding his camel on frequent long journeys across lonely desserts. While the rhythmic beating of the padded hoofs on soft sand breaks the stillness of the air, the rider is sunk deep in recollections of his own past. As he feels excited to share his mood with his “two companions and fellow-travellers,” there is nothing more natural than that he should start chanting in unison with the movement which has the sole possession of his entire perception. This unsophisticated outpouring of one’s heart in response to an occasional urge took the form of *rajaz* – the simple iambic alternation of *harakah* (moved or vocalized) and *sukun* (quiescent consonant) corresponding to the alternation in the lifting and lowering of the camel’s feet. (Cf. the *khabab* in which the pattern of alternation corresponds to the pace of the horse.)

The observation of the effects of the “song” induced a deliberate practice to beguile the man and quicken the animal. As the practice grew and attracted talent, formalities accumulated by common taste and general acceptance, giving rise to the *art of poetry*. The art was not slow to create for itself forms

much more varied and complex than the original *rajaz*. About the middle of the second/eighth century when al-Khalil scrutinized the structure of Arabic poetry according to the quantitative measure suggested to him by the different tones on the rebound of the smith's hammer (just akin to the camel's tread) he admirably reduced it to a system of prosody consisting of 16 material forms.

Some foreign influence is not precluded from the development of some of these standard Arabic forms, all of which, of course, did not, and could not, have an equal measure of antiquity or popularity. What is remarkable is that this system of prosody sufficed to serve as the hard core of future indigenous development as well as assimilation of foreign models up to the present day.

By the quarter of the fifth century A.D. when we get our first yet full acquaintance with Arabic poetry, myriads of tribes hailing from different quarters of the country had commingled sufficiently at commercial co-literary fairs, e.g. that of 'Ukaz, religious such as at Mecca, and cultural as that at Hirah, to evolve a common language and widely appreciated norms and forms of artistic composition, though, naturally enough, they exhibited peculiarities of usage of speech. This common literary medium which developed out of the North Arabic, coinciding with the steady decline of the economic, political and cultural influence of the South, was leavened mainly in Hirah with the accompaniments of material and religious civilization as augmented with currents – Judaic, Christian, and Graeco-Roman – from the opposite end of the Northern Desert.

Generally speaking, it was precise to finesse so far as Bedouin life and environment were concerned, but lacked the facility for conveying abstract ideas and general concepts. However, it possessed, by the very nature of its being a compromise between various dialects, an immense wealth of synonyms together with ample resources of rhyme and assonance inherent in its schematic morphology. Thus *saj'* (rhyme) came to be the first and natural form of artistic composition prompted by the instinct for symmetry and balance in the structure of short, compact sentences especially designed for intonation and oral transmission without being committed to writing.

The *saj'* existed before metre; the evolution of metrical forms only pushed it to the end of a verse under the name of *qafiyah*. It is sometimes overlooked that the *qafiyah* constituted an essential element – and not an additional, far less artificial, embellishment in the structure of Arabic poetry. In other words, verse without *qafiyah* has been unknown in Arabic during its infancy as much as in its youth and old age. As we shall see later, so long as there was healthy development, any tendency on the part of the *qafiyah* to rigidity and monotony was checked in due time by adequate adaptation to the requirements of the theme (*vide* the evolution of *muzdawij* and *musammat*).

In the period of decadence it was snot sheer conservatism but a deep realization of its essential worth, which caused artificiality to be preferred to freedom. The positive function of the *qafiyah* in laying down rails, so to say, for the movement of thought, is demonstrated by the spontaneous rush of the imagination of the audience to the end – almost the entire later half – of a line ahead of actual recitation by the poet.[1] Such a thrilling experience of effective communion between the poet and his audience is in

no way rare wherever Arabic poetry (or Persian or Urdu poetry for that matter) is recited even today. This is quite apart from the practical utility of the *qafiyah* in helping memorization as alluded to before.

In the sociological fabric of the pre-Islamic time the poet occupied a very high and influential position. The popular mind was impressed so deeply with the efficacy of his art that it believed him to be in communion with some super-natural source vaguely identified with a jinnee or a devil. But the conception about his art was the same as about the skill of a horseman, it had to be consecrated entirely to the cause of the solidarity and the ascendancy of the tribe. The poet had a task irrevocably assigned to him, which was to act the spokesman and the counsel on behalf of the tribe.

Hence, he was expected to specialize in a knowledge of the tribal saga supporting the cause for his clients and against their rivals.2 In short, poetry was appreciated primarily as a weapon of offence and defence in the struggle of tribes against tribes; its function was to commemorate the glories of the poet's own tribe, exalt its achievements in war and peace, and embolden it against the other tribes by holding them to scorn. There was little room for the personality of the poet to detach itself even for a while from the interests and the fortune of the tribe.

Naturally enough, the motifs of pre-Islamic poetry sprang fundamentally from the spirit of the *jahiliyyah* – the ignorance of a moral code of conduct characterized by a strong sense of tribal solidarity based on blood kinship, and highly volatile passions cramped within stinted sympathies and primary selfish impulses.3 Thus, the two oldest kinds of verse were the *hija'* (satire) and the *fakhr* (self-glorification) with the keynote of the *hamas* or desperate pursuit of unbridled aggression. True, the *nasib* (erotic verse) also must have had an independent form in the oldest time but all the same it could not have occupied a position other than the subsidiary one which is assigned to it in the scheme of the *qasidah*. After all, the theme of love had no bearing on the security of the tribe. The very reason that its interest was human and universal, i.e. not peculiar to the tribe, was enough to render it inconsequential.

Leaving aside the *hija'*, which has throughout maintained its independent form, the *fakhr* in its kindred form of *madih* (eulogy) came to assume the pivotal position in the structure of the *qasidah*, which was devised especially to rope in the *nasib* and many other minor forms of occasional verse to sub-serve it. This "loose-knitting" of the diverse kinds into a rigidly conventional structure seems to have come into vogue not long before our earliest acquaintance with Arabic poetry, i.e. about 125 years before Islam.4 The order in the composition of the *qasidah* is invariably as follows. First comes the *nasib* by way of a prelude, second, the *madih* as the main part, and third, the *khatimah* (epilogue) which is most didactic. A certain proportion was observed particularly between the first two parts on the principle that the *nasib* should neither over-shadow the *madih* nor pass without fulfilling its function of catching the ear of the audience for the latter.

The Nasib

Usually the poet pictures himself as confronting, in the course of his journeys to and from, the remains of

the encampment which once had been the scene of his love. This gives him the opportunity to depict with remarkable pathos the scene of the separation and recollect in moving terms the charms of the beloved and the pleasures of her company in the past. The physical charms are dwelt upon with much gusto and not a little sensuousness. The discreteness of the Arab mind is amply shown in concentration on the individual parts of the body one by one.

To take just one typical instance, the Arab poet has a long breath in expatiating on the saliva – its purity, coolness, freshness, and fragrance like that of "early morning rain collected in a clear stony pond" – which nectar he would suck, draught after draught, with the zest of a drunkard in order to convey the meaning of the simple word "kiss." A life free from hard work is idealized for its effect in promoting feminine delicacy and untarnished complexion. To stay behind the curtains, well protected from the rigours of the weather, and jealously guarded in the manner of "the delicate shell of an egg under the feathers" was the vision which enthralled the heart of a young damsel.

Qualities of heart, particularly modesty, gentleness of manners, friendliness towards neighbours, and mirthful coquetry in the company of the lover, are also highly appreciated but only as adjuncts of physical beauty. Having perforce to suffer long spans of solitude due to unsettled life, the Bedouin acquired high sensitivity to any stimulus to his memory.5 Hence addresses to the natural surroundings associated with the exploits of the past and outbursts of sympathetic response to the cooing of the dove and the like are an ubiquitous feature. Further, it was the relish for musing which earned for the image of the beloved (*khayal* or *taif*) a special place in Arabic poetry.

The poet's feeling of love for the beloved is expressed only in general terms such as the comparison of his own heartache to that of "a she-camel who has lost her young." For the rest, the pursuit of love is only reminiscent of "the hot chase of a game." The only relieving feature is that of the Arab lover insists on a response to his love, and that without any trace of cringing. He would start taking pride in his own qualities so as not to leave any doubt about his deserts for the esteem of the beloved, but in the end he would not mind warning bluntly that although he relishes coquetry he cannot brook any affront to his dignity. That is why in describing the union he would take care to mention the yielding, passive and tacit though it may be, on the part of the beloved.

Incidental to the journeying of the poet in quest of love and fortune comes the description of the animals and the natural scene. It has been said that the camel occupies the same place in Arabic poetry as the cow in the *Rg-Veda*. The horse, no less indispensable for the normal pursuits of life including war, comes next. Though the description came soon afterwards to sound jejune even to the townsfolk of Baghdad, one cannot help being moved even today by the tenderly feeling shown to the two animals which equals to, sometimes even exceeds, that reserved for the members of the household.

To bring out certain points of comparison in the riding beasts, the poet turns to the wild animals, among which the pride of place goes to the wild ass, the wild cow and the ostrich. The subject of wild life is frequently enlivened with fine thrilling scenes of flight and chase. The natural scene is, of course, is

dominated by clouds, thunder, lightning, rain and the mirage, not to speak of the desert and the mountain valleys.

The Madih

The *nasib* formed only a prelude to catch the ear of the audience, the main theme being the *madih*. Though in the form of personal eulogy, it is really a concentration of the pride in the tribe. The particular patron to whom the verses are addressed is a mere peg on which to hang the ideal that united the tribe as against other tribes. The so-called virtues constituting this ideal are, in addition to the *hamas* already noted, the over-powering passion for vendetta, loyalty to friends and allies (and not to any moral law or civic organization), and hospitality to guests. The pride in valour was so all-engrossing that the dictates of prudence always needed a special and somewhat diffident, pleading.

But, as a rule, the Bedouin considered it below his dignity to try strength with an unequal foe, which is reflected in his acknowledgement of merit on the other side. Those who refused to be restrained by the collective interest and initiative of the tribe in practice of these same virtues were designated the *sa'alik*, i.e. disowned outlaws, whose production bears the exceptional feature of defiance of tribal authority and extra hardihood. Hospitality and generosity were characterized by the same excesses as courage and aimed only at achieving prominence over other tribes. With the transition from tribal into some kind of State organization as, for example, at Hirah, the panegyric tended to be more and more personal and acquired features of flattery.

The Khatimah

The didactic epilogue was devoid of any depth of thought and merely embodied lessons learnt from practical experience in the particular and limited milieu. Religion sat very lightly on the pagan Arab, some occasional references to pre-Islamic ritual only prove that it was treated as part of an inherited tribal custom[6] without symbolizing any moral ideal. The absence of religious thought and feeling is fully confirmed by the total lack of reasoning of any kind whatsoever.

Death is frequently mentioned as a stark fact, but it only stimulated bravery, rather rashness, on the battlefield, on the one hand, and a sort of hectic hedonism in the intervals of peace, on the other. It is in this context that the poetry of Jewish and Christian poets and such pagan poets as were influenced by their thought (e.g. Zuhair and the Hanifs) assumes a distinctive character. The idea of submission to a Supreme Power controlling man and the universe, a life after death involving moral retribution, and a spirit of peace and respect for the rights of others (the very anti-thesis of *hamas*) stand out as streaks of early morning light in the surrounding darkness.

Such poetry flourished mostly in Hirah and the oasis towns like Yathrib and al-Ta'if, which were also the centres of material civilization. Hence truly religious thought and emotion are found side by side with exhilarating pictures of urban refinement in luxury as in the poetry of 'Adiyy b. Zaid. It is noteworthy that

the Romans and Christians were throughout, from the beginning down to the ‘Abbasid period, the purveyors not only of wines but also of the etiquette of wine-drinking.[7] Anyhow, wine-drinking had become a common habit. On the other hand, artistic music and dancing, so far as they are mentioned in pre-Islamic poetry, are mere clichés propularized by individuals who had occasions of frequenting centres of high life under Persian and/or Roman influence. Both these arts were neither indigenous to nor common in the Arabian Society of the days before the Islamic conquests.

The *qasidah* presented a series of thoughts moulded in self-contained verses strung together in the most impressive form of a single metre and *qafiyah*. A thought running into more than one verse was a rarity and regarded somewhat as a weakness of the poet. But one wonders whether the outward unity which was so perfect as to invite the charge of monotony from the uninitiated possessed also a similar unity of thought and ideas.

The fact is that there was enough of coherence internally within the two main parts, viz. the *nasib* and the *madih*, though the appreciation of it depends upon a certain degree of familiarity with the pattern of life and the train of thought and feeling generated by it. It was only the transition from the first to the second part which was rather abrupt, either lacking a link altogether or depending upon one which was clearly artificial and weak. It is, however, untrue to say that the Arabs were not conscious of it; on the other hand, they were throughout applying their ingenuity to *husn al-istitrad* (grace of digression).

Similarly, there is no doubt that the ideas as well as the modes of expression were stereotyped, but the primary reason for it is to be sought in the physical existence of the Arab Bedouin which was characterized, above all, by little variety. The pre-occupation with a hard and meagre subsistence in a monotonous natural scene contributed to averseness to all serious reflection and to poverty of theme. At the same time the totalitarian demands of tribal loyalty left little room for indulgence in personal experience or individual reaction. As soon as thought was quickened by spiritual impulses from Judaism and Christianity and the monotony of life was relieved by the encroachment of Aramaean and Persian material civilizations, the structure of the *qasidah* proved accommodating enough to change.

In addition to *hija’*, there was one more form of artistic poetry, namely, the *ritha’* (elegy), which maintained its position independently of the *qasidah*. Although this form too had its own clichés and was dominated by the spirit of *hamas* and the passion for vendetta, yet the element of strong personal emotion running through it is often genuine and highly remarkable. It is this reliability of the personal element which brings to the fore the strength of the lament of the sisters as compared with that of the wives, which is again a projection of the all-powerful importance of blood kinship.

The tradition has concerned itself only with the preservation of artistic poetry;[8] unconventional pieces prompted by events of everyday life were allowed to lapse. Yet a number of them noted for wit and humour (*al-mulah*) are available for enjoyment on informal occasions.

Islam and Poetry

Wherever the ideals of the *jahilliyyah* suffered a decline owing to the growth of a sense of justice and corporate life under some kind of civic and political organization, there was left little scope for self-glorification at the expense of others (i.e. *hija'*, *fakhr*, and *hamas*). Al-Jumahi makes an interesting point when he attributes the paucity of poets and the meagreness of poetry in the tribe of Quraish already before the advent of Islam to a sense of respect for the rights of others as exemplified by the incident arising out of the lampooning by ibn al-Zib'ara.[9]

Thus, pre-Islamic poetry being so dependent on tribal wars for its impulses and motives, Islam was bound to make the ground slip under the feet of the poets. As soon as the faithful renounced all pride (*al-nakhwah*) and blind partisanship (*al-'asabiyyah*) in favour of a universal egalitarian brotherhood and organized their life under a government by-law, which guaranteed mutual rights and obligations, eliminating resort to force, and treated satire as punishable libel, the poets naturally felt that their day was over.

Unable or unwilling to appreciate any ideal of morality, they turned their invectives against the person of Muhammad and aligned themselves actively on the side of his opponents. It was such poets, and not poets or poetry in general, who were denounced in the Qur'an as incapable of leadership due to lack of moral thinking and purposeful activity.[10] Severe penalties had also to be meted out to a number of them such as Abu 'Azza, al-Nadr b. al-Harith and Ka'b b. al-Ashraf – all of whom had played a part as active competitors while using the art of poetry as an additional weapon directed especially against the person of Muhammad, whose kindness they were not loth to exploit whenever they found themselves helpless.

But the reason for the vehement pique and chagrin of the poets against Islam went much deeper. The ideals of the *jahiliyyah* were not the only thing involved, their art itself was threatened with dislodgment from the position or supremacy enjoyed theretofore. Was there not the Qur'an held up as a challenge to artistic composition? It is quite understandable that the Arabs should be completely at a loss to place the Qur'an in any of the categories of artistic composition known to them. They would call it *al-shi'r* (poetry) when their own poetic production was so palpably different from it both in form and content.

Only poetry had been known to exercise such sway over the minds of the people as the Qur'an did. If it were not poetry it could only be grouped along with the utterances of a soothsayer (*kahin*) or a person in trance (*majnun*). This equation, however, had an ostensibly disparaging intent inasmuch as such utterances were seldom held in high esteem as a piece of art. The allusion was only in their enigmatic character in which the people deciphered fortune and prophecy. When at last they turned to the content, they gave unmistakable proof of their *jahiliyyah* outlook on finding the Qur'an to be merely a bundle of "the stories of the ancient peoples" (*asatir al-awwalin*).

Soon they propped up one of them, al-Nadr b. al-Harith, to draw the people away from the Qur'an with his skill in reciting the stories of Rustan and Isfandiyar. As a matter of fact, the form of the Qur'an is

derived from a familiar pattern, yet it represents a new class by itself. It is prose composed of short, compact sentences which, when read together, sound as balanced counter-parts (*mathani*), The endings (*fawasil*) of them having a distinguishable cadence free from the shackles of a regular *saj'*. It bewildered and dismayed the Arabs that this form which, in contrast with the familiar pattern of the soothsayers, tending to simplicity rather than artificial encumbrance, should soar to such height of inimitable perfection as to constitute a challenge to poetry.

The same is true of the diction employed in the Qur'an: it is clear and easily intelligible (*mubin*), yet pure and elegant. But whatever the elegance of form and diction, the uniqueness of the Qur'an lay particularly in its content, the reflection on the world of nature as distinguished from an aesthetic worship of it, the search for a goal of life and an ideal of morality in human conduct, in short, the awakening of the forces of good in the nature of man to set limits to, and control, the evil in himself. It was this content which made the Qur'an the prototype of an entirely new class of literary composition. In later times it was an aberration of the pre-Islamic taste which exalted the excellence of the word over and above that of the content.[11]

It is quite easy for us to realize the dismay of the poets whose production, when judged subsequently by the standards of the Greek philosophers, was found to be nothing but an exhortation of lewdness, only two qualities of character, namely, bravery and generosity, were such as could be said to be harmless to the youth. But the Prophet appreciated their art much more than they realized. He could not taboo poetry; rather, he would listen eagerly to the verse of Umayyah b. Abi al-Salt and many others. He was not even indifferent.

On the other hand, he adopted the way of active patronage and guidance to make clear the demands for adjustment. As an example, let us take the case of Ka'b b. Zuhair. The ode which brought him the *burdah* (mantle) as a prize is in the traditional style. It opens with erotic verses lamenting separation from the beloved, Su'ad, and recalling her physical charms, not excluding the intoxication of the saliva compared to wine. The *madih* puts a new aspect in so far as the glorification of the new ideal is concerned.[12] But the poet did not yet know how to restrain his passion for satire; he had to make amends for suppressed expressions on the Ansar.

Thus, the only demand made by orthodox Islam on the poets was to avoid the proud and gleeful recounting of adventures of sinful pleasure such as abound in the verses of the "Vagabond Prince," and to refrain from indulging in tribal pride or exaltation of force regardless of moral rectitude.[13] Within these ordinary limits of decency and peaceful life the old literary traditions were to survive and grow. It has particularly to be noted that erotic interest in woman or even the mention of wine as a symbol of joyful experience was lawful pursuit, and not in renunciation, of sensuous pleasure. As the examples of Dabi' b. al-Harith and al-Hutai'ah would prove, only the satire and the libel were sternly put down.

Development of the Ghazal

The detachment of poetry from the passions and the fury of tribal antagonism as well as the absence under the Orthodox Caliphate of that corruptive patronage which draws talent away from the universal human interests to flattery of personages, conduced inevitably to concentration in the theme of love in poetry and song. These arts were cultivated in the Hijaz by the sprightly and intelligent youth from among the nobility of the *Ansar* and the *Muhajirin*, who were precluded from playing their part in politics and government and were at the same time pampered with frequent accessions to their already vast hereditary fortune in the form of largesses on behalf of the Umayyads.

Thus frustration, leisure, and opulence all combined to turn the creative genius to art and amusement. The peculiarly Islamic institution of rehabilitating the prisoners of war as members of the households of the conquerors, instead of segregating them in penal camps, has always had far-reaching consequences, in the field of cultural inter-change but never were such consequences so great as in the case of the conquest of Persia. Suffice it to say that it was the new Persian element in the households of Mecca and Medina which for the first time introduced artistic music and dancing in the very heart of Arabian society.[14]

In the special traditions of the people and the time, there was no music and dancing without poetry. Therefore, poetry underwent a highly welcome and profound change both in form as well as content. Whereas in the *jahiliyyah* period the motif of aggressive self-glorification often made some of the more militant tribes positively to discourage the *ghazal*, it now came to be the main theme catering to the refined aesthetic taste and tenderly feelings of the new society. Naturally enough, the erotic prelude came in hand for development as an independent form, which, by the way, marked the beginning of the breaking up of the "loose unity of the *qasidah*."

The development of the independent form of the *ghazal* took two distinct and parallel lines. First, the licentious (*al-ibahiyy*) *ghazal*, best represented by 'Umar b. Abi Rabi'ah (d.c. 101/719), flourished in the towns and faithfully reflected the high life obtained there. As compared with the pre-Islamic *nasib*, this *ghazal* is an end in itself. The poet is no longer a warrior made essentially of hard stuff, who snatches a few moments of respite to devote to the hot pursuit of a woman. Rather, he is an amiable and amorous youth entirely devoted to the cultivation of his feeling of love and desire for soft dalliance without being distracted by any thought of tribal security and personal safety.

The description of physical charms is no more a mere description; it is rather a fine aesthetic appreciation of beauty. Still more remarkable is the shifting of the focus inwards and the transformation of the union into an exchange of feeling and sentiment.[15] And both the lover and the beloved are endowed with sharp wit, humour, and the mood for sport. In short, the qualities of the mind and the longings of the heart come to the fore and find unimpeded expression. Special delight is taken in the evasion of social restrictions and the celebration of clandestine visits while the congregation at the time of the *hajj* is brought in as the connoisseur's opportunity for the enjoyment of beauty from near and far.

The second kind of *ghazal* was born of the ideal of Platonic love cultivated in the desert. The chastening influence of the restraints of Islam on the simple-living Bedouins had the remarkable result of originating the conception of love shorn of all tinge of bodily lust – an ideal conception thoroughly unknown to the pre-Islamic Arab. This ideal is enshrined in the highly subjective verse centring on the popular stories of Majnun-Laila and Jamil-Buthainah. They may or may not have been real historical personages; what really matters is that they do represent a type of idealistic lover who regards any touch of lust as desecration of love, beauty, and art. No wonder that the physical charms are over-shadowed by a *tete-a-tete* between two hearts full of deep pathos.

Vilifying Ghazal

It has already been noted that the lover-poets of the towns were really men of frustrated political ambitions. Their impotent rage against the rulers would not be held back even when they sought to beguile it with art. Rather it is highly interesting to note that it should turn the artistic form of the licentious *ghazal* into an instrument for vilification and political vendetta. Taking the typical example of ibn Qais al-Ruqayyat (d.c. 80/699 – 700) one finds him mentioning Umm al-Banin, the wife of Walid b. 'Abd al-Malik, as the object of his flirtation. His aim was no other than to leave the Umayyad monarch smarting with anger, even though sometimes he adroitly contrived in the verse itself to absolve the innocent lady of guilt.

Apart from political vendetta, it became a commonplace with the poets to give rebirth to *hija'* in the form of *ghazal* by mentioning the ladies and the female relations of their enemies in shamefully amorous terms. How unrelated to truth all this was, is illustrated by the incident of Umm Ja'far. When she could not keep patience over al-Ahwas, a Medinese poet, mentioning her in his verses in order to bring her people into disrepute, she caught hold of him one day in the market-place and demanded of him the money which, she made out, he owed to her. As the poet swore that he did not know her at all, she remarked, "Of course, you do not know me, yet you mention many things about me in your verses."

It is no surprise that State authority was sometimes invoked against such poets in the same way as it was invoked in the case of the direct *hija'* of al-Hutai'ah and others. At the same time there is evidence to show that at least the high-class ladies aspired to have their charms sung by the poets in the same way as in our own days they would feel proud to see their photographs in newspapers. It must, however, be remembered that, on the whole, "licence" was confined to a disregard of social conventions relating to contacts between the two sexes; otherwise, obscenity was guarded against in all good taste.

In regard to form, it is enough to remind ourselves that the lover-poets of Mecca and Medina produced for the first time a lyric verse especially designed to be set to music. With this purpose they naturally referred such metres as were short and characterized by an easy flow, though they continued to rely mainly on the old tradition itself. Consequent upon the development of natural, humanistic interests, all artificiality about the language and pompousness was shed and simple unaffected expression in familiar words and soft tones came to be aimed at. To some, though very limited, extent, continuous verse also

came into use for such purposes as the reproduction of dialogues in love-poetry.

It so happened that the merits of the Umayyad poetry set out above received little appreciation owing to the pre-occupation of the scholars with such pre-Islamic poetry as might be helpful in the study and preservation of the idiom of the Qur'an. With regard to its appreciation, the time factor alone was the prime importance; hence the prejudice in favour of the pre-Islamic verse became stereo-typed and all pervading. It was ibn Khaldun who first realized that, linguistic research apart, the intrinsic artistic merits of the Umayyad poetry were definitely far superior to those of the pre-Islamic poetry.

And the reason for it was that those who lived under Islam benefited from the model of high class speech provided by the Qur'an and the Hadith; hence, their literary taste improved a great deal beyond that of the pre-Islamic people. That this improvement should have taken a generation to manifest itself fully in poetry (and also in prose), was quite natural and should not stand in the way of tracing it to its origins in Islam. The depth of thought, the richness of imagination, the paramountcy of content, the search within for the feelings of the heart, and the consciousness of the restraint of reason, and its Holy Book, and these general qualities are perceptible in the post-Islamic production even where the themes are un-Islamic.

It was perhaps this un-Islamic element such as the "licence" in *ghazal* and the lampooning in the *naqa'id* which, in addition to the necessities of linguistic research, turned the attention away from the contribution of Islam to the literary production of the Umayyad period. Ibn Khaldun further tells us that some of the learned scholars of his time had to acknowledge their dormant impression of the superior merits of the post-Islamic production, as if it were to their own surprise, but were unable to give any reason for it.[16] No wonder that the view of ibn Khaldun should remain unattended until it found an echo in Taha Hussain, although the latter's judgment seems to have been the result of the application of the modern standards of literary criticism in the West.

If one were to look for the dominating motif of poetry in Islam itself, it will be found in the verses of the Kharijites. Their production represents a characteristic regimentation of the pre-Islamic qualities of hardihood, courage, and sacrifice in the service of the ideology of Islam. Just because it is as true of life as the poetry of the pre-Islamic age, the new spirit, ideals, and sentiments are clearly discernible. Yet it symbolizes, according to the cultural milieu of the Kharijites, the purely ancient Arab tradition as mellowed by the Islamic Puritanism.

Most interesting is the survival without any loss of attraction of the erotic theme in a society where even the "talk" of wine or a mere hint of laxity in relationship between the two sexes was an unpardonable offence. Equally notable is the spirit of martyrdom which would not allow virility to be impaired by a relish of tragedy and pathos for their own sake.

While under the Islamic influence poetry was set on its course of development along natural, humanistic lines, the corruptive patronage of the Court stepped in to revive the old tribal antagonism and buy off

unscrupulous, though talented, poets to act as its propagandists. Thus the trio – Farazdaq, Jarir, and al-Akhtal – attained high fame in the field of panegyrio and lampoon. They couched praise for the Umayyads as well as invectives against their opponents in the true form of the *qasidah* with its carefully chosen diction and high-flown style. The Christian al-Akhtal, who, by the way, was considered to be free to revel in wine without offending Muslim piety, was also remarkable for his willingness to step in where a Muslim, irrespective of his alignment, feared to tread, namely, the satire against the Ansar. The counter offensive from the other side showed a much more genuine feeling of devotion not only to the House of the Prophet but also to the ideal of justice and public weal popularly associated with it.

The contrast between the settled life in the towns and the Bedouin ways of the desert has throughout been a powerful factor in Arab thought and history. Islam, with its marked predilection for congregational activity, accelerated as never before the process of drawing emigrants from the desert, who flocked into the towns to enlist in military service, State organizations, and economic activity. This created nostalgia in the mind of some poets who introduced a new theme, viz. the comparison of new life, including the charms and manners of the damsels of the towns, with the old ways of the desert.

Even in regard to the *qasidah*, though its conventional form remained intact, the new pattern of society changed the modes of thought and the manners of expression sufficiently to render the purely Bedouin tradition a mere curiosity. This curiosity had its last protagonist in Dhu al-Rummah (d. 117/755). It is somewhat in the same spirit that the oldest and the simplest form of *rajaz* were employed in long *qasidahs* pedantically over-loaded with rare vocabulary.

The ʻAbbasid Era

With the advent of the ʻAbbasids the corruptive patronage of the Court, which siphoned poetic talent into the *madih*, expanded to such an extent that only a few could keep themselves free from it just because they were consciously determined to do so. Curiously enough, as the Caliphate declined it only led to a multiplicity of such centres of patronage and thus the servility of the poets went on increasing further and further. At any rate, the growth of luxury and the enrichment of culture from foreign sources were bound to seek an outlet in new forms and modes of poetry.

Fortunately the traditional *qasidah* did comprise within its orbit a large number of themes concerned with peaceful enjoyment or warlike activity, which, in their developed form under the Empire, now claimed separate treatment. All that required was to salvage the various themes from regimentation by all the engrossing passion of tribal solidarity as signified by the supremacy of the *madih*. This process, which started with the development of the *ghazal* under the Umayyads, took its full course in the following era until all the topics treated incidentally in the old tradition branched off into independent kinds.

Further Development of the Ghazal

It will be remembered that Islam, not being a monastic religion, regards woman not as a taboo but as

one of the three things dearest to the Prophet. Thus, the theme in itself, far from offending the moral sense, was particularly compatible with Islam's bold affirmation of nature. Significant is the use in the Qur'an of this very imagery of woman and wine for the conveyance of an idea of the highest bliss in the heavens. It must, however, be admitted that a certain degree of licentiousness has actually attended upon the development of the *ghazal* from the very beginning.

Towards this element of licentiousness the early Islamic society adopted an attitude of practical toleration as apart from official recognition; it was only the personal scandal which was generally condemned by the people and sternly curbed by the State. This tolerant attitude is best embodied in an incident at the Court of Sulaiman b. 'Abd al-Malik. Once when al-Farazdaq recited to the monarch such verses of his as amounted to a confession of adultery, the monarch perhaps could think of no better way of expressing his appreciation than to embarrass the poet with the threat of legal cognizance and penalty.

But calmly the poet asked him, "The sanction behind the penalty?" "Of course, the Qur'an," replied the monarch, whereupon the poet retorted, "All right, the Qur'an itself assumes my innocence when it says of the poets that they 'celebrate in speech what they do not practice!'"[17] Truly, there is much more than wit in the argument of the poet; it gives pointed cognizance to the fact that a poet relies mainly on his mental experience. Practical experience has no essential bearing on art; rather, it is a matter of personal character.[18]

In the words of Nuwas, one can safely and effectively "talk of fire without burning one's mouth." Thus cultivation of the erotic verse, including the licentious *ghazal*, originated and flourished vigorously under Islam in public circles. But as soon as it was transferred to the royal palace it suffered from the same servility to the over-indulged baser instinct of the patrons as the *madih* in relation to their inflated sense of vain-glory. At the palace the poet was promoted to the position of boor, companion who shared the privacy and the intimacy of the patron, and enlightened, diverted, and amused him with appropriate citations, impromptu compositions, and ready wit.

It is legitimate to link this institution with the life of the pre-Islamic poet, al-Nabighah, at the court of Hirah, but one has to take note of the steadily increasing dissoluteness and sexually exhibitionism which began with al-Walid II and reached its climax in Abu Nuwas.[19] This exhibitionism was designated separately as *al-khala'ah al-mujun* and was relished only in the company of intimate friends as a source of enjoyment. From the palaces it percolated down to public circles and was preserved only for the sake of witticism and elegance of language – obliquity it was condemned outright as obscene and in sheer bad taste.

Bohemianism

In public circles the joys of life were idealized in terms overtly disdainful of moral restraint under the pressure of another set of circumstances in which national and political rivalries played a significant part.

It has been noted above that in the initial stage licence in poetry was treated apart from the personal character of the poet. But gradually the poet's own guilty conscience and the general social approbation caused him to introduce in poetry itself some sort of defence of his own promiscuous way of life. This involved an active propagation of the disregard of social and moral values, scorn for the religious preceptor, an invidious lack of faith in after-life and at the same time a somewhat philosophical justification for the excesses from God's quality of "forgiveness."

Even this development left the larger section of society unalarmed; it was taken merely as an exercise of wit and humour. Soon, however, there was a further development in the peculiar atmosphere of Baghdad which was torn by Persian-Arab rivalry – a rivalry fanned by the alignment of the Persian element with the 'Abbasids. In Baghdad certain types of literary Bohemians, mostly Persians, organized themselves into cells or clubs where wine, women (those of a low status, of course) and poetry full of sarcasm for the orthodox way of life were zealously enjoyed. From apologetics it now passed into the phase of active glorification of practical libertinism.

And all this was done in a spirit of arrogant demonstration of the intellectual refinement and cultural superiority of the Persians so much so that *zarf* (quickness of wit) came to be proverbially associated with this class of proud libertines – *zindiqs* as they were called.[20] Although it is very doubtful that many of these Bohemians were genuinely devoted to Zoroastrianism or Manichaeanism as against Islam, it is a fact that some of them were bold enough to mention the names of Zoroaster and Mani as the Bacchul-like patrons of libertinism as against the restrictions on pleasure symbolized by Islam.

Anyway, there is little doubt that this cultural arrogance was linked with the aspiration to greater and greater political control, which made the 'Abbasids closely watch and suspect their own supporters. While the public were left speculating as to the cause of the sudden downfall of the Barmakids, a methodical *zindiq*-hunt was set afoot, the verses of the poets were incriminatingly dissected at ceremonial trials and the guillotine applied to the partners in the widespread net of conspiracy.[21] Thus the poetry of Bashshar (d. 168/784) came to be typical of that pursuit of refinement and culture which is associated with the enjoyment of woman and wine and their celebration in arts and song enlivened by wit, humour, and sarcasm on social and moral restrictions.

Before we pass on it has to be added in regard to these libertines that their fund humour and sarcasm was not exhausted in their engagements with the opponents, their unprincipled levity often caused them to exercise the same resources against one another. Hence, most of them have the reputation as satirists as well.

New Features of the Ghazal

A few special features of the new *ghazal* under the 'Abbasids have to be noted. First, there was the addition, almost substitution, of the male for the female object of love. It must be admitted that it almost amounted to a common social vice attributable to Persian influence. Secondly, a refined taste in similes

and metaphors and the subtlety of imagination in general are also traceable to the same source. Thirdly, though gleeful descriptions of wine were quite old in Arabic poetry, the subject came now to be cultivated as an independent art. As with the theme of beauty so with that of wine; it is no longer a mere description of the transparency of the glass, the colour of the wine, the various stages of brewing, and the haggling of the wine-seller over its price, nor is wine-drinking a mere appurtenance of nobility.

The emphasis now is on the inner sensation of abandonment and revelry experienced by the drunkard. Lastly, one has to take account of the special characteristic of Islamic society which causes even renegades of the type of Abu Nuwas to be over-taken by remorse and pious reflection in old age. Hence, *al-shaib w-al-shabab* (old age and youth) developed into a recurring and semi-independent theme closely associated with the *nasib*. It is characterized by recollections of the pleasures which are no more than reach or capacity – a feature inherited from pagan poetry. Under the influence of Islam it was complemented with a desire to make amends for the erroneous ways of the past.

Moral, Philosophical and Mystic Poetry

It would be a very lopsided view indeed if we imagined the ‘Abbasid society to be merely that which is pictured by the boon companions of the *elite* and the Bohemians of the metropolis. Religion and morality had their own devotees and champions in no way negligible either in numbers or in importance. In the very nature of things, however, religion, as apart from religious sentiment, could not be cultivated in poetry. Morals formed a fit theme for poetical art. They also had a precedent in the so-called wise sayings of the pre-Islamic poets, though these latter were entirely devoid of any element of reasoning in them.

Abu al-‘Atahiyah (d. 213/828) introduced moralizing verse characterized by thought and reflection but it was because of this very new basis that it came in for reserve and suspicion. Also, it inevitably involved criticism of the prevalent modes of society. Abu al-‘Atahiyah sometimes appears as the spokesman of the down-trodden masses bringing to the notice of the Caliph their economic plight and difficulties. Most unfortunate of all, the entire theme was permeated with a mood of pessimism which persisted and was steadily augmented by the influx of philosophical ideas and monastic tendencies.

Philosophical poetry reached its highest achievement with Abu al-‘Ala’ al-Ma‘arri (d. 449/1057), who made a frontal attack on all religions as such and exalted reason in opposition to revelation. Yet he remained the pessimist *par excellence*. His eclecticism also centred on the austere as exemplified by the particular features of Indian philosophy proved no more delectable in verse than religion. Even though Abu al-‘Ala’ was a master of literary arts, his philosophical poetry remained a simple statement of judgment and argument unclothed in poetic imagery; hence, it provided enough justification for denouncing it as “no poetry at all” (ibn Khaldun).

His resort to jugglery with words is also a further proof, if proof were needed, of his woeful failure to devise a truly poetic form for the presentation of his philosophical thought.[22] That is why his poetry

seldom achieved any high degree of popularity, though he was, and has throughout been, highly respected as a scholar. It is wrong to attribute this to the prejudice against the anti-Islamic ideas contained in it. Had it been so, the production of the libertine poets would not have fared any better.

The true reason is that Abu al-'Ala's poetry was bare of essential poetic appurtenances. In the words of an Arab critic, the art of poetry consists in making a thing appear beautiful: the intrinsic beauty of the thing or the idea would not make up for any crudity of presentation. The libertine poets were accomplished masters of this art of presentation; hence, unlike Abu-'Ala', they were widely enjoyed but seldom respected.

In contrast with philosophy, mystic ideas belong essentially to the theme of love and naturally command for their expression all the paraphernalia of love and poetry. The high sentimentalism of the mystic poets was enough to ensure for them a strong popular appeal, in consequence of which they came in for persecution while Abu al-'Ala', a lone voice, was left comfortably alone. Again, we have to note that, significantly enough, the popularity of mystic poetry survived all questioning of the orthodoxy of its contents and even the attacks on the person of the mystics.

But the excessive sentimentalism of the mystic poetry centring on the beatific vision is such as to have a lamentably adverse effect on the search for clear, practical ideal of life and the urge to realize it through activity. The passivity of an intoxicated visionary, as opposed to the ardent activity of a devoted missionary, formed the keynote of it.

Formal Panegyric

Apart from the lighter side of the life in the privacy of the palace, which was shared and recorded by the *nadim*-poet, there were many formal occasions and official assemblies at the Court when the emphasis was on decorum and dignity. On such occasions it was the strictly conventional form of the *madih*, the *qasidah*, which was in vogue. In view of the rigidity of its forms had already noted, it is no surprise that it required the highest skill to handle it with success. In any case, the monotony of the stereo-type could only be made up with hyperbole and rhetorical tropes of all kinds. Some pedantic display of logic and philosophy was also introduced as a novelty.

As these formal panegyrics were designed in the manner of the party press of our own day to exalt the powers that be in the eyes of the public, naturally enough they were replete with references to the political ideology – often bound up with specific religious belief and dogma – of the ruling dynasty as, for example, the claims of the 'Abbasids *vis-a-vis* the 'Alids. But, while there were scores of those who for sordid gain served as mere trumpeters, there was no dearth of those who spoke from conviction. And in fairness it must be said that the conscientious objectors on the side of the opposition were given a long rope only if they had the courage to forgo the patronage of the Court.

It was also in this traditional form fit for themes of grandeur and no levity that the incidents of the wars

were pictured. They came to be particularly relished by the Bedouin spirit of the Hamdanids under the shadow of the Crusades. Another theme cognate with it was that of the prison-poems (*al-habsiyyat*) best represented by Abu Firas (d. 357/968). They are an impressive blend of nostalgia for home, pathos of suffering, and indomitable courage.

Complaint against Time (Shakwah al-Zaman)

Perhaps the most depressing aspect of the poetry of these times is the common expression of dissatisfaction with one's lot and a feeling of insecurity in respect of life, property, and position. As undeserving people enjoy wealth and power and real merit is neglected, nay persecuted, consolation is sought in the acceptance of this state of affairs as the "way of the world" – the decree of fate beyond the control of man.

There was no such dominant note of despondency and helplessness when the pre-Islamic poet occasionally bemoaned the inscrutability of fate (*jadd*) and the failure and his hard struggle (*jidd*) to bring him the coveted reward. Even in the early days of Islam fate did not appear to be so arbitrary: when there was dissatisfaction it was directed against *persons* – tyrants and other dynasties. It is only in the late 'Abbasid period that the complaint against "Time"[23] became almost a fashion, so much so that the poets simulated it in the same way as they simulated love.

Personal and Occasional Verse

It was characteristic of the progress of culture that poetry be sought after as the medium of the communication of thought and feeling occasioned by the vicissitudes of personal relations and small incidents in everyday life. The pre-Islamic poet also had frequent occasions to address his *"ibn al-'amm"* (cousin) in reprobatory terms, but his utterances were deep-rooted in the actual matter-of-fact struggle for existence. The *ikhwaniyyat* of the period under review constitute a branch of cultivation of elegance. The difference is the same as between an actual fighter and an amateur sportsman.

The topics range over estrangement, effort at reconciliation, and tickling and teasing through wit and humour. These categories, however, appear to be sham when compared with the impressive genuineness of the pieces relating to incidents in everyday life as, for example, the one attributed to a *literatus* who was compelled to part with his collection of books in a time of adversity. This kind of poetry concerning the unaffected, natural gushing forth of some poignant feeling or passion aroused by the actual facts of life reached its full development in Spain in general and in the verses of al-Mu'tamid in particular.

A strong element of genuine enthusiasm and personal acrimony is also evoked by the rivalry among the diverse national groups: the Arabs, the Persians, the Turks, the Romans and the Negroes. Pride-cum-satire was the popular form of championing one nationality against the other on the basis of ethnology, history, mental qualities, and cultural achievements. This must be distinguished from the aspect noted

above which concerned the exaltation of a particular kind of social and cultural life.

Descriptive Poetry

Beauty no longer remained confined to nature: there were high mansions, fortified castles, exquisite mosques, and public buildings, and, above all, public and private gardens, aqueducts and boat–houses – all claiming attention from the artist and the poet. Even the starlit sky and the cloudy horizon were endowed with a new charm. To the Bedouin they gave only a simple impression of awe and induced a mood of little good cheer; to the Baghdadi who went out for a stroll in the evening they catered to his desire for the enjoyment of beauty. Thus, the descriptive poetry of this period, which often monopolizes the larger part of long *qasidahs*, is almost something new.

It is exhilarating indeed to find roses being compared to cheeks and tall cypress to the slim stature of damsels rather than *vice versa* as of yore. Flowers in particular were the craze to the tasteful and the elegant, which even used them as symbols of moods and sentiments in their exchanges of love.[24] No surprise that the description of flowers (*al–zahriyyat*) should grow into a semi–independent branch of poetry in which al–Sanubari (d. 334/945) distinguished himself in the East.

Yet there is nothing comparable to the poetry of Spain so far as high sensitivity to nature is concerned. There the poet not only describes and enjoys nature but also shows himself to be in communion with it. Another branch of descriptive poetry which attained semi–independent form was *al–tardiyyat* (venery poems). It also reflected an ample measure the trappings of luxury and civilization around an old traditional interest.

Panegyrics on the Prophet (al–Mada'ih al–Nabawiyyah)

As we have seen earlier there was no time lost in celebrating the achievements of the Prophet and composing panegyrics on him in the traditional form and style of the *qasidah*. When the Umayyads fanned political partisanship by employing the poets to denounce their rivals, it evoked a new spirit of selfless devotion to the cause of the ʻAlids, which found its most forceful exponent in al–Kumait. It soon became a panegyric on the family on the Prophet which was characterized, apart from legal arguments in favour of the ʻAlid claims, by a good deal of symbolism of pathos and suffering drawn from the incidents of history.

A concomitant theme of high general interest was the condemnation of tyranny, oppression, and mis–rule coupled with the ferent hope of return to ideal conditions at the hands of the virtuous Imams. The two sides carried on the old bout right through the ʻAbbasid period during which the ʻAlids continued to be in the wilderness of opposition. In later times when the political controversy lost a good deal of realism and turned into mere sectarian ritual, this kind of poetry was taken over into the circles of the Sufis, who concerned themselves particularly with its content of loyal sentiment and tragic pathos.

These Sufi composers, it will be remembered, were seldom men of high literary attainments nor did they

care to examine facts and rely on them alone. Rather they would introduce all sorts of superstition which would feed sentimentalism. A famous example of this kind is the pseudo–*Burdah* of al–Busiri (d. 694/1294 – 95) which, though not devoid of literary elegance, is typical of superstitious belief and is esteemed primarily for its supposed magical properties.

The framework of these panegyrics being that of the traditional *qasidah*, the essential prelude of erotic verses was there. It was, however, observed as a convention that in this particular context "love' should be characterized by restraint and dignity rather than "licence." For example, it was specifically disallowed to mention a male object of love or to refer to the hips or the charm of the naked shin among the physical attractions. It will be seen that this only confirms the thesis advanced earlier that erotic interest in woman (without licence) was no offence to Muslim piety.

Still later when originality became rarer the form and the theme of the panegyric on the Prophet were used for the demonstration of one's skill in rhetorical tropes, such *qasidahs* were designated the *badi'iyyat*. That kind of play with words is, of course, beyond the purview of poetry proper.

Adaptation of Metre and Diction

It was indicated at the very beginning that the metrical forms handed down by the pre–Islamic poets continued to hold their own throughout the classical period. We have only to review the adaptation of these forms to the demands of new developments in theme and style. First, there was the preference of short, flexible metres and then, with the dethronement of the *madih*, the tendency to short pieces devoted to single or closely allied themes.

However, the only departure from the tradition with regard to the *qafiyah* was the adoption from the Persian of the *muzdawaj*, i.e. tanzon with each verse having a separate rhyme for its two hemi–stitches (instead of the whole poem having a single rhyme for the endings of each verse). This was the form attributed to the Zoroastrian scriptural psalms which the *zindiq* poets were charged with reciting in secret. And obviously this was the form best suited for the epic which, because of its length, made it well–neigh impossible to sustain one single rhyme–ending.

But though the form of the epic narrative (*al–sh'r al–qasasiyy*) was found, the Arabic poets failed to achieve anything remarkable in the field from an aesthetic viewpoint. The early pioneers, ibn al–Mu'tazz and al–Khuraimi, were tolerably good in picturing national calamities but unfortunately it was now reduced to a mere mnemonic versification of the chronicles of kings and dynasties without anything of genuine poetry about it.

No sooner did the need to please the vanity of the patron disappear than the diction tended to be unaffected, soft, sweet, and naturally fit for the theme and content. Abu al–'Atahiyah, himself a pitcher–seller, succeeded particularly well in employing the simple language of the common people without any loss of standards. On the other hand, this trend towards the natural and the unaffected suffered some

degeneration at the hands of the libertine poets like Bashshar, who did not mind effeminacy and the verbatim reproduction of the idiom of the sporting women in the private company of lovers.

Strophic Verse

It is quite understandable that the need for strophic verse should arise as soon as music and dancing were introduced in Arabia consequent upon the Islamic conquest of Persia. Al-Khalil has left behind a few verses which are like a formula for the rhythmic beating of the feet.[25] Further, the attempt to evolve an artistic form for the special purposes of music and dance took the direction of adaptation of the old tradition rather than a complete innovation.

The full length poem was divided into parts consisting of two or more verses, each part having a different single rhyme for its several hemi-stitches but all the parts followed by the repetition of a particular verse with a rhyme of its own and thus held together as if by a string (Ar. *simt*; hence the device called *al-tasmit*). This evolution must have taken place at a very early period since it is ascribed without certainty to Imru' al-Qais. It was the same device which was employed to take greater liberties with rhyme (and also metre) in Spain under the name of *al-muwashshah* (from *wishah* meaning girdle).

Later, when the colloquial dialect was fully admitted to this form it came to be known as the *zajal*. Thus, it came to be an artistic form just free enough to be within easy comprehension and unsophisticated taste of all, yet devoid of none of the essentials of traditional art. From Spain it was brought to Egypt and the East and achieved a high degree of popularity. There were still more spontaneous forms of strophic verse in which the street vendors and the like moulded their cries but in all cases the *qafiyah* was fully relished and the variety of it in different strophes was compensated with the uniformity of the refrain in between them.

B. Prose

The earliest specimens of Arabic prose coming down to us from the pre-Islamic times fall into the following categories:

1. Proverbs

2. Oracular sayings

3. Orations and

4. Accounts of battles and stories of love, adventure, and entertainment.

Except for the last category the form in vogue was unmistakably epigrammatic and high condensed, consisting of short, cadenced and loosely rhymed sentences. This form was quite in conformity with the morphology of the language and the peculiar temperament of the Arab, particularly in view of his reliance

on memory alone for preservation and transmission. No surprise that whatever did not conform to this requirement of form was simply allowed to go by the board.

The oracular sayings were almost lacking in any content whatsoever. If the oracle excelled in anything it was mere adroitness in ambiguity. The most remarkable from the viewpoint of the content were, of course, the proverbs, of which the few highly suggestive words often symbolized a whole story deep-rooted in the simple Bedouin life. Hence, they were early recognized as a source, second only to poetry, for the knowledge of the history, manners, customs, and superstitions of the Pre-Islamic Arabs. In subsequent periods also, there was a remarkable curiosity to pick up pithy and suggestive lines and phrases from poetry and prose and to pass them round in speech and writing. Thus, the stock of proverbs, which in Arabic include idioms and phrases in common use, never ceased increasing and receiving variety from the changes in the pattern of life. Often they mirrored the experiences, complimentary and otherwise, of contacts between the various nationalities.

The orations were designed for actual needs arising out of war-like tribal activity or communal social relationships. Though prose, however, exquisite, was always rated as a lesser form of art, there is no doubt that oration had sufficiently developed into a recognized literary medium. It would also be justified to assume that sermonizing for its own sake, as, for example, on wise conduct and good behaviour had come into vogue.

The evening get-together in the courtyard, generally under the auspices of some generous dignitary, is the age-old manifestation of the Arab instinct for communal social life. The importance of this feature in the hard, matter-of-fact life in the inhospitable desert cannot be over-emphasized. It is also quite understandable that the main diversion on this occasion should be a round of talks on events and anecdotes bound up either with historical curiosity or common interest in love and adventure.

The contents of this *samar* can be easily be distinguished as (a) the narratives of the battles of the Arabs, (b) stories of love and adventure of Arabian provenance, and (c) stories borrowed from foreign sources. Some traces of the beast-fable have also been found scattered here and there. Nevertheless, pure fables were seldom flair of the Arab mind even in subsequent times. Naturally enough, this evening talk was couched in simple informal language with emphasis on content rather than on elegance of word, and the way in which it has been recorded by the scholars of early Islam can at best be described as quotation from the speech of the narrator.

Influence of the Qur'an and the Hadith

The unique position of the Qur'an as the first book in Arabic has already been noted. It, for the first time, made Arabs fully aware of the potentialities of prose as an artistic form. Still more important in another way was the normative influence of the Hadith. It is certainly wrong to assume that the influence of the Qur'an was in any way circumscribed by its claim to inimitability because even an unattainable ideal is always potent enough to set the direction of effort in the future. But, of course, there was an air of

formality about the Qur'an.

On the other hand, the Hadith represented the model of effortless, everyday speech – simple, terse, to the point, efficacious of purpose, and interspersed with flashes of vivacity and humour. The most important general contribution of both the Qur'an and the Hadith was to drive home the primordial need for setting an aim and a purpose in speech and composition and making both the content and the word fit and conform to the same. The new outlook on literary beauty as related to a definite purpose represented a radical change from the old tradition of aimless talk – "the wondering into every valley" (Qur'an) – and gave birth to a mental discipline which is the hallmark of the orations and the epistolary compositions of early Islam.

The official correspondence of the early Caliphs and their addresses on different occasions of war, legislation, and administration are all marked by a simple and direct style of flowing naturally from high concentration on purpose and thus surpassing all art. Yet they show all the dignity of authority. It will be remembered that orations and epistles were the two branches of literary composition which were especially favoured in early Islam by the needs of administration as well as congregational activity and social life. They only underwent a portentous change at the hands of the Persian secretaries, who introduced in the Arab chanceries all the fanfare of the Sassanian Court by way of pompous language and grandiose style.

Early Works on Adab (Belles-Lettres)

The early literary activity (apart from poetry) concerned itself mainly with compilation and narration rather than personal creation. The scholars and the students were content with collections of texts and explanations of important pieces of poetry, proverbs, orations, sayings of prophets and wise men, historical narratives, and witticism – all considered to be the necessary equipment of polite education and moral instruction. These collections were like packets in which the knowledge of their compilers was lumped together without any systematic arrangement or classification, the compilers themselves contributing only a few comments here and there. Only ibn Qutaibah (d. 276/889 – 90) introduced some order into the invaluable chaos.

The beginning of original production was closely bound up with an interest in man and his natural surroundings. Curiously enough, this interest was roused by the rivalry among the various nationalities within the 'Abbasid Empire. The political and social conditions of the time promoted interesting, even though acrimonious, discourses on the characteristics – physical, temperamental, and cultural – of the peoples of different lands as exhibited in their current behaviour and past history. Al-Jahiz (d. 255/868 – 69), one of the first Mu'tazilites to study the Greek naturalists endowed these discourses with the superb literary form of *causerie* or short tract characterized by a combination of erudition and artistic skill with the spirit of reliance on facts of observation and history rather than on speculative deductions.

Thus, highly scientific data, worthy of a Darwin, relating to the processes of adaptation between man and

nature, came to form the theme of high literature and art. Al-Jahiz's "Book on Animals" (*Kitab al-Hayawan*), a fine specimen of the wedlock between art and science, is a definite gain to literature and a high compliment to the general culture of the time. Only one is left wondering whether science would not have prospered better by an early separation from its charming companion.

Popular Anecdote

Beyond the circle of scholars and students the interest of the common people lay in the anecdote couched in simple, unsophisticated language. They sought light entertainment by listening to stories of love or adventure or a blend of both. Apart from the pre-Islamic lore, the wars of Islamic conquest lay handy for the purpose and were especially suited to satisfy at the same time religious fervour, national pride, and the instinctive love of adventure. There is ample evidence to show that the conquests were actually the subject of a saga which, however, could enter the books only surreptitiously.
Two other streams contributed to the fund of anecdotes in the early Islamic period: first, the South Arabian lore in which the Umayyads took particular interest as part of the glorification of the Arabs, and, secondly, the Jewish religious lore which was widely and indiscriminately drawn upon the *qassas* (religious sermonizers). None of these stories, however, could find artistic presentation because the regard for historical truth prevented their incorporation in book form: the dangers which were guarded against are illustrated by the corruptions that evaded detection and are found today here and there.

Even when they were collected in book form at a very late period and they continued to be regarded below the dignity of a scholar. Of course, the stories of love which are not liable to be mixed up with religion and history were given freer admittance to the literary circles, but even these (e.g. the story of the ideal love of Majnun or the profane love of Waddah al-Yaman) were recalled only with reference to poetry and seldom took any definite artistic form in prose. Whatever form these popular stories possess has only been achieved effortlessly through common repetition.

Story Cycles

The indigenous stories of love alluded to above were simple incidents which could not keep the attention of the *samar*-hungry audience for any considerable time. As town life grew, the need was felt for cycles of stories or stories within a story, separate yet inter-connected with a string plot which would keep the curiosity on its edge for as long as "Thousand and One Nights." This need was met, in the first instance, by import from Persia, which had long been known to be the store-house for such stories.

The Persian *afsanah*, the prototype of the Arabic story cycles, had passion, wonder, and surprise as the keynotes of its content, it is the quest for the wonderful and the surprising which brings in super-natural elements and magic to heighten the effects of adventure, and treachery and moral depravity to enhance love. This element of wilful selection and exaggeration of the unusual in actual life should not be over-looked in making any sweeping generalizations in regard to the state of society. The over-tone is particularly deceptive in regard to historical personalities as, for example, Harun al-Rashid, who though

he indulged in luxury and sensuous pleasure in private life, would never allow any lapse from dignity and moral propriety in public.

It was perhaps in the original core of *Hazar Afsanah* itself that popularly idealized historical personalities were woven into the texture with a view of imparting a touch of reality to the fiction. Yet it is remarkable that this particular branch, as contrasted with that of *Kililah wa Dimnah*, was successfully cultivated at Baghdad and Cairo. The anonymous *maddahs* went on dressing up the borrowed material and augmenting it with their own creation until the whole stock was moulded into a more or less fixed but sufficient polished form.

The professionals, whose job was gradually reduced to vocal performance, often to the accompaniment of simple instrumental music, circulated and transmitted the stock by oral tradition among themselves until it was redacted in book form in about the ninth/15th century. The form and the content of these story cycles would be better appreciated if it is constantly kept in view that they were never meant to be read; they were recited to an audience seeking mental relaxation rather than intellectual satisfaction. They were designed simply to amuse and not popularize or criticize any particular view of society. Rather, the surmise is that they were secretly helped into circulation by the powers that we interested in turning the attention of the masses away from political and social problems.

Hence, all the emphasis is on the tempo of action to the subservience of everything else. Further, in the very nature of circumstances, the style and the diction could only be such as were regarded elegant and interesting by the standards and taste of the common people. It really reflects very well on the common culture of those days when people could learn how to appreciate and enjoy elegance of language in their ordinary social surroundings without necessarily studying at school. But after all the story cycles never regarded as a piece of literature (*adab*) and were never read and taught by scholars as such. It was only in the West that the scholars thought it worthwhile to devote time to the *Alf Lailah wa Lailah*.

The *Siratu 'Antar*, another notable work of the same class, bears the impress of conscious art, its texture being loose-rhymed prose embroidered with some 10,000 verses. In point of content, a hero of the pre-Islamic times is made to live through 500 years of Islam down to the Crusades, personifying in himself all the chivalry of the famous knights of Islamic history as well as the legends of the Persian epic. It sprang into popularity in the tense atmosphere of the Crusades and represents fully the peculiar temperament of the time.

High-class Fiction

It will be seen from the preceding two paragraphs that the imagination of the Muslim masses, like that of the masses of any other people, was strongly tempted to dramatize history and to develop the hard core of facts in fabulous stories. But such a pursuit was totally barred to a Muslim scholar by his high sense of intellectual honesty and academic responsibility cognate with the sanctimonious regard for religious purity. As fiction was disdained and frowned upon by the cultured, it was condemned and relegated to

the circles of the common people.

Pure fiction, which posed no danger of distortion to valuable fact, was quite welcome in literary circles. But, again, *literati* were earnest people who would relish a fable only if it had some moral import in the manner of the stories of the Qur'an. It will, however, be observed that the reliance of the Qur'an on the known incidents of history, rather than fables, to point a moral is highly significant as being in full accord with the peculiar temperament of the Arab. Not that the Arab was weak in imagination; he only considered it somewhat childish to invent fictitious tales, which is best evidenced by the clear absence of a mythology even in the pre-Islamic days.

He was indeed very fond of moralizing but would do so only through direct, pithy, and pointed proverbial sayings supported by illustrations from real life. The style of the Qur'an in this respect stands in sharp contrast with that of the sacred books of India, which seek to convey the truth mainly through fables. Thus, it was only when highly cultured Persians consecrated themselves to the service of Arabic that the treasures of the Indo-Persian tradition were transferred into this language. As these were mere translations, their contents do not belong to Arabic: only the use of the artistic form of Arabic for this kind of composition was a notable innovation.

The rendering of the *Kalilah wa Dimmah* by ibn al-Muqaqffa' was designed to be read by the educated class who relished it for its moralizing on the conduct of private and public affairs. It was warmly appreciated as a novelty and versified more than once, but the attempts at imitation of the model failed to achieve any considerable measure of success. Thus, pure fiction too, like the fanciful encrustment of history and religion, fell to the lot of the common people who indulged in it for sheer amusement.

The unproductivity of the Arab-Islamic milieu, so far as high-class fiction is concerned, has only to be viewed by the side of unparalleled success in the preservation of the religious texts, the scrupulous eschewing of the subjective element in historical annals, and the evolution of a full-fledged science for establishing the authenticity of a text with reference to the character of the narrator. In short, the learned and the scholarly devoted themselves to checking the rampancy of the imagination of the unlettered rather than giving free reins to their own fancy. Further, the authority of the *Shari'ah* left no need for any emotional pleading or intellectual canvassing by dramatization of social problems; hence the absence of the story or the novel except for literary and philosophical themes.

Literary Epistle (Risalah) and Rhetorical Maqamah

The extra-ordinary interest in linguistic studies provided a scholar in early Islam with a vast fund of vocabulary and usage as well as a sense of elegance and beauty in expression. He, however, waited for events and occasions in actual life to put his knowledge and skill to use; hence, the absence of any prose form than the oration and the epistle. The disputations on the merits of the various nationalities and different classes of people brought into vogue for a while the short topical essay. But the natural, forthright style soon started soaring high at the hands of the Persian scribes until it became thoroughly

inflated and encumbered.

To this encumbrance the Christian scribes further added the embellishment of *saj'*, and the over-played art degenerated into tiresome gymnastics. There was, however, some expansion in the range of the epistlecum-essay writing, which opened up a welcome outlet for literary skill. Tracts on the rules of good conduct were very popular, some of which on Persian model were meant especially for kings, while others were addressed to all classes. Similarly, there was a plethora of manuals of instruction through which all men of consequence were eager to communicate their wisdom.

But the most important branch conducted merely for the sake of pleasure was "letters" addressed to fellow-scholars and patrons touching upon purely academic and literary problems. Pride and rivalry helped to impart zest to such a pursuit. The style was high-flown and ornate with the obtrusive aim of pedantry. A further development of this tradition of the literary epistle (*al-risalah*) was the *maqamah*, which represents perhaps the first attempt to invent a loose framework of picaresque romance for the display of one's literary knowledge and skill.

The idea must have been suggested by the presence of a real character in the Arabicized Persian society of the time – a witty and somewhat unscrupulous prodigy of letters, devoid of patronage from high-ups and loth to engage himself in any lucrative work, thus compelled to shift for himself by roving from town to town and "begging" by the public display of feats of improvisation on the interesting and instructive situations of life. The emphasis is, no doubt, on the exhibition of linguistic virtuosity but there is throughout a vein of witticism which is sometimes employed for parodying society, manners and peoples.

As this form came to be the dominant one in Arabic prose, a large variety of it depicting incidents and situations concerning particular classes such as the *'ulama'* and the lovers, was successfully attempted in every age. It has throughout remained a typically indigenous product, especially suited to the equipment and training of the Arabic scholar as alluded to above.

Development of the Story for Literary Theme

The significance of the *maqamah* lay in the Arabic scholar at last condescending to create out of imagination the framework of a story, however short and undeveloped, with a view to displaying his profuse but pent-up literary skill. For the newly released fancy Abu al-'Ala' al-Ma'rri borrowed the wings of the popular traditions relating to the Prophet's Ascension (*al-mi'raj*) to the heavens. His *Rislat al-Ghufran* is really a *maqamah* cycle under the overall covering of a *risalkah*. The story is no more than a frail show-case to display the author's store of knowledge, just a device to string together a series of expositions of problems and judgments relating to the poetry, literature, and grammar.

As the author was also a philosopher and a critical observer of beliefs and practices, he brought out the witticism characteristic of the *maqamah* for an audacious burlesque of contemporary state of learning

and society, which imparted a unique quality to the work. The state excelled only in pedantry and artificial beauty. Yet the review of the entire field of literature, beliefs, morals, and manners in the course of an imaginary flight remained the high watermark of the traditional Arabic scholarship.

Story for the Philosophical Theme

The philosophical romance of ibn Tufail (d. 580/1184) entitled *Hayy Bin Yaqzan* is a complete surprise in Arabic literature in more ways than one. Here for the first time we have the plot as the main concern of the author. Sufficient attention is also paid to characterization and setting. The style is sub-ordinated to the theme. It will be recalled that the general body of Muslim philosophers had been confronted with a two-fold problem: the capability of reason to attain to reality unaided by revelation, and the identity of reality notwithstanding the difference in the source and the categories of knowledge imparted by religion.

Soon intuition, the *tertius gaudens*, achieved a lasting victory over both. On the one hand, it established its claim to be the essence of religion and, on the other, it was recognized as the higher form of philosophy. The importance of the latter development, which was by far the greater victory, has not often been fully appreciated. It was a momentous step indeed to accept intuition as part of a man's natural equipment, cognate with reason, for the "realization" of truth. Anyway, it was for the purpose of explaining all these points together that the philosophers conjured up the vision of a Solitary Man, cut off from all knowledge of religion yet attaining to a vision of God through the proper use and development of his faculties alone.

Historical Writing

The Arabic historian was solely concerned with the preservation of authentic records. He would not digest the facts and attempt at their reconstruction and interpretation of the reader. The merit of a historian like al-Tabri (d. 310/922 – 23) lay only in the extent and variety of his information, his own personality could be discerned only in the indication here and there and a preference for one of the several versions of a particular event. This self-imposed restraint on the part of the historian, like the similar scruples of the *adab* producer, betokened only high devotion to truth nurtured by the traditions of religious sciences.

As a matter of fact, it proved to be a valuable asset in eliminating, so to say, the middlemen and enabling all posterity to get a purely objective view of the past. Even when the annalistic framework was not strictly adhered to and the method of topical historiography was initiated by al-Mus'udi (d. 345/956 – 57) the style continued to be dominated by reporting. However, this deliberate suppression of the personal element contributed to the lack of any prose for historical writing. Such development had to wait until the beginning of the eighth/14th century when ibn al-Tiqtaqa produced his book *al-Fakhri*.

Keeping in view the fact of its being an innovation, the success achieved was remarkable. A lucid and fluent yet brilliant style is applied to carefully selected facts combined with appropriate comments. But

again, this admirable example was not sufficiently followed up. Rather the main development from which ibn al–Taqtaqa revolted consciously, had already proceeded far on the lines of the transference and application of the epistolary style – grand and verbose, as already noted – to historiography. It was fortunate indeed that this style was carried to palpable absurdity quite early by al–'Utbi (d. 427/1035 – 36).

It was decisively rejected by the Arab taste only to find favourable development in Persian. Court patronage of the historians also brought in the need for flattery and exaggeration, but it must be said in fairness that historian did not absolve himself totally of regard for truth in the manner of poets. On the whole, the style of the official amanuenses and the Court historians of the late 'Abbasid period belongs to the same *genre*.

The best examples of Arabic historical prose, both in regard to form and content, are the private memoirs of personal experiences of war and peace like the *Kitab al–I'tibar* of 'Uthman ibn Munqidh (d. 584/1188 – 89), and the accounts of travels. In the latter class of works one finds not only observation and effective narration but also the author's own appraisal of personalities and events in the light of history and contemporary society. Generally, the style is simple and natural and even where art is displayed, as in the case of ibn Jubar (d. 614/1217 – 18), it is not over–played at the expense of the content. Al–Ghaz□l□'s *al–Munqidh min al–Dalal* forms a class by itself – an auto–biographical account of mental conflict and spiritual quest written with such simplicity and naturalness as defy all art.

Influence on the West

Looking in retrospect over the entire field of Arabic prose and poetry, the general reader will not fail to be struck particularly with a few features which stand out prominently. First, there is the perfect symmetry, so characteristic of all Muslim art, the unfaltering rhythm, and the regular rhyme which at once give the general impression of order, system, and exquisiteness in the construction of the verse. Secondly, there is the entire scheme of romantic love as embodied in the tradition of the *ghazal*. It is not fully appreciated, especially among the Muslims who take it as a matter of course, how much the Islamic outlook on woman and sex relationship has to do with the sentimental romantic love.

Love as an art can only flourish in a society where the company of woman is sublimated into a virtue. A further condition for the growth of romanticism is the recognition of certain ethical rules for courtship, a certain idealization of restraint. Such restraint is only symbolic of awe for the independent will of a separate individuality (best exemplified in the economic rights of women in Islam) coupled with a tenderly appreciation – so different from lustful exploitation – of the frailty and delicacy of the feminine constitutional and sentimental make–up.

In the blind fervour of the extremist revolt against the denial of human rights to women in the West, the last basis of all chivalry and romance is much liable to be forgotten. Anyway, it was these two features – the exquisite form and the romantic content – of the Andalusian poetry which impressed the troubadours

of Provence so deeply. Needless to say that lyrical poetry of romantic love had a special development in Spain so as to become unique even in Arabic. In the same way the strophic verse blossomed in Spain as nowhere else. The tradition, however, goes back to the Umayyad *ghazal* with Islam intervening between it and the frank hedonism of the *jahiliyyah*.

Turning to prose, one finds Arabic offering, at its best, aphorisms, apologues, popular fables characterized by the spirit of adventure, and picaresque romance (*maqamah*). Actually, these were the very curiosities which achieved a ready success in medieval Europe through oral transmission and book translation. It was not very appropriate indeed that works like the *Arabian Nights*, which were meant only for recital in the marketplace, were read in book form in Europe.

This was bound to produce certain revulsion at a later period when they were to be devoid of the finer elements of literary art. Anyhow, "orientalism" – a touch of the fabulous, the wonderful, and the exotic – entered the thought processes of the European writers and poets. Still more important is the percolation of some of the higher devices resting on characteristically Islamic traditions like the *mi'raj* into the *Divina Commodiai* and the Solitary Man into *Robinson Crusoe*.

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1. Note the definition by ibn Qutaibah of a born poet as "the one who indicates to you the end of a verse in the very beginning of it, and the qafiyah in the fatihah (opening word) itself." Al-Shi'r w-al-Shu'ara', Cairo, 1367/1947, 1, p. 36.
2. It was perhaps an account of this special knowledge that he was called sha'ir, i.e. the "kenner," who knew better than others. There is, however, another view which traces the word to its Hebrew counter-part meaning "chanting" and "singing." Anyhow, the poet only knew and sang whereas the authority for taking decisions and giving judgments rested with another class known as the hukkam. Fajr al-Islam, p. 56.
3. The schooling of the impulses through hudud Allah (limits of the Sacred Law) pinpoints the difference between the jaahiliyyah and Islam.
4. Consistently with the Arab habit of ascribing long, gradual developments to particular persons, the innovation of the qasidah is said to have originated with Muhalhil b. Rabi'ah (c. 500 A.D.), whose very name bears testimony to his contribution. Al-Jumahi (Tabaqat, Cairo, 1952, p. 24) dates it from the time of 'Abd al-Muttalib and Hashim b. 'Abd Manaf.
5. There are touching stories of lovers who would intercede with the hunters to have the gazelles set free because of the resemblance of their eyes to the eyes of the beloved; cf. Raghbat al-'Amil, 7, p. 39.
6. The stock phrase attributed in the Qur'an to the pagans in defence of their ways that "they found their forefathers practising them" faithfully exposes their lack of thought and reasoning.
7. Vide al-Ma'arri, risalat al-Ghufran, ed. Bint al-Shati, p. 246.
8. Al-Jumahi, op. cit., p. 11.
9. Ibid., p. 197; see also p. 217 where the same reason is adduced for the meagreness of poetry in al-Ta'if and 'Uman.
10. Qur'an (26:224) et seq. There is an exception in favour of those who are devoted to righteous belief and good deeds.
11. The example of the Qur'an illustrates the principle of novelty in literary form. In order to achieve the paramount purpose of communication and effect, novelty must always be embedded in familiarity.

12. The verses of ibn al-Zib'ara are much more explicit on the subject of renunciation of the old and devotion to the new ideal, vide al-Jumahi, op. cit., pp. 202 – 03.
13. An excellent example of the change of values in this respect is provided by the hija' of al-Najashi which was taken by 'Umar to be a eulogy, vide ibn Qutaibah, op. cit., 1, p. 290.
14. Up until the days of 'Umar, Arabian music was nothing but intonation of voice in the manner of a camel-driver reciting his songs (vide al-Aghani, 8 p. 149, quoted in Fajr al-Islam, p. 120). This accounts most plausibly for the absence of reference in the Qur'an to music and dancing while the symbolization of wine is so common-place.
15. Vide al-Jahiz quoted in Duha al-Islam, 1, p. 15.
16. Ibn Khaldun, Maqaddimah, Chap., 6 (49).
17. Ibn Qutaibah, op. cit., 1, p. 451.
18. In all Islamic literature some of the best wine songs have been produced by those who never tasted it. After all, does an actor actually experience death before he successfully acts the scene on the stage? Even the poets who waxed eloquent on the properties of the saliva safeguarded the chastity of the lady-love by saying at the end that they knew of it just as one knew of the water in the cloud by the flash of lightning.
19. It is only an exuberance of popular fancy which has foisted with mujun of Abu Nuwas on the company of Harun al-Rashid. Ibn Khaldun has noted the incongruity of it with the restraint and dignity of the bearing of the great monarch.
20. Any exact parallel is to be observed in our own day: Is it not that wine-drinking, ballroom dancing, and cabaret shows are associated with the superiority of the cultural taste and the intellectual refinement of Western provenance?
21. It is not merely a sentimental reaction but a perfectly reasonable attitude that the liberties taken by Iqbal's "love in the presence of God be denied to one who talks of God from the atheistic viewpoint. A verse of Hafiz ridiculing formalism in religion will be appreciated by the Muslims, who would legitimately resent the same being quoted in the context of an anti-God movement. Also, significant are the words in which al-Mahdi interceded with his father, al-Mansur, on behalf of Muti' b. Iyas. He pleaded that Muti' was only a fasiq (libertine) and not a zindiq, i.e. not committed to over-throwing the existing order.
22. In our own time Iqbal succeeded eminently where Abu-'Ala' failed miserably. Iqbal's employment of the traditional language of the mystics, which sometimes misleads even great scholars to take him for a mystic, is a device to make his ideas appear beautiful. Such a popular and familiar literary medium is all the more essential when the ideas are novel and unfamiliar.
23. This is the "abuse of time" which is expressly prohibited by the Prophet. Only he would curse the stars who believe him to be a passive object under their blind inexorable influence. Islam, on the other hand, stands for man's active and dominant role in setting the pattern of life through the instrumentality of the process of time as ordained by God; cf. Iqbal, Asrar-i Khudi.
24. See the interesting treatise on elegant manners by al-Washsha' (Leiden, 1887).
25. Vide Risalat al-Ghufran, p. 183.

Chapter 51: Arabic Literature, Poetic and Prose Forms

A. Grammar

The intellectual activity of the early Muslims stemmed directly from their devotion of religion. The Arabs had throughout been sensitively proud of their language; contacts with foreigners were regarded by them

as derogatory to pure Arabism. However, before Islam any corruption of the dialect was but a social drawback; after Islam, any lapse from the norm inevitably led to distortion of the sacred text with dire consequences both in this as well as in the next world. Curiously enough, it was Islam itself which brought about the commingling of the Arabs with the non–Arabs on a vast and unprecedented scale.

In the very second decade of the Hijrah the Arabs were carried on the crest of a wave of military conquests across the bounds of their homeland to settle down in the neighbouring countries of Iraq, Persia, Syria, and Egypt. At the same time there was a large influx of aliens, mostly prisoners of war, into the principal towns – Mecca and Medina – of Arabia itself. Before long, there appeared for the first time in history a considerable and growing number of neophytes seeking initiation into Arab society with a conscious effort to learn, imbibe, and serve that new religious culture which was only couched in Arabic and had its prototype in Arab milieu.

Naturally enough, the inaptitude of these neophytes in the use of the Arabic tongue excited the laughter of the younger folk in Arab households, it also shocked the elders as it amounted to inadvertent profanity and distortion of the Qur'anic verses.[1] The corruptive effects on the new generation of the Arabs – the townsmen among them – were no less disconcerting; the daily usages marked a sharp decline from the Qur'anic idiom. Thus, there is little doubt that about the middle of the first century of the Hijrah the Muslims were squarely face to face with their foremost literary problem, viz, the need for the preservation of the Qur'an.

The Arabs needed reinforcing their own natural way of speech with a discipline of conscious effort; they were also eager, in keeping with the true spirit of Islam, to pass on to the myriads of non–Arabs, who daily swelled the ranks of the faithful, not only the religion and the practices of Islam but also the language as a key to a first–hand knowledge of its primary source or sources.[2] Actually, however, only a few of the Arabs concerned themselves with those branches of studies which involved the use of the method of *qiyas*, i.e. analogy and deduction.[3]

Such creative intellectual activity was notably flair of the non–Arab inhabitants of Iraq, which province occupied a unique position in the incipient literary life of Islam. It is worthwhile recalling that the province had been the cradle of ancient civilizations and the nursery of cultural currents from the Hellenes, including those relayed from the important academy of Jundi–Shapur; hence, the mental attitudes of its inhabitants bore the stamp of philosophical scientific discipline. Still more remarkable was the spirit motivating the political relationship of these "intellectuals" with their proud and unlettered masters, the Arabs, and their peculiar religious and cultural propensities towards Islam and the Arabic language.

In contrast with Syria and Egypt, it will be seen that the *'Ajmis* of Iraq were from the very beginning determined to assert their own individuality, albeit only within the pale of Islam and on the ground of Arabs' own devotion to the Arabic language. Even the Sh'ubiyyah movement, the outburst of an outraged sense of superiority of the Persians over the Arabs, involved no resilience from loyalty to the language of the Qur'an. It was a clear parallel to early Shi'ism, which was calculated to work out the

political ascendancy of the Persians but only under the supreme and authoritarian over–lordship of the House of the Arabian Prophet.

Basrah and Kufa, the two cantonments of the Arabs, provided ideal conditions for fruitful contact between the Arabs and the non–Arabs. Of particular importance were the proximity of the two towns to the northern Arabian desert, long regarded as the preserve of the linguistic norm, and the market–place of al–Mirbad – on the outskirts of Basrah – was no less a close–by rendezvous of the *A'rab* (Bedouin Arabs of the desert) and the *literati* until the former, becoming aware of the demand, themselves came to offer their linguistic materials to the *elite* of Iraq and western Persia.

According to the classical tradition, it was Abu al–Aswad (Zalim b. 'Amr) of al–Du'ali (or Dili), a poet, warrior, and teacher died (69/688 – 89) at the age of 85), who took the first step to stem the tide of growing laxity and error in the use of the Arabic tongue. He was an active partisan of 'Ali in politics and actually fought against Mu'awiyah at Siffin. It is, therefore, no surprise that he should take pride in claiming that the rudiments of Arabic grammar were confided to him by 'Ali. This assertion can safely be dismissed as only an instance of the too frequent attempt to trace all learning to 'Ali, the "Gateway of the City of Knowledge."

It is also true that Abu al–Aswad himself cannot be credited with having worked out the fundamentals of Arabic grammar as such.[4] But it is reasonably certain that he did institute something which, to later historians of the development of grammar, appeared to be the genesis of it. Let us examine what it was actually. Until the time with which we are concerned, the Arabic script, originally taken over from the Syriac–Nabataean writing, remained without a system of *i'rab*, i.e. vowel–marks. Nor was there any established practice as to the *i'jam*, i.e. diacritical marks, to distinguish letters of similar shape. Of course, there was no urgent need for either so long as the main dependence was on memory and writing was regarded as a mere casual help.[5]

In context of the new demands made by the change in the social pattern, the alert and acute mind of Abu al–Aswad realized the inadequacy of the written consonantal letter to evoke the correct unmarked vowel, which had ceased to come natural as of yore. He, therefore, must have been the first to conceive the idea of introducing some further aid to make the people "know and observe correct speech." It appears that at the first innovation was opened Ziyad b. Abihi, the Governor of Basrah, with whose sons Abu al–Aswad might have discussed it. After some time, however, all conceded that it was absolutely needed and Abu al–Aswad went forward to lay down the following system:

1. the vowel "a," the pronunciation of which needs a full upward opening (*fathah*) of the mouth, to be marked with a dot above the letter,

2. the vowel "i," the pronunciation of which needs a little downward movement (*kasrah*) of the mouth, to be marked with a dot below the letter,

3. the vowel "u," the pronunciation of which needs a rounded closing (*dammah*) of the lips, to be marked

with a dot in front of the letter.[6]

This system of dots is to be seen in one of the oldest copies of the Qur'an dated 77/696, now preserved in the National Library at Cairo. The text on parchment is in black, while the vowel dots are in red, in accordance with the usual practice. It has been noted that a similar system of dots was in use in the writing of Syriac, and, though Abu al-Aswad's contacts with the Syrians are not expressly alluded to, it stands more than probable that having realized the urgency he turned round and took the cue from his compatriots of the Syrian Christian Church.[7]

It is also possible, as some reports make out, that Abu al-Aswad went a step further to propound some broad distinctions in the main parts of a sentence such as the subject and the predicate. On the whole, however, his contribution was merely to focus attention on the usage of vowel endings as the distinctive characteristic of Arabic. Hence, observation of vowel endings was designated *al-'Arabiyyah*, i.e. the art of speech in the correct and characteristic Arab way. The use of vowel-endings itself was known as *al-i'rab*, i.e. rendering into the proper Arabic way.[8] The *al-'Arabiyyah* was undoubtedly an embryonic form of Arabic grammar.

The emphasis on *al-'Arabiyyah* grew in proportion to the need for saving the Qur'an from being consigned to antiquity. So far the method used was mere *talaqin*, i.e. putting the particulars in the mouth of the student. Only the necessary terms and signs for indicating the different vowels in speech and writing had been devised. As yet there was no *ta'lil* or reasoning on the basis of general principles governing the incidence of the *i'rab*. But certainly the *i'rab* was under intense and searching observation, from which it was not a far step to collecting a number of analogous examples and inducting from them some rules for general guidance.

This was the beginning of the discovery of the logical structure of the language which, in the words of Sarton, was as much a scientific discovery as, for example, the discovery of the anatomical structure of the human body. This scientific discovery, the *Nahw* proper, reached the proportions of a separate branch of study at Basrah with 'Abd Allah b. Abi Ishaq al-Hadrami (d. 117/736) and his student, Abu 'Amr 'Isa b. 'Umar al-Thaqafi (d. 149/767). Both the teacher and the student were non-Arab clients (the latter being the client of none other than Khalid b. al-Walid) who relished putting the Arabs to shame on the score of incorrect speech. They had a reputation for boldness in *'ilal w-al-qiyas*, i.e. induction of causes from an array of analogous examples.

Even in the first flush of discovery, they were so confident of the principles arrived at that they did not mind criticizing on their basis the ancient model poets such as al-Nabighah, not to speak of the contemporary al-Farazdaq. When the latter composed a vitriolic satire against his dogmatic critic, ibn Abi Ishaq would only retaliate by pointing out a grammatical mistake even in the satirical verse.[9] The student elaborated the method explicitly, as in discovering principles which held well generally and in listing the deviations as *lughat*, i.e. exceptional usages. And it was he who embodied the results in two books said to have been the first on the subject.

It must be noted that *al-lahn*, i.e. incorrect speech, which gave stimulus to the thought of Abu al-Aswad, had by the turn of the first/seventh century assumed alarming proportions. It had percolated to the ranks of the *elite* of the Court and the administration as well as the circles of the learned such as the traditionists and the jurists. But the deterioration, as far from inducing an attitude of toleration, gave rise to a strong reaction against what was regarded almost as a sin, and there was a determined effort not so much to preserve the purity of the Qur'anic text as to make the ordinary speech conform to the standards of its idiom.[10] It was at this very time that *al-Nahw*, the science of "the proper way of speech of the Arabs" (ibn Jinni), was fully recognized as an independent branch of study and the term *al-nahwi* became widespread in popular parlance.[11]

The Basrah School reached its perfection in the following age, which produced such giants as al-Khalil and Sibawaihi. Al-Khalil b. Ahmad, a truly versatile genius of Arab descent (al-Furhudi/al-Farahidi, al-Azdi), whose contribution alone would outweigh the achievement of the host of non-Arabs, was born in 100/718 – 19 and died sometime between 170/786 and 175/791. There can be no greater testimony to his powers or originality than the discovery of Arabic prosody without any previous pattern, taking his cue merely from the rhythmic beats of the smith's hammer.

No surprise that after benefiting from the teachings of 'Isa b. 'Umar, he should have been able to elaborate the framework of Arabic grammar, a framework within which *al-i'rab* could be explained and reasoned out. But al-Khalil cared neither for fame nor for material gain; it is said of him that he lived in a state of abject penury while his students made a fortune with the learning imbibed from him. It fell to the lot of his Persian student Sibawaihi,[12] who also had direct contact with 'Isa b. 'Umar, to complete the work of al-Khalil and to arrange and produce his findings in concrete book form.

Sibawaihi (Abu Bishr 'Amr b. 'Uthman b. Qanbar), a native of Shiraz who died at the young age of about 40 years in the last quarter of the second century of the Hijrah, really proved to be another genius for comprehensiveness, if not so much for originality. His *Kitab* has throughout the ages been regarded as the final word on Arabic grammar and has become proverbial for its unique position in the field. Those who followed Sibawaihi right down to the present time could only comment upon, remove obscurities, arrange and rearrange the materials furnished in the "Book" without adding much to it.

It has been a vexed question as to whether the main concepts of Arabic grammar are an indigenous growth or they are traceable to some external pattern. Modern scholars have stumbled upon casual resemblances such as those with the Indian *Praticakhyas*, but they offer no secure ground for any assumption of borrowing. It must be remembered that the Arabic grammar is concerned mainly with the *i'rab*, which is a peculiarity of the Arabic language and was actually realized and proudly asserted to be so by the early grammarians.

Hence, it is no less misleading to make much of the similarity between the division of a word in *"ism," "fi'l,"* and *"harf"* in Arabic and the analogous categories in Syriac or Greek. Obviously, the Arabic grammarians had to chalk out and proceed on their own lines and, in fact, they have given us a fair idea

of how they applied their efforts on the problems, which was peculiarly their own. As hinted earlier, they began by observing the various positions of the words in a sentence and the particular *i'rab* taken by them in those positions.[13] These rules went on developing in the direction of reducing further and further the number of exceptions which would not admit of their general application.

What helped the people of Iraq in this undertaking was a flair of *'ilal* and *qiyas*, which was exhibited in an equal measure in grammatical and literary studies as well as in *Fiqh* and jurisprudence.[14] This flair certainly bears the impress of Hellenism. Nevertheless, it remains a mere conjecture that the early Muslims took over anything specific from Greek sources in grammar, in the same way as it is a mere wishful thought that *Fiqh* is indebted to anything specific in the Roman Law.[15]

The cornerstone of Arabic grammar is the correlation of the *i'rab* of the different parts of a sentence based on the theory of an *'amil*, i.e., an efficient cause supposedly resident in one of the parts and governing the whole. The earliest trace of it is perhaps in the *Kitab al-'Awamil* of al-Khalil – a work known to us only by its title. But there is no reason to suppose that al-Khalil diverged in any way from the general line pursued thitherto by 'Isa b. 'Umar and others. Unless, therefore, this *'amil* theory is proved to have been formulated on a familiar pattern, the indebtedness of Arabic grammarians to any external source will remain highly problematic.

There is, however, yet another development of Arabic grammar which is clearly and directly traceable to Greek influence. The most notable and lasting effect of the assimilation of Greek logic and philosophy in the 'Abbasid period was a general tendency to remould into logically defined systems almost all the nascent branches of learning, which until then lacked a rigid order. So far as Arabic grammar is concerned, the development took place when a Mu'tazilite Mutakallim and a *nahwi* were combined in the person of Abu al-Hassan "Ali b. 'Isa al-Rummani (d. 384/994).

Actually, the process reached its culmination in al-Rummani so as to justify his being credited with that highly conventional logical reasoning which has since formed such a notable feature of Arabic grammar. This new development is amply borne out by a saying that out of the three contemporaries the words of al-Sirafi (Abu Sa'id al-Hassan b. 'Abd Allah) were thoroughly understood without a teacher, those of Abu 'Ali (al-Hassan b. Ahmad) al-Farisi were only partly so, whereas those of al-Rummani were not intelligible at all.[16] Even though Abu 'Ali al-Farisi, who, according to solve the above testimony, was himself partly affected by the innovation, is reputed to have commented that if *Nawh* be what was expounded by al-Rummani, then he had nothing to do with it, and *vice versa*.

Undoubtedly, al-Rummani, did not bring out a new system of grammar, he only applied the methods and the jargon of Aristotelian logic to the adumbration of those nebulous conceptions which, in the simple language of the old tradition as represented by al-Sirafi, were easily comprehended by the average student. There was a similar transformation in Arabic rhetorics, too. Further, it will be noted that by this time the Arabs had acquired some familiarity with Greek grammar, which warranted their indulging in a comparison of its merits with those of Arabic grammar. By the latter was considered to have already

possessed a separate entity with a different development.

While the general trend to Basrah was to go ahead with the formulation of general rules, there also developed a reaction against the scant attention paid to the angularities of actual usage, which, however, came to the fore only when Abu Ja'far (Muhammad b. Abi Sarra 'Ali) al-Ru'asiyy took it over as the basis of the rival school of Kufah founded by him in the latter half of the second/eighth century. The Kufans would assiduously collect such instances as violated the general rules of the Basrans and would treat them not as exceptions but as the basis of another general rule opposed to that of the Basrans.

This school achieved a meteoric rise in importance under the favour of the 'Abbasid caliphs. Two of its very influential representatives at the Court were: (a) al-Kisa'iyy (Abu al-Hassan 'Ali b. Hamzah), the Persian student of both al-Khalil and Abu Ja'far al-Ru'asiyy, who came to be regarded as the compeer of Imam Abu Yusuf under Harun al-Rashid, and (b) al-Farra' (Yahya b. Ziyad), the Dailamite, who was appointed tutor to al-Mamun's sons and was designated as *Amir al-Mu'minin* in the realm of *Al-Nuhw*.

Ultimately, however, Baghdad proved a veritable crucible for the gradual fusion of the two schools through inter-change. From the end of the third/ninth century onwards there flourished at the metropolis scholars who were free from prejudice for or against any particular town or tribe and were actuated by sheer academic interest and reasonableness.

Just one more development may be noted. Abu 'Ali al-Farisi, who has been mentioned above, had an illustrious student called 'Uthman b. Jinni (d. 296/1002),the son of a Greek slave, regarded as the last of the philosopher-grammarians. But ibn Jinni did not help in clothing the *'amil* theory with the armoury of logic; rather he submitted the *'amil* theory itself to the scrutiny of reason. The result was a scathing attack on the false notion that one particular word in a sentence governed the whole.

The hint dropped by ibn Jinni was picked up in far distant Spain by "ibn Madda'," the Zahrite Qadi of Cordova under the Muwahhids, who in his *al-Radd 'ala al-Nuhat* attempted something in grammar akin to al-Ghaz□l□'s *Tahafut* in philosophy. However, his attack, though not lacking in flashes of brilliance, remained a cry in wilderness as no alternative formulation of Arabic grammar on a basis other than the *'amil* theory was ever achieved, far less accepted.

To sum up, the inspiration for Arabic grammar came from religion; the need for it was created by the commingling within Islam of the Arabs and the non-Arabs. The methods of observation and induction yielded the discovery of the main body of "laws" in the working of language. The only snag was that the laws of language are not so uniform and immutable as the laws of nature. The older school of grammarians at Rasrah suffered from an immature pedantry which was aggravated by the desire of the non-Arabs among them to outdo the Arabs.

At a very early time 'Isa b. 'Umar had the temerity to boast in the presence of the Arab philologist, Abu 'Amr b. al-'Ala', that he ('Isa b. 'Umar) was a greater master of Arabic than Ma'add b. 'Adnan, the

progenitor of the Arabs! And both ‘Isa b. ‘Umar and Abu ‘Amr b. al’Ala’ exhibited a tendency to prefer such readings of the Qur’an as, in their opinion, were more a consonance with the general rule of grammar.[17] This authoritarianism on the part of the “wisdom of the school seeking to improve upon the facts” (Noldeke) was checked by the rise of the rival school of Kufah. Rather, the latter erred on the other extreme. It is said of al-Kisa’iyy that in his avid search for the unusual and the exceptional he would not pause to test the reliability of his sources.

Nonetheless, a relieving feature of the situation was that dogmatism always felt compelled to bow before actual usage, as typically exemplified in the contest between Sibawaihi and al-Kasa’iyy at the Court of Harun al-Rashid.[18] Ultimately, Baghdad provided the necessary atmosphere for the gradual shedding of prejudices and the engagement of all in a joint effort to erect a common edifice large enough to accommodate the conflicting viewpoints on most, if not all, of the established usage. The final success was vitiated by sporadic attempts as putting possible constructions on actual usage.

This tendency was decried at the very start by ‘Isa b. ‘Umar,[19] but it reappeared prominently later on and is justly parodied by Abu al-‘Ala’ al-Ma‘arri in his *Risalat al-Ghufran*.[20] The instruments of Aristotelian logic helped to hammer out the crudities of enunciation and adumbration. Finally, there was an attempt to rebuild the entire system on a simpler basis other than the *‘amil* theory, which, however, did not fructify. On the whole, the Arabic grammar remains a magnificent achievement – religious in spirit, linguistic in material, scientific in methods, and logical in form – which has been eminently successful in preserving the Qur’an and keeping its idiom unchanged yet alive throughout the centuries.

B. Lexicography

The preservation of the Qur’an involved the institution of such disciplines as would effectively safeguard not only the authentic rendering of the text but also the warranted understanding of its import against error, corruption, or ignorance overtaking those for whom it was “plain Arabic” at the time. The former purpose was achieved through *al-‘Arabiyyah*, which later on developed into a full-fledged science under the name of *al-Nahw*. The next concern was naturally the meaning conveyed by the text. In the beginning, there could have been little difficulty about it in the same way as about the vocalization of the text which was just a matter of natural aptitude.[21]

However, with the lapse of time and the changes in the social pattern, uncertainties began to creep in around words and expressions which had gradually assumed an air of rarity. Obviously, the way to clearing such doubts and uncertainties was to search for the occurrence of those words and expressions in the speech of the Arabs elsewhere.[22] In doing so, care had to be taken that the citations should faithfully reflect the idiom of the time of the Prophet during which the Qur’an was revealed. That is to say, either the citations should belong to the period contemporary with, or immediately antecedent to, the Qur’an or be called from the current usage of those whose social pattern had continued unchanged and who, therefore, could be relied upon to have preserved the idiom from the time uncorrupted and

untainted by the extraneous influences.

Consequently, a zealous hunt was afoot to collect and preserve as much of pre-Islamic poetry, proverbs, and orations as could be salvaged from the memories of the people together with the current idiom of the *A'rab*, i.e. the people of the desert impervious to influences from outside. The method of collection was identical with that of the collection of the Hadith.

The end of the first/seventh century witnessed the rise of a band of scholars especially noted for their profundity in the field of *al-lughah* (Arabic usage) with its ancillary branches of *al-sh'r* (poetry), *al-akhbar* (historical annals), *al-ayyam* (accounts of tribal wars, and *al-ansab* (genealogies). The most prominent name among these scholars is that of Abu 'Amar b. al-'Ala (70/689 – 154/770), an Arab nobleman of Basrah and an associate of 'Isa b. 'Umar. His collection of Arabic philology, when piled up, touched the ceiling of his asceticism towards the end of his life. Yet he continued to be the primary source of knowledge for the next generation.

While the process of collecting the vocabulary and the illustrations of its diverse uses was still going on, the genius of al-Khalil, whom we have mentioned before, burst with the idea of arranging and fitting the vocabulary into the orderly scheme of a lexicon. Actually, al-Khalil is known as the author of the first Arabic lexicon called the *Kitab al-'Ain*, but the authorship is a bit disputed. This much, however, is certain that even if the actual compilation was not exclusively or partially the work of al-Khalil, the idea of a lexicon and the scheme thereof were first conceived by him. Let us now examine what the scheme is like.

Al-Khalil starts with (a) reducing all words to their roots, i.e., the radical letters (*al-usul*) which form an immutable kernel in contra-distinction to those that are added (*al-zawa'id*) in the course of derivation and inflexion. Next (b) he classifies the roots according to the number of letters comprised in them: 2, 3, 4, and 5. Each class of words is then arranged in a separate part and even within each class special treatment under distinctive heading is resorted to in the case of words containing one or more of the vowels, double letters, or a *hamazah*.

The above framework is in line with al-Khalil's attempt at a computation of Arabic vocabulary, which is a further proof of his originality. The quest he pursued on the same structural basis in a mathematical way. By multiplying the 28 letters of the alphabet by 27 (28 minus one, to drop out double letters) he got 756 forms of the bilateral (there being no uni-literals in Arabic). Dividing this number by two, he had 378 combinations irrespective of the order of the two letters. Taking these bi-literal forms as one unit and adding a third letter to them, he worked out the number of tri-literal forms and so on.

It will be observed that the above method yielded the theoretically possible combinations of letters, all of which are not in actual use (*musta'mal*). Consequently, al-Khalil had to mention each and every possible combination and indicate if any specific forms were unused (*muhmal*). A further peculiarity, which made reference so difficult wand cumbersome, was that in the arrangement of the lexicon he concerned

himself merely with combination of letters and mentioned all the forms yielded by a change of order of the letters under one and the same heading. For example, under MY one will find both MY and its reverse (*maqlub*) YM.

Within the above framework, intrinsically scientific but practically unhandy, the order was according to the opening letter of the alphabet in the words. But the order of the alphabet observed by al-Khalil was not free from novelty; the grouping was according to the part of the mouth, from down the throat right to the lips, which produced sound. This novelty has been aptly noted and the similarity between it and the practice of the Sanskrit lexicographers has aroused a good deal of speculation. There is no doubt that the present day arrangement, based on grouping of words according to the shape of the letters in writing, was the one in common use even at that distant date, though the Arabs were also familiar with the order according to the *abjad* system, which was originally taken over from the Syriac (and Hebrew) along with the art of writing.[23]

The phonetic-physiological system of al-Khalil was neither common at the time not did it achieve popularity afterwards. But any significance which its similarity to that of Sanskrit might suggest is whittled down by due consideration of the fact that in all probability it developed indigenously out of the practice of the recitation of the Qur'an. With the emphasis on recitation it was but natural the phonetics should receive special attention and that there be a grouping of letters on that basis. Actually, evidence does not want that the linguists did engage themselves in such a study; there were some differences too between the Basrans and the Kufans as to the order of the alphabet on the basis of phonetics.[24] Moreover, al-Khalil also paid some regard to the frequency of the letters in use. Otherwise, *'ain* would not have come first in order.[25]

No doubt, the general lexicon of al-Khalil represented an idea much in advance of his time. For the following century or so no one dared imitate, far less improve upon, his scheme. In the meantime, however, much valuable work was done in the form of small tracts comprising words, synonyms, and cognates with their fine shades of meaning grouped around particular subjects. Typical of such subjects are: *al-ibil* (the camel), *al-matar* (the rain), *al-silah* (the weapons), and the like. Similarly, special features of the Arabic usage were also singled out for monographic treatment: (a) *al-muthallathat*, (b) *al-maqsur w-al-mamdud* (c) *al-itba' w-al-muzawajah*, (d) *al-ajnas*, and (e) *al-nawadir*.

Some philologists wrote running commentaries (concerned merely with the meaning of selected words and phrases supported with illustrations from other sources) on the Qur'an and the sayings of the Prophet under such captions as *Gharib al-Qur'an, Gharib al-Hadith, Majaz al-Qur'an, Ma'ani al-Qur'an*, etc.

1. Al-Asma'i (Abu Sa'id 'Abd al-Malik b. Quraib), an Arab of Basrah, was born in 122/739 or 123/740 and died in about 217/832. He amused Harun al-Rashid with his stock of interesting anecdotes about the life of the *A'rab*.

2. Abu Zaid (Sa'id b. Aus) al-Ansari was another Arab of the Basrah who reached Baghdad during the time of al-Mehdi and died about 215/830, then over 90 years of age. He was not inhibited by partisanship and eagerly learned from al-Mufaddal and other Kufans. By common agreement, he is regarded as thoroughly trustworthy, though his pedantry is often a source of amusement.

3. Abu 'Ubaidah Ma'mar b. al-Muthanna, *a maula*, said to have been of Persian Jewish descent, was born in 110/728 at Basrah where he spent most of his life. He was patronized by the Baramikah and was summoned to Baghdad by Harun al-Rashid to read his works to him. While rendering yeoman service to the Arabic philological studies, he collected the *mathalib* or the vices of the Arab tribes and caused such offence to tribal pride that at his death nobody attended his funeral.

4. Ibn al-A'rabi (Abu 'Abd Allah Muhammad b. Ziyad) was the son of a Sindian slave and the foster-child of the famous Kufan philologist, al-Mufaddal al-Dabbi. His prodigious memory was a storehouse of Arabic philology and folklore. Remarkably enough, he relied on his own independent sources and questioned not without success the authority of al-Asma'i and Abu 'Ubaidah. He died about 231/845.

The special treatises referred to above naturally swelled to a considerable extent the volume of material which lay ready at hand for incorporation in a general lexicon. Another such lexicon was produced, rather dictated mostly from memory, by ibn Duraid (Abu Bakr Muhammad b. al-Hassan, born at Basrah in 223/837 and died 321/933) who enjoyed the patronage of the Mikalids of Fars. Though ibn Duraid claims that his work is much easier for reference than that of Khalil, the fact is that there is little improvement so far as the scheme, particularly the break-up of the vocabulary into structural categories, is concerned.

Even the irksome device which jumbles up all the orders, forward and reverse, of a combination of letters under one and the same heading, continues to be there. Only the phonetic order of the alphabet is discarded. Much of the confusion was caused by the nebulous state in which *al-tasrif* (etymology) happened to be at that time. There was so far no clarity as to the roots of words, particularly those containing a vowel, a double consonant, or a *hamazah*. Similarly, lack of clarity as to the distinction between *al-usul* and *al-zawa'id* caused the different categories to be mixed up. As a matter of fact, it was this uncertainty which made it expedient for ibn Duraid to insert a miscellany here and there, apart from the *nawadir* or peculiar usages and expressions listed under appropriate captions at the end.

There is indeed one important point of difference which is indicated by the very name, *Jamharat al-Lughah*. Ibn Durain included in it only the familiar and the useful and eschewed the obsolete and the discordant. This was the beginning of a process of subjecting to criticism and sifting out the useful and the dependable from the large mass of material left behind by the early scholars, who were concerned with collecting and recording whatever they came across. At the time when the mistakes were being corrected, an attempt was also made to supply the omissions in the works of the early authors.

These, in short, are the new features noticeable in the lexicographical productions of the fourth/tenth

century. Particularly notable in this respect is the *Tahdhib*, whose author, Abu Mansur Muhammad b. Ahmad al–Azhari (d. 370/980), a student of ibn Duraid, was urged to wanderlust in the desert for the collection of *al–lughat*. Incidentally, he fell captive into the hands of a Bedouin tribe; this provided him with desired opportunity. Equally important is *al–Muhit* of al–Sahib b. ‘Abbad, who died in 385/995.

The culmination of the critical activity of the fourth/tenth century aiming at authenticity and comprehensiveness, was reached in the *Sihah* of al–Jauhari, Abu Nasr Isma‘il b. Hammad (died about 398/1007), a native of Farab who settled down at Nishapur. The very name *Sihah* reminds one of the *Sihah* of al–Bukhari. It has already been hinted at that the method of collecting *al–lughat* was essentially the same as the one applied to the collection of the traditions, only a higher degree of stringency was observed in the case of the latter than the of the former.

This aptly illustrated by the example of al–Asma‘i who is held to be trustworthy in regard to hadith, but he risks conjectures in matters pertaining to the *lughat* and even embellishes anecdotes for the sake of amusement.[26] Anyway, it is worthwhile to note that even the nomenclature of the hadith such as the *mutawatir* and the *ahad* was applied to the *lughat* and the degree of reliability of any particular usage determined accordingly. In the beginning it was not uncommon even to mention the *isnadi* or the chain of narrators and to discuss the personal character and reputation of the transmitters.[27]

Thus, a compendium of the *Sahih* was sought to be arrived at in the field of *lughat* parallel to a similar, though much more scrupulously worked out, effort in the field of religious tradition.[28] It has, however, to be noticed that the *Sihah* suffered grievously from an unfortunate circumstance: the author was overtaken by a fit of melancholy which rendered him incapable of revising the manuscript. Further, due to the absence of any authentic copy of the text, a good of corruption also set in. All this necessitated a re–examination of the work in glosses and commentaries by later writers.

The work of al–Jauhari was still more remarkable in another way. In it the entire vocabulary was integrated (instead of being split up into structural categories) and arranged in alphabetical order with the first reference to the last letter and a second reference to its combination with the first. This new scheme at once became popular and was highly appreciated as particularly suited to a language in which the endings of the words and a unique importance for the purposes of rhyme (*qafiyah* and *saj‘*). Apart from the merits of this integrated scheme, the development and standardization of *al–tasrif* (etymology) at the hands of al–Mazini (Abu ‘Uthman Bakr b. Muhammad, d., 249/863), ibn Jinni, and al–Rummani during the course of the fourth/tenth century removed a good deal of the confusion which marred the works of al–Khalil and ibn Duraid.

We have now reached a time when the Arabic vocabulary was supposed to have been exhaustively collected and the meanings of words established with reasonable certainty. Henceforth, efforts were directed at collecting the material scattered in the previous works either (a) in the form of large comprehensive dictionaries or (b) in concise handy volumes designed for the ordinary student. Naturally, the latter often dispensed with illustrations and citations. The most important works of the former

category are:

1. *Al-Muhkam* by the blind Spanish scholar, ibn Sidah (Abu al-Hassan ‘Ali b. Ahmad?, d. 460/1068), was held in great esteem for comprehensiveness and absolute reliability. But perhaps the author did not like innovations; hence, he went back to the earliest model of al-Khalil for its arrangement.

2. *Al-‘Ubab* (incomplete) was composed by Radi al-Din Hassan al-Saghani, born in Lahore in 570/1174. He settled in Baghdad where he dedicated his work to ibn al-‘Alqami, the minister of al-Musta‘sim, whence he was sent out twice as ambassador of the ‘Abbasid Caliph to the court of Iltutmish at Delhi.

3. The *Lasan al-‘Arab* was compiled by ibn Mukarram/ibn Manzur (Jamal al-Din Muhammad), who was born in 690/1291 and died at Cairo in 771/1369. It is expressly based on the works of ibn Duraid, al-Azhari, al-Jauhari, and ibn Sidah.

Of the latter category, the work which achieved a high degree of popularity in the *Qamas* of Majd al-Din al-Firuzabadi (Muhammad b. Ya‘qub) who died in 816/1413. It draws upon *al-Muhkam* and *al-‘Ubab*.

Yet another work which deserves special mention is the *Asas al-Balaghah* of the well-known Mu‘tazilite al-Zamakhshari (Abu al-Qasim Jar Allah Mahmud b. ‘Umar, born 467/1074 and died 538/1143). The author was a native of Khwarizm who spent a long time in Mecca and Baghdad. He realized that the mere recording of meanings was an insufficient guide to the practical use of words. He, therefore, would give the occasions and the contexts in which the words were employed. What is still more remarkable is the arrangement of the *Asas*, which is in the alphabetical order with reference to the first (and the second and so forth) letter of a word. That is to say, its arrangement is exactly the same as has come into vogue in modern times since the impact of Western literary influences.

It is interesting to note that the early trend towards compiling treatises dealing with the words grouped around particular subjects did not die with the appearance of the general lexicons; it had an uninterrupted development on parallel lines. The greatest work of this kind is *al-Mukhassas*, the vocabulary is grouped under the subject headings, e.g., the hair, the eye, etc, which are classified into “books” such as that on “human body.” Even if the position of *al’Muhkam* is not wholly unsurpassed, that of *al-Mukhassas* is definitely so.

Once the framework of a general lexicon was fixed, the running commentaries on the rare and difficult words in the Qur’an and/or the Hadith were also brought under that form.[29] Similarly, no time was lost in extending the facility and the benefits of a general dictionary to the other specialized branches such as zoology, botany, biography, geography, bibliography, and finally the encyclopaedias (*al-mausu‘at*). It may be observed in this connection that interest in language and literature, which the scheme of a lexicon was originally designed to sub-serve, seldom disappeared in any of the works, however specialized and limited the scope of their treatment.

It would, for example be really odd to conceive of a zoologist or a geographer who was not familiar with

the references in the Qur'an and the hadith or who would be unable to recall poetry, proverbs, and pith sayings concerning animals or towns. This all-pervading interest in humanities is perhaps the most valuable asset of Islamic culture.

In conclusion, it will be recalled that the early philologists were fully conscious of the sanctity of their tasks; they showed themselves to be scrupulous in method and honest in purpose. But the scope of the linguistic studies was bound in the course of time to extend beyond that was strictly relevant to the Qur'an and the Hadith. As the bounds of the sacred faded into those of the profane, the common failings of vanity, mere guess or conjecture or even unguarded reliance on genuine misunderstandings contributed to the interpolation of the spurious.

Also, as these studies came to be held in high esteem and patronized with abundant monetary gifts, the veterans in the field were sometimes tempted to window-dress faked rarities in their shop. But the probe into their personal weaknesses, so characteristic of Islamic religious and literary tradition, and the severe tests subsequently applied to their statements served to a large extent to clear the chaff from the grain. On the same way it is impossible to claim that the entire vocabulary and the usage were exhausted, yet there is no gainsaying the fact that an enormous part of them was actually encompassed.

The charge that the Arabic philologists concerned themselves too exclusively with the idiom of the Qur'an and showed no interest in contemporary deviations from the same, tantamount to questioning their objective or purpose, which has been steadily confirmed throughout the ages. In regard to the scheme and the arrangement of a lexicon, the early pioneers proceeded on the basis of a scientific etymological analysis of the structure of the vocabulary. Practical convenience was achieved later in the superbly original plan of al-Jauhari, which remains the one especially suited to the genius of the language. Even the model which has become so popular in modern time is traceable to al-Zamakhshari.

Bibliography

Al-Suyuti, *al-Muzhir*; Yaqut, *Mu'jam al-Udaba'*; ibn Khallikan, *Wafayat al-A'yan*; ibn Kahldun, *Muqaddimah*; Hajj Khalifah, *Kashf al-Zunun*; Jurji Zaidan, *Tarikh al-Adab al-'Arabiyyah*; Ahmad Amin, *Duha al-Islam*, Part 2, Chap. 6; *Zuhr al-Islam*, Part 2, Chaps Three and Four.

1. This is amply borne out by the different versions of what prompted Abu al-Aswad al-Du'ali to turn to grammar.
2. It is noteworthy that Abu al-Aswad al-Du'ali, who showed himself genuinely anxious to help the non-Arabs learn Arabic and Islam, did so in spite of his jealousy of their prosperity and influence. There was not the slightest trace of any tendency among the Arabs to sit Brahman-like over the treasures of religious knowledge.
3. This applies equally to grammar and to al-ra'i in the realm of Fiqh.
4. Encyclopaedia of Islam, "Abu al-Aswad."
5. In the Islamic literary tradition, the written book long continued to serve merely as an aide memoire – a copy of what was preserved in memory and not vice versa.
6. It will be remarked that the other synonyms such as nasb, jarr, and raf' also refer to the same varied movement of the mouth. Closely parallel to the Arabic terms are the Persian equivalents: zir, zabar, and pish.
7. The Syrian Christians of the west had another Greek alphabet (five altogether: Y, E, H, O, A), instead of the dots, were

used as vowel marks. At some later date, not exactly ascertained, the Arabs also replaced the dots with letters of their own alphabet albeit in an abbreviated form: ے from ـٖ, ٖ from ى (somewhat doubtful), and و from ـو. Obviously, the change must have been necessitated by the use of dots for diacritical marks along with their use for vowel marks. The diacritical marks are said to have been brought into somewhat systematic use at the behest of al-Hajjaj b. Yusuf, the Governor of Iraq, by Nasr b. ‘Asim (d. 89/708), who, remarkably enough, is also reckoned as one of the founders of Arabic grammar. For some time the two kinds of dots were distinguished by the different colours of the ink. The replacement of the vowel dots with abbreviations of ى ,ا, and و is sometimes ascribed to al-Khalil b. Ahmad, which is supported by the title Kitab al-Naqi w-al-Shakl among his works.

8. Al-Syuti, al-Ashbah w-al-Nazash’ir, Hyderabad, 1359/1940, 1, p. 76.

9. Al-Jumahi, Tabaqat, Dar al-Ma‘arif, Cairo, 1952, pp. 16 – 17.

10. J. Fuck, al-‘Arabiyyah (Arabic translation), Cairo, 1951, pp. 26 ,65, 74.

11. Ibid., p. 30.

12. The reading “Sibuyah” is not supported by comparison with “Niftawaihi,” which the latter is in no doubt because of its occurrence in the rhyme of a verse. Vide ibn Khallikan, Wafayat, “Ibrahim b. Muhammad b. ‘Arafah.”

13. Cf. Fuck, op. cit., pp. 11 – 12.

14. What distinguished the Fiqh of Abu Hanifah was exactly the same: the probing into the “efficient cause” (‘illah) governing a number of given instances and then applying the same to unforeseen circumstances. The people of the Hijaz were extremely chary of such reasoning and it is no mere chance that they came to be notorious for their ignorance of grammar. It is remarkable that the opponents of Abu Hanifah, who wanted to run down his school of Fiqh, thought it necessary to make fun of the application of his methods of grammar. Cf., Fuck, op. cit., p. 65.

15. M. Hamidullah, “Influence of the Roman Law on Muslim Law” – a paper read before the All India Oriental Conference, December 1941.

16. Yaqut, Mu‘jam al-Udabi’, “‘Ali b. ‘Isa.”

17. It must be pointed out that it was merely a choice from among the various current readings; there was no attempt to “correct” the Qur’an in line with usage elsewhere. As pointed out by Wolfensen, it is an entirely wrong and unscientific approach on the part of some Western scholars to judge and criticize the Qur’an on the basis of pre-Islamic poetry. Apart from any religious sentiment, the Qur’an is the oldest and most reliable book. Other sources, though relating to anterior times, are posterior to it in point of actual compilation. Turikh al-Lughat al-Simiyyah, Cairo, 1926, pp. 169 et seq.

18. The reference is to what is known as “al-Mas’alah al-Zunburiyaah.” When Sibawaihi challenged al-Kisa’iyy on a point of grammar, the matter had to be refereed for decision to the Arabs. It is alleged that the Arabs were bribed to save the face of the royal tutor. The incident affected Sibawaihi so deeply that perhaps it caused his death pre-maturely.

19. Once when al-Kisa’iyy began giving the various grammatically correct readings of a particular phrase, ‘Isa b. ‘Umar rebuked him saying, “I want the actual way in which it is spoken by the Arabs,” Yaqut, op. cit., “‘Isa b. ‘Umar,” last paragraph. This tendency is to be compared with the hiyat – permissible tricks for evading the Law – in which some of the legists exhibited their acumen.

20. Al-Ma‘arri contrives to bring the grammarians and the poets in the heaven together when the latter protests at the former’s purely speculative interpretation of verses, e.g. p. 152 of the Risalah, ed. Bing al-Shati, Cairo.

21. In the words of Abu ‘Ubaidah introducing his Majaz al-Qur’an, “The Qur’an was revealed in clear Arabic language and those who heard it recited by the Prophet had no need of asking for its meaning...”

22. Cf. the saying attributed to ibn ‘Abbas, “When you be in doubt about any rare expression of the Qur’an, seek it in poetry.” Al-Suyuti, al-Muzhir, ed. Muhammad Ahmad Jad al-Maula and others, Cairo, 2, p. 302. It was in consideration of this that linguistic studies were regarded an obligation on a par with the obligation of prayer; cf. the verses (ibid). Ibn al-Qatta’ (al-Af‘al, Hyderabad, p. 3) went so far as to declare that anyone who decries the poetry of the Arabs is a sinner, and the one who runs down their language is an infidel (kafir).

23. It was in that original source that numerical values were assigned to the letters in that order, which is still adhered to in Arabic and other Islamic languages for purposes of chronograms. The assertion by later Arab philologists that abjad, hawwaz, etc., were the names of the inventors of the art of writing (al-Suyuti, op. cit., 2, p., 342) should be taken merely as a recollection of the old borrowing.

24. In Duraid, Jamharat al-Lughah, Hyderabad, cf. the Preface; cf. also al-Suyuti, op. cit., 1, p. 85.
25. Al-Suyuti, op. cit., 1, p. 90.
26. Cf. Ahamd Amin, Duha al-Islam, Cairo, 1952, 2, p. 301. Abu 'Ubaidah once ridiculed al-Asma'i's extreme cautiousness in the interpretation of the Qur'an by asking him whether he was sure of the meaning of al-khubz (bread). Cf. Yaqut, op, cit., "Ma'mar b. al-Muthana."
27. Al-Suyuti, op. cit., 1, pp. 118 et seq.
28. Just because the sciences of al-Hadith and al-lughah were recognized as twins, the highest academic title for the learned in either was the same, al-hafiz. Ibid., 2, p. 312.
29. Cf. Kashf al-Zunun 2, pp. 1204 – 06.

Chapter 52: Arabic Literature: Theories of Literary Criticism

In this account of the Arab contribution to the theories of literary criticism, the term "Arab" is used in a wide sense to include all the Arabic-speaking peoples, and the writers who used Arabic as their cultural medium, regardless of their racial origins.

Literary criticism is also broadly used to cover the whole field of literary appreciation, analysis, judgment, and comparison on the practical as well as the theoretical side. In this broad sense, *Balaghah* – which concerns itself with the study of the figures of speech and the stylistic aspects of literature in general – may be included under literary criticism, at least of the golden era of the early centuries of Hijrah, although, generally speaking the relation between the two is a matter of controversy.

The period covered by our treatment is likewise a fairly long one. It extends from the first/seventh century to the present time, and it corresponds to the Islamic era in the history of Arabs. For, although the Arabs achieved a high measure of perfection in their poetry two centuries before Islam, they did not reach the mature stage of theorizing about literature and its excellence until their minds were stirred and stimulated by the call of the new religion that arose in their midst. The fact that the miraculous sign of the religion of Islam came in the form of a "Clear Arabic Book" was destined to play an important role in Arabic language and literature, and consequently in the enrichment of Arabic literary criticism.

From early times, the Arabs were noted for their literary excellence. Poetry and oratory were the chosen forms of their artistic expression. As early as the second half of the sixth century A.D. when Arabic poetry was in its flowering period, some rudimentary forms of practical criticism could be observed. These were preserved by narrators, and later recorded by the early authors of the general studies of the Arabic language and literature. Some time before Islam there grew a number of marketplaces in the Hijaz where people of different tribes used to assemble for trade as well as for literary contests.

Names of recognized arbiters in those contests, such as that of al-Nabighah al-Thubyani, and their

judgments and criticisms were handed down to posterity by the *rawis* (transmitters). Naturally, very little explanation or justification was offered for such judgments, and very often one verse or one poem would be given as a ground for a high praise of a poet or for a comparison between two contestants in the marketplace. Some of the Prophet's Companions were known for their appreciation and sound judgment of pre-Islamic poetry. The Second Caliph 'Umar, for instance, was reported to hold that al-Nabighah was the greatest of the *Jahiliyyah* poets, and when he was asked the reason for this pronouncement, he answered, "Al-Nabighah never used redundant words, always avoided the uncouth in poetry, and never praised a person except for true merit.

By the end of the first/seventh century Arabic culture had spread outside Arabia in various directions with the spread of Islam. The mind of the new Muslim community was getting ready for a general intellectual awakening. The first to reap the benefit of those efforts were the religious fields on one side and the linguistic and literary on the other. Some scholars busied themselves with the explanation of the Qur'an and the understanding of its challenge of miraculous literary excellence. Others concentrated on tracing pure linguistic usages of the Arabic language and standardizing its grammar and syntax. Some directed their efforts to collecting pre-Islamic poetry and preserving it against loss.

The stage was now set for the beginning of a golden era in authorship which lasted several centuries. The critical problems raised by the Arab authors during this period can be summed up under the following main headings:

1. Literary aspect of the Qur'anic *i'jaz* (eloquence of discourse), and the extent to which literary could aid in discovering the secrets of that *i'jaz*.

2. Unique and sometimes obscure usages of the Qur'anic style.

3. Authenticity of literary texts transmitted by the *rawas* from pre-Islamic and early Islamic times.

4. Classification of the Arab poets, both Islamic and pre-Islamic.

5. Merits and demerits of the ancients and moderns in Arabic literature, and controversies between traditionalists and innovators.

6. Claims of meaning and expression to literary excellence.

7. Originality and imitation, and the phenomenon of plagiarism.

8. Nature of speech and articulation.

9. Meaning and essence of literary excellence, in structure, signification, effectiveness, and formal beauty.

10. Definition of the figures of speech.

11. Standards for the comparison between rival poets.

12. Norms of excellence in the chief poetical arts, such as panegyric, satire, and elegy.

13. Linguistic aspects of literary art.

These various problems of literary criticism were treated sometimes separately in a specialized fashion, and sometimes together in manuals or textbooks. The stylistic aspects in particular received a large share of the Arab authors' attention, and the researches around them grew until they formed a separate critical branch under the name of *Balaghah*. This was mainly the outcome of the Muslims pre-occupation with problems of the Qur'anic exegesis and *i'jaz*. Greek writings on rhetorics which were translated into Arabic as early as the third/ninth century also contributed to the growth of the science of *Balaghah*. In fact, that science dominated the Arabic critical field all through the later centuries of Islam from the seventh/13th to the 12th/18th.

The above enumeration of the different aspects of Arabic literary criticism will indicate the immensity of its wealth, and the difficulty of separating the Arab contribution in this field from their contribution to the development of Arabic language and literature in general. Many a general book on literature, such as the *Kitab al-Aghani* (Book of Songs) by Abu al-Faraj, would also claim a place among the books of literary criticism. The same can be said by the unique excellence of the Qur'an.

But the following survey of the main features of Arabic literary criticism we shall limit ourselves to singling out some of its outstanding landmarks and making a brief halt at each of them.

1. On the early grammarians, philologists, and literary critics of the first stage in Arabic authorship was ibn Sallam (d. 231/845). His book *Tabaqat al-Shu'ara'* is representative of the critical attainments of his period. Criticism, he maintains, needs long training and experience, and a critic must be an expert on his subject and well versed in the practice of his art. In other words, taste alone does not meet the requirements of criticism, and must be supplemented by experience and long study. He also adds that poetry, like the sciences and other arts, needs its own special technique and culture. He was aware of the established truth that abundance of practical study is worth more than all academic knowledge.

The second point stressed by ibn Sallam in his book is the importance of verifying the poetical texts and of ascertaining their origin. This is the first step in textual criticism and must be taken as its foundation. He directed a violent attack on the manner in which some Arab chroniclers accepted and narrated ancient poetry, and, therefore, questioned the authenticity of many of their texts.

The other important point in ibn Sallam's book is the division of poets into classes. With regard to time, poets were either Islamic or pre-Islamic. He tried to classify the poets of either era according to the abundance and excellence of their poetry. In his classification he also took into consideration the place of origin.

Although ibn Sallam failed to support judgments he passed on poets and poetry by analyzing the texts or describing the qualities of each particular poet, yet it must be admitted that Arabic criticism was taken by him a step further, especially as regards questions of verification and classification of poets. What we miss in his book, however, is criticism in the sense of a discerning study and a methodical approach. The first attempts at methods are not to be found earlier than the fourth/tenth century.

Al-Jahiz (d. 255/869), who was one of the leading Mu'tazilites and writers of the third/ninth century, tried in his book *al-Bayan w-al-Tabyin* to give a picture of criticism in pre-Islamic times and the first/seventh century. The criticism of that period, he maintained, was elementary, but, to a marked degree, sound and convincing, as it emanated from genuine practical literary taste. The critics of that period, according to him, managed to discover a number of defects in poetical craftsmanship and to give valuable practical advice to orators and poets.

Al-Jahiz's book was an echo of the intellectual life of the Arabs of the third/ninth century. At that time the mosques of Kufah and Basrah were not only places for worship and administration of justice, but also schools for the teaching of language, grammar, Hadith, and jurisprudence, as well as platforms for narrators to relate to the assembled audiences the story of the Prophet's life and conquests. Leaders of theological schools and religious divisions used to go there for dialectical discussions, and a large number of people attended them in quest of knowledge.

Anyone who spoke in the mosque had to possess the ability to express himself clearly, to attract and persuade the audience. Thus, a new kind of study came into being to show the qualities an orator needed, and to point out the defects of different speeches. Observations on effective and defective public speaking contained in al-Jahiz's book can be grouped under the following headings:

(1) Correctness of pronunciation and defects caused by deformities of the vocal organs.

(2) Proper and improper employment of language and harmonious and disharmonious use of words.

(3) Syntax and the relations between words and their meanings, clarity, conciseness, suitability of expression to different occasions and audiences, and of speech to its intended objective.

(4) The appearance of the orators and the agreeableness of their gestures and mannerisms.

Another third/ninth century literary celebrity was the writer ibn Qutaibah (d. 276/889), and the author of many books on literature and Qur'anic usages. In one of his books, *al-Shi'r w-al-Shu'ara'*, he urged people to form independent judgments and use their own power of appreciation. He attacked the philosophers' approach to criticism and their use of logical method in the appreciation and analysis of literary texts. One of the critical problems he raised was that of the division of poets into those who deliberate upon, revise, and perfect their poetical works, and those who depend on the spontaneity and easy flow of their poetic inspiration.

He also opposed the tendency always to give preference to the ancients just because they were ancients. Literary talent, he argued, was not confined to any particular period. A modern poet might easily surpass an ancient in literary creativeness and workmanship.

The contribution of the poet Prince ʻAbd Allah ibn al-Muʻtazz (d. 296/908) to the development of Arabic criticism and his influence on it were of a different character. He made a study of *badiʻ* which was considered in his days an innovation in the poetical art, and set out to prove that it was not a new creation at all. His book *al-Badiʻ* was the first attempt at a systematic treatment of the figures of speech, which he divided into three main categories: (1) the metaphor which is the pillar-stone of poetry, (2) artifices connected with the form only and not with the essence of poetry, such as assonance (*tajnis*) and anti-thesis (*mutabaqah*), and (3) the dialectical style which takes the form of a logical argument (*al-mabhath al-kalami*).

By quoting copious examples from the Qur'an, the Hadith, the speeches of the Prophet's Companions, and the language of the Bedouins, ibn al-Muʻtazz tried to show that the use of the figures of speech was inherent in the nature of poetry, and that the Arabs practised the art long before the time of Bashshar, Muslim ibn al-Walid, and Abu Nuwas. These modern poets of the ʻAbbasid period did not invent the art but simply extended its use until it was thought a new creation. It is an open question whether ibn al-Muʻtazz was influenced, in his *Badiʻ*, by Aristotle's writing, especially the *Rhetorics* translated into Arabic during the third/ninth centuries.

But the treatment of ibn al-Muʻtazz has the unmistakable stamp of originality, and the subject seems to have begun to interest Arab critics in the second/eighth century as an Arabic literary phenomenon. The influence, if any, might be sought in the prominence given to metaphor and in the attempt at definition and division of literary artifices.

But the real disciple of the philosophical sciences and the author who manifested Aristotle's influence very clearly was Qudamah ibn Jaʻfar (d. 337/948). His book *Naqd al-Shiʻr* is perhaps the first Arabic book to carry in its title the word *naqd* which is the Arabic equivalent of criticism. It is conceived and planned in the Aristotelian fashion of logical divisions and definitions. The author begins by defining poetry as regular speech with metres, rhymes, and meanings, proceeds to explain and justify this definition on logical grounds, and then adds words as the fourth element constituting poetry.

Out of the relations between these four simple elements he creates four complex ones, which evolve out of the harmony between them. He points out those earlier Arab authors have neglected the critical side of the studies of the poetical art, and directed their energies to the less important aspects, namely, prosody and linguistic considerations. His, then, was an attempt to create a real science of criticism and set the norms of excellence for the principal categories of Arabic poetry.

2. Arab contribution to literary criticism assumes clearer and mature forms in the fourth/tenth century. On the specialized side we meet with al-Baqillani (d. 403/1012), who gives a scholarly account of the

Qur'anic *i'jaz*, al-Amidi (d. 371/981), who leaves us the best classical Arabic comparison between two great poets, representatives of two schools of poetical art, and al-Qadi al-Jurjani (d. 366/976) the writer of the earliest critical treatise on a great Arabic figure in the literary history of the Arabs. On the general side, at least two contributions must be mentioned here. The first is that of Abu al-Faraj al-Isfahani (d. 356/956), the writer of *Kitab al-Aghani* (The Book of Songs), and a unique book of its kind in the literatures of the world. And the second is that of Abu Hilal al-'Askari (d. 365/1004), who attempted to give a complete systematic manual of Arabic rhetorical and critical principles as they were known at the time.

Now, to take the general contributions first. The "Book of Songs is a literary encyclopedia, in 20 volumes, dealing essentially with lyrical poetry which was set to music and singing by the musicians and singers of the early centuries of Islam. But around this theme the author collected a large amount of critical and biographical information of a great number of Arab poets. The critical aspect of *al-Aghani* has received the attention of modern academic research. The wealth of narratives and biographical data contained in the book has been a boon to modern Arabic play and story writers.

Al-'Askari made the two arts of poetry and prose the subject-matter of his treatment and tried to systemize and enlarge upon the earlier general attempts of al-Jahiz, ibn Mu'tazz, and Qudamah. The two Arabic rhetorical conceptions of *fasahah* and *balaghah* received at his hands satisfactory definitions, the first being connected with elegance and purity of style, and the second with communicating and conveying the desired meaning in a convincing and effective manner. Long chapters on distinguishing the good from the bad in speech, on the nature of literary art, and on the technique of composition and good description, with copious examples of excellent poetry and prose, occupy about half the book. The rest is an enumeration and elucidation of literary artifices, the number of which al-'Askari raised to 35, which is more than double the number given earlier by ibn al-Mu'tazz.

Al-Jurjani's treatise on *i'jaz* takes its place among Arabic critical books on account of its attempt at applying the critical conceptions to reveal some of the secrets of the Qur'anic literary excellence. In doing this the author subjected some of the highly esteemed Arabic poems to severe test of criticism to show the fallibility of human products. The Qur'anic *i'jaz*, he maintained, was something more than and above that which critical standards could explain, something that could be felt more than known by the expert and cultured reader or listener. This theory of *i'jaz*, peculiar to Muslim culture, we meet again in a different setting when we come to 'Abd al-Qahir al-Jurjani.

The two treatises which exemplify Arabic criticism proper in its methodical form are those of al-Amidi and al-Qadi, Al-Jurhani referred to earlier. Al-Amidi's *Muwazanah* (Comparison) between Abu Tammam and his disciple and kinsman al-Buhturi is the first systematic treatment of its kind in Arabic criticism. The author collects the common meanings between the two poets and, on the basis of a rigid comparison between each pair of words of similar meanings, decides which is more poetical in that particular context. He takes account of the supporters of each poet, reproduces the reasons given by

them for their stand, and brings into relief the faults and plagiarisms of each of the two great poets.

Although the subject of al-Amidi's study is a particular case of comparison, and the features it concentrates on are the artistic and poetic ones only, it claims a high value because of its success in going beyond the particular comparison to a more general comparative study. It adopts the method of adducing comparable examples from the poetry of the forerunners of the two poets, thus enlarging its scope and claiming for it a larger share of critical accuracy. It exhibits the traditional literary models and reveals its author's wide knowledge of Arabic poetry and his cultivated analytical literary taste. It also gives one of the best practical accounts of the phenomenon of plagiarism, which greatly occupies the attention of Arabic critics, permeates a good deal of their comparative studies, and to some extent, colours their judgments of literary values.

Another valuable contribution in the fourth/tenth century to methodical criticism is the "Arbitration" (*Wasatah*) of al-Adi al-Jurjani between al-Mutanabbi, the famous Arab poet of the eastern Arab world of Islam, and his antagonists. Al-Mutanabbi, by his arrogant personality, wide ambition, and forceful poetry, created adversaries as well as staunch supporters wherever he went. Many grammarians, linguists, critics, and rival poets, shared in finding faults with his poetry and revealing plagiarisms, which, they claimed, he committed against previous masters of Arabic poetry, while others hailed him as the greatest Arab poet that ever lived.

Many treatises were written about him. The situation called for a sympathetic arbiter, and al-Jurjani tried to play the role. His introduction to *Wasatah* contains a good deal of theorizing about literature. An example of this is his interesting, and almost modern, analysis of poetical ability into four component factors: Natural aptitude, intelligence, acquaintance with and memorization of past models, and practical training. These, he maintained, were factors of a general nature, applicable to all humanity, and not confined to a certain age or generation. Another example is the discussion of the influence of environment on poetry, with illustrative examples from the poetry of Bedouins and city dwellers.

All the different aspects of al-Mutanabbi's poetry, viz, his philosophizing tendency to complication, occasional leaning on previous poets, the system of building up his poem and the use of *badi'*, all received a masterly analysis at the hands of al-Jurjani. The book succeeds in giving a general picture of literary criticism in that period. It abounds in opinions of critical scholars and recalls many famous comparisons held between poets, both post and contemporary. In short, the *Wasatah* of al-Jurjani along with the *Muwazanah* of al-Amidi represents the peak of practical Arabic criticism and illustrates the Arabs' mature efforts in that field of literary study.

3. The claims of the Arab contribution of the theories of literary criticism is still to be reached in the fifth/11th century at the hands of 'Abd al-Qahir al-Jurjani (d. 471/1078), the author of the two well-known critical books: *Dala'il al-I'jaz* and *Asrar al-Balaghah*. The first book, although primarily concerned with explaining the secrets and signs of the Qur'anic *i'jaz*, faces the wider issue of literary excellence in general and reaches a fundamental theory of structure, while the second searches deep into literary

images and discovers, in the form of a psycho–literary theory, what the author takes to be the real secret of eloquence.

Each of the two volumes advances a thesis, explains it, discusses its applications indifferent rhetorical species, and answers any adverse criticism which it might arouse. They survey the field of Arabic literary criticism in the author's time, point out the lack of true scientific thinking, and the pre–occupation of authors with the non–essentials in literary art, and try to lay the foundations for a new science which would satisfy both the objective and the subjective aspects of literary appreciation. A modern reader of the two books feels inclined to presume that 'Abd al–Qahir thought of literary composition in terms of its two–fold division of structure and beauty.

But it is also possible that when the author wrote his first book he was mainly occupied with and guided by the thesis that eloquence is a product of correct structure and signification. At a later stage, and perhaps owing to other cultural influences and maturation of thought, he found that an important aspect of literary art, namely, its impact on the reader or the listener, still called for a separate and fuller treatment. The starting point in his line of thinking in *al–Dala'il* was the consideration of the place of words and meanings in the art of expression. Some of the ancients, e.g. al–Jahiz, had considered eloquence to be mainly dependent on the quality of the verbal elements, that is, the words.

But, argued 'Abd al–Qahir, words in themselves do not make language. They do so only when organized in a system of construction according to the requirements of the meaning. The important element in literary composition, then, is structure, and the essence of structure of meaning. Once meanings are defined in the intellect in their proper order, their verbal expressions follow faithfully in a determined fashion. A literary composition achieves its end if it is properly suitably constructed. It becomes vague, obscure, complicated, and generally defective when the verbal element does not harmonize with the meanings, or when the meanings themselves are not clear and coherent in the mind of the speaker or the writer.

Hence, it follows that our main concern in rhetoric should be with techniques of structure, such as junction and disjunction, mention and omission, definitiveness and in–definitiveness, etc. Our chief occupation here should be the study of the characteristics of meanings in construction, which is a combination of language and grammar. This new technique was ably and effectively applied by 'Abd al–Qahir to the study of the Qur'anic composition, and consequently to the analysis and appreciation of specimens of the highest literary models, and it yielded a complete system which later authors turned into a definite rhetorical branch, namely, the science of meanings (*ma'ani*).

In this analysis of the *Dala'il*, 'Abd al–Qahir found himself repeatedly resorting to the process of introspection, and suggesting that the best way to discover the secret of literary excellence is to look inwardly into oneself and find out what impressions, satisfactions, emotions, and excitements the whole composition leaves on one's soul. It appears as if this aspect of literary art directed 'Abd al–Qahir, in his second book *Asrar al–Balaghah*, to go deeper into the aesthetic side of literature and find out the secrets

behind the felling of enjoyment produced by beautiful literary works. Thus, the field of research was transferred to the laws of human thought.

What goes on in our minds and souls when we hear a beautiful literary passage? Why do such artifices as alliteration and assonance please us? And, why do such phenomena as superfluity and obscurity of expression displease us? What is the secret behind the aesthetic effect of a good metaphor or a cleverly conceived compound simile? Which is more appealing to our taste – the spontaneous and easy flowing poetry of al-Buhturi or the deep and meditative poetry of Abu Tammam? And why? If we can refer such questions to some inherent characteristics in our perceptions and conceptions, in our cognition and imagination, we can be assured of a solid foundation for a study of literary appreciation.

In this part of his inquiry ‘Abd al-Qahir shifted the emphasis from constructing the meaning to communicating it in an effective and pleasing manner. The new domain of his study becomes the variety of ways and means for expressing the meaning in an artistic fashion. In this he showed himself to be clearly aware of the fact that literature is part of a wider field, namely, art. Occasionally, in his analysis and argumentation he would appeal to other fine arts such as painting and sculpture. His approach in this second inquiry gave later authors the basis for creating the two separate rhetorical sciences, the science of exposition (*bayan*) and that of embellishment (*badi‘*).

Put together, the results of his two inquiries could be summarized as follows:

(a) Excellence in literature should be judged from the quality of the structure of the meaning expressed and its pleasing effect on the mind and soul of the reader (or listener) rather than from its verbal aspects.

(b) The beauty of metaphors lies in the fact that they give to style novelty, vigour, and movement, and that they bring out the hidden shades into a perceptual relief.

(c) Composite comparisons by similitude please the human understanding for a variety of reasons: all abstract to the concrete, and from what is known by reflection to what is known intuitively or through sense-perception; man naturally enjoys seeing different things unified by links of similarities and the enjoyment is enhanced when the discovery is reached after a reasonable amount of intellectual activity – if the intellectual activity involved is too little or too exacting, the enjoyment is diminished or marred.

The functions of the intellect are thinking, reflection, analogy, and inference, and all these are exercised and perceiving relations between different things; the rhetorical figures are the embodiments of all these considerations.

In assessing the value and place of ‘Abd al-Qahir’s contribution to the theories of Arabic criticism, we must bear in mind two considerations: the first is that certain Arab scholars of the flourishing period of the third/ninth and fourth/tenth centuries did anticipate ‘Abd al-Qahir in some aspects of his theory. Al-Jahiz, for example, discussed at length the art of oratory from the point of view of its relation to the audience and expressed, though briefly, the idea that good speech affects the heart in a variety of ways.

Al-Qadi, al-Jurjani also showed his interest in the psychology of literature and, as mentioned earlier, analysed in a psychological fashion the poetical ability into natural and acquired elements.

The second consideration which has been explored by modern research is that ‘Abd al-Qahir must have been acquainted with the Arabic versions of Aristotle’s *Poetica* and *Rhetoric* where the First Master probes the affective side of literature both in his treatment of tragedy and in his exposition of the art of metaphor. These various probable anticipations, however, did not diminish the claim of our later Arab author to originality. It is to his lasting credit that in the sphere of a literary study he tried to harmonize the rigour of scientific thinking with the spontaneity of literary taste, and succeeded in this to a remarkable degree.

4. We do not come across another great figure in the study of rhetoric during the fifth, sixth, and seventh centuries A.H., like ‘Abd al-Qahir, nor even a vigorous follower of the founder of the science to develop further his ideas and widen the scope of their application, yet during this period much wa added to the wealth of Arab contribution to literary criticism, mostly in general comprehensive surveys. One of the great minds of that period is ibn Rashiq al-Qairawani (d. 436/1044), the author of a standard book on the art of poetry entitled *al-‘Umdah fi Mahasin al-Shi‘r wa Adabih*. It is one of the fullest treatments of the technicalities of Arabic poetry and its principal kinds.

Another fifth/11th century critic is ibn Sinan al-Khafaji al-Halabi (d. 466/1073), the author of *Sirr al-Fasahah*. Ibn Sinan’s chief contribution is in the domain of linguistic criticism where he deals with the sounds of the Arabic language, their classifications, and their characteristics. Al-Zamakhshari of Khwarizm (d. 538/1144), the Qur’anic commentator, deserves a special mention here because of his consistent application of the rhetorical approach to the explanation and interpretation of the Qur’an. His book *al-Kashshaf* claims a high place among the Qur’anic commentaries.

He is also the compiler of *Asas al-Balaghah*, an Arabic dictionary, which is unique in its attention to original and metaphorical usages of the Arabic language. A later author and critic, Dia’ al-Din ibn al-Ayhit (d. 637/1239), left us a most valuable and interesting book on the two arts, of the writer and of the poet, entitled *al-Mathal al-Sa’ir*. He dealt with the literary art in two sections: one on verbal expression and the other on meaning, and managed to include under these two headings all the artifices and figures of speech which previous authors since the beginning the third/ninth century had been exploring, defining and illustrating.

He also restated the problems of word and meaning, plagiarism, and norms of comparison in a masterly manner, exhibiting searching, analytical power and independence of thought. Moreover, he invented a practical method for the training of the undeveloped literary talent, which relied on the two factors: the natural aptitude and the nourishing of the ability on classical models. The method is explained in detail, and illustrated from the history of literature as well as from the personal experience and literary works of the author. Ibn al-Athir was so convinced of the of the originality and applicability of his method that he claimed for himself the title of *mujtahid* of Imam in the same way as the founders of Muslim schools of

jurisprudence, Malik and al-Shafi'i, for example, were regarded by posterity.

We may end this series of the great minds with Yahya ibn Hamzah al-'Alawi (d. 729/1328), one of the Imams of Yemen and the author of *al-Tiraz al-Mutadammin li Asrar al-Balaghah wa 'Ulum Haqa'iq al-I'jaz*. The author criticizes books on the subject of literary criticism for being too detailed and thus tedious, or else too brief and consequently insufficient. He acclaims 'Abd al-Qahir as the founder of the science but confesses that he knew of his two books only indirectly through references to them in the writings of other scholars. He mentions some of the authors with whose books he was acquainted, including ibn al-Athir.

The motive for writing his book, he indicates, was to help his students understand al-Zamakhshari's approach to the Qur'anic exegesis and *i'jaz*. According to al-'Alawi, the Arabic literary sciences are four: the science of language which deals with the significance of separate words, the science of grammar which deals with words in composition and predication, the science of syntax which deals with the morphology of single words and their conformity to regular patterns in the Arabic language, and lastly, the combination of the two branches of *Fasahah* and *Balaghah* which are called *ma'ani* and *bayan* respectively, and which are the highest of the literary sciences.

After a long introduction, the book proceeds to deal theoretically with the cardinal questions in the rhetorical sciences, such as truth and metaphor, kinds of truth, kinds of significance, divisions of metaphor, linguistic sounds, single words and compound words and their characteristics, and requirements and examples of excellence in the various literary artifices.

But here we seem to have reached a parting of the ways between rhetoric and criticism. The separation is supposed to have been started by Abu Ya'qub al-Sakkaki al-Khwarizmi (d. 626/1228), the author of *Miftah al-'Ulum*. He is credited with the delineation of the boundaries of literary sciences in the manner referred to above which al-'Alawi must have followed in *al-Tiraz*. In the third division of these sciences, al-Sakkaki puts *'ilm al-ma'ani* and *'ilm al-bayan* conjointly, the first dealing with the characteristics of speech composition by virtue of which they conform to the requirements of the occasion, and the second with the different ways of expressing the meaning to complete the desired conformity.

By this division al-Sakkaki seems to have carried a logical conclusion the distinction which 'Abd al-Qahir indicated between questions of speech structure and composition and those of signification and effectiveness. To this dual division, al-Sakkaki appended a small section on the special aids to speech beautification, which later became the domain of a third separate science, namely, *badi'*. This process of narrowing the critical field to *Balaghah* and of demarcating its sciences was completed and standardized a century later by al-Khatib al-Qazwini (d. 739/1338) who condensed al-Sakkaki's *Miftah* into a textbook called *Matn al-Talkhis*.

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Chapter 53: Persian Literature

A. Persian Literature of Early Times

The earliest remnant of the Aryan languages of Iran which antiquity has bequeathed to us is the language of the Avesta, the sacred book of the Zoroastrian religion.

For About 900 years the people of Iran had no script in which they could write the Avesta. So they continued to learn it by heart and thus communicate it from generation to generation right from the seventh century B.C. to the third century A.D.

A special script was at last invented for this book in the third century A.D. The Avesta written in this particular script has been known as the Zend Avesta. At times it has been just mentioned as the Zend. The French scholar Anquetil du Perron who was the first to have studied it in India at the end of the 12th/18th century, introduced it to the West. For a considerable time it continued to be known as the Zend language in Europe. At present, however, the more accurate term of "Avestic language" is in vogue. The script in which the Avesta was recorded should be known as the "Zend script."

Much as been speculated on the origin and times of Zoroaster, and different theories have been advanced in this respect from the earliest times. What appears to be most authentic at present, however, is that Zoroaster preached his religion between 660 and 583 B.C. in the north–eastern zone of the Iranian plateau in Central Asia. It is plausible that he sprang from the Median stock, lived in the north–west of the present day Iran, and from there he travelled east to Central Asia. Of the extant languages and dialects of the Iranian plateau Pashto or Pakhto has the closest affinity with the Avestic language.

This lends support to the view that the Avestic language was spoken in the north–eastern regions of the Iranian plateau in the seventh century B.C. The Avesta is a massive work, a major portion of which has been destroyed and forgotten owing to the vicissitudes of time and the domination of Iran by foreign nations. What remains today of this book was compiled in the early days of the Christian era. It comprises 15 out of the 21 original parts and if the extinct parts were proportionate in volume to those present about one–fourth of the book may be said to have perished.

From the philological point of view, the extant parts of the Avesta were not written in one period of history. On the contrary, its composition may be divided into three sections. The Gathas, which are composed in poetry, doubtlessly constitute the earliest part of the book. The Avesta is a collection of the Canon Laws and decrees of the Zoroastrian faith which were formulated in different ages. The last of these is contemporaneous with the rise of the Achaemenian power in the sixth century B.C. Possibly when Old Persian, i.e. the language of the coins and inscriptions of the Achaemenians, was current in the western and southern regions of the country, namely, Media and Parsa, Avestic happened to be the language of the eastern or at any rate of the north–eastern provinces of Iran.

Philologically speaking, the Avestic language runs parallel to and is contemporaneous with Sanskrit and, apparently, the origin of both these languages can be traced back to yet another ancient language which was perhaps the original language of the Indo–Iranian Aryan stock.

The language of the coins and inscriptions of the Achaemenians, ever since they came to power in the middle of the sixth century B.C., is distinctly Aryan in character and is known as Old Persian. This language is also contemporaneous with Avestic, and the growth and development of the two dates back

to the same age. There are reasons to believe that when Avestic was passing through the early stages of development in the eastern provinces of the Iranian plateau the Old Persian language was also making headway in the west and south-west of Iran.

With the establishment of the Achaemenian Empire the people of Iran suddenly found themselves to be the neighbours of various Semitic nations of western Asia including the regions of western Iran. The Semitic languages made an inroad into the country and their influence was so strong that the Aramaic language and script were officially adopted by the Iranians. The Achaemenian kings were men of liberal views and they guarded full freedom of belief to their subject races as well as liberty to develop their own languages. That is why the cuneiform Achaemenian inscriptions are recorded not only in Old Persian but also a parallel translation of the same runs of Syriac, Elamite, Nabataean, and Aramaic languages.

The establishment of the Achaemenian Empire saw the people of western Iran divided into two main groups, namely, the Medes and the Persians ("Parsis"). It appears certain that either they spoke the same tongue, i.e. Old Persian, or their languages had very close kinship with each other. We find no traces of the Median language in the Achaemenian inscriptions. Apparently, if the Medes had spoken a different language, the Achaemenian emperors who had employed the Syriac, Ealmite, and Nabataean languages in their inscriptions would certainly not have ignored Median. Moreover, a couple of words of this language and the names of the Median chiefs that have come down to us suffice to establish the close affinity of Median with Old Persian.

From 330 B.C. when the Macedonians conquered Iran, Greek became the official language of the country and continued to enjoy the status for a long time. Right down to the Christian era Greek is the only language to be seen in the Seleucid and Parthian writings. Needless to say that during this span of three and a half centuries the Iranian languages continued to flourish. Old Persian, however, is an exception, which gradually went out of use. We can witness definite marks of decay in the Old Persian writings of the later Achaemenian period in contrast with those of the earlier one.

At the dawn of the Christian era we find two languages in the Iranian plateau running parallel to each other. One of these grew and developed in the eastern regions. This has always been called "Dari" by the Iranians. The other which flourished in the western parts of the country was known as "Pahlawi." These two languages have come down to our own times. Many dialects of "Dari" still continue to exist in the eastern regions of the Iranian plateau as far as the Chinese frontiers: the most important of these are spoken in the Pamir region.

The Pahlawi language has lived in the form of verse known as "Fahlaviyyat," in the books written in Persian on the art of poetry and in dialects spoken in the north, south, and west of the country.

The above-mentioned two languages have very intimate relationship and these have apparently stemmed from the same origin. A number of Aramaic words, however, entered Pahlawi and these have been known as "Huzvaresh" or "Zuwarishn." These words found their way also into books of

lexicography. In the Indo-Pakistan sub-continent these have been erroneously given the name of the "Zend and Pazard" language. "Dari" was too far away to receive the impact of the Aramaic language. On the contrary, it accepted the influence of the eastern languages such as Tukhari, Sughdian, and Khwarizmi.

At first the Aramaic script was adopted for both the languages. Later, however, a change took place and certain Aramaic letters were put together in Pahlawi to form what later came to be known the Pahlawi script.

The Orientalists did not fully grasp the significance of these subtle technical differences and they have been treating old Pahlawi and Dari as one language. Consequently, they have been employing the terms Northern Pahlawi or the Parthian Pahlawi for the later language. In recent times, however, some of them have defined it as the Parthian language whereas Pahlawi itself has been referred to as the Southern or Sassanian Pahlawi.

The number of the extant pre-Islamic works of these two languages is very small. The most important ancient work in Dari consists of the Manichaean texts and translation of parts of the Avesta into old Dari known as "Pazand." The contemporary Dari has also been employed in some of the inscriptions of Sassanian kings.

Both Dari and Pahlawi possessed literature of their own before the advent of Islam. This literature, unfortunately, has not come down to us.

The history of the earliest Iranian dynasties during the Islamic period begins from the year 205/820. The dynasties which sprang up in the eastern regions raised the structure of their national politics on the basis of language. Since the language of these tracts was "Dari," the literature produced in it was bound to outshine Pahlawi literature.

In 429/1038 the Saljuq Turks poured out of Turkestan to invade Iran. They gradually conquered the whole country. Since they hailed from the east and their officials also belonged to this region, it was natural that they should adopt "Dari Persian" as their Court language, which they carried to the farthest corners of Iran. Consequently, in the first quarter of the fifth/11th century, Dari had attained the status of the common literary language of the whole country. It gained supremacy in other regions also where Pahlawi had been the popular spoken language until then.

From this date Dari became the undisputed literary language of Iran and, like many other dialects prevalent in the country, Pahlawi was reduced to the status of a dialect. The last vestige of Pahlawi in the form of inscriptions and coins in Tabaristan in the north of Iran date back to the middle of the fifth/11th century.

The first specimens of Pahlawi literature which belong to the early centuries of the Hijrah consist of a number of books of religious nature which the Iranian Zoroastrians had written with the specific object of

preserving their Canon Law. These books were taken to the Indo-Pakistan sub-continent when the Zoroastrians migrated there. European scholars have been publishing their texts since the last century. Amongst these, certain books are claimed to have belonged originally to the pre-Islamic Sassanian era. There is ample evidence, however, to prove that these were composed during the Islamic period.

What is now known of Pahlawi literature is confined to these very books and treatises. They suggest that Pahlawi literature had, at any rate towards the end of the Sassanian period, flourished on a vast scale. It is an undeniable fact that, while during the 400 years which immediately preceded the Saljuq period, Dari had been recognized as the literary language of the country; Pahlawi had flourished on the north, south, and west of the present day Iran. Of this only a specific form of verse known as "Fahlaviyyat" has come down to us, the quatrains of Baba Tahir-i 'Uryan of Hamadan being its most remarkable specimen.

B. The Beginning of Modern Persian Literature

The present day language of Iran is the latest evolutionary of "Dari" and is known as "Farsi" or the Persian language. The people of Iran themselves, however, have always employed the word "Persian" for whatever languages have flourished in the country. In the past the two languages under discussion which flourished simultaneously have been known as the "Dari Persian" and the "Pahlawi Persian."

The Persian language of today, namely, Dari, originated, as mentioned above, during the Muslim period in the east of Iran. The important centres of this language were the cities of Tranoxiana and Khurasan, to wit, Samarquan, Bukhara, Balkh, Merv, Herat, Tus and Nishapur. These centres extended even to Sistan. This explains why the most eminent poets of this language down to the Saljuq period hailed from these particular cities. Gradually, Dari expanded from Khurasan and Transoxiana to other parts of Iran, so that by the Ghaznawid period it had extended to Gurgan, Damghan, and Rayy, and by the Saljuq era it had travelled as far away as Adharbaijan, Isbahan, and Hamadan.

In the province of Fars it did not achieve the status of a popular language even in the days of Sa'di and Hafiz. That is why these two great poets have revelled in the mastery of this language and in the expression of their poetic genius through it. Both of them also composed verse in the Pahlawi dialect of Fars, popularly known as the Shirazi language.

The rules of prosody of Arabic poetry were formulated by Khalil ibn Ahmad. These were assiduously observed by the Iranian writers in their Persian works. Considerable literature was produced on the subject both in Iran and in the Indo-Pakistan sub-continent. Consequently, the same Arabic names were retained for Persian metres and rhymes, so much so that even the same Arabic word *afa'il* was employed for purposes of scansion. Metres can be classified into three groups, i.e. metres common to both Arabic and Persian, metres which were the outcome of the Iranian genius and did not exist earlier, and metres which were, on the reverse, typical of and exclusive to Arabic poetry.

Amongst the exclusively Persian metres the most well-known is the one employed in the quatrains of Baba Tahir 'Uryan of Hamadan. In the pre-Islamic times right up to the Achaemenian period the only verse known was the blank verse. Specimens of poetry preserved in the Avesta and Old Persian are all composed in blank verse. This type of poetry was also in vogue in Pahlawi and Dari, the two languages so closely related to each other.

The forms of Persian verse have also an independent character and they have not always followed the Arabic pattern. The *"mathnawi," "tariji'-band," "tarkib-band," "musammat," "muthallth," "murabba'," "mukhammas," "mustazad,"* and *"ruba'i"* are all exclusive to Persian poetry, and they have originated solely in the Persian genius. Persian verse has also influenced Urdu and Turkish poetry. Similarly, the rhymed verse and many figures of speech own their origin to the creative genius of the Iranian mind. *"Muwashshah"* and *"mulamma'"* are also Persian in origin.

C. Different Epochs of Persian Poetry

The oldest extant specimens of Persian verse date back to the middle of the third/ninth century. But these fragments are not sufficient to afford us a true picture of the contemporary Persian poetry. What emerges beyond doubt, however, is the fact that the Tahirids (205/820 – 259/872) and later the Saffarids (254/867 – 296/908) played a worth role in ushering in a new era of Persian literature.

Throughout the fourth/tenth century Persian literature continued to flourish with remarkable success at the Samanid Court and in the vast regions lying between the Chinese frontiers and Gurgan on the Caspian Sea. The court of Nasr bin Ahmad, the Samanid ruler, is especially famous for the large number of poets associated with it. Since then the current of Persian literature has flowed continuously.

Modern Persian poetry, in its earliest stages, was characterized by a note of realism. The realist school held its own for 200 years until the end of the fifth/11th century. The greatest Iranian poets of this school who flourished during the fourth/tenth century were Rudaki (329/941), Shahid Balkhi (325/937) and Daqiqi (341/952). Early in the sixth/12th century it gave way to naturalism. Meanwhile, the Iranian Sufis had discovered in poetry a most suitable vehicle to disseminate their philosophical message to the people. Sufism or Islamic mysticism had become popular in Iraq in the middle of the second/eighth century. In the earliest stages it merely laid emphasis on piety and godliness and no elaborate system had yet evolved.

Kufah and Basrah were the earliest centres of this movement. Later, however, Baghdad stole the limelight and became associated with great names in mysticism. From Baghdad it spread out in two directions, viz, North Africa and the "Maghrib" on the one side and north-east of Iran, that is, Khurasan and Transoxiana on the other. In the West it came to be linked up with Greek thought, especially with Neo-Platonism and with certain Israelite doctrines. In the East, especially in Khurasan and Transoxiana, it developed kinship with the teachings of Manichaeism and Buddhism which had enjoyed wide popularity in these regions for centuries. From here it travelled to India and developed in what may be

called the Indo–Iranian school of mysticism.

This latter school gained immense popularity and through Iran it spread to Western Asia and even to North Africa. It still continues to exist in the entire Islamic world from the borders of China to Morocco. The great mystics of Iran chose Persian for imparting their noble thoughts to all classes of people. That is why most of the books of the Indo–Iranian school of mysticism were written in Persian prose or verse and the language of mysticism in the Indo–Pakistan sub–continent has always been Persian. Symbolism inevitably enjoys profound importance in the mystic cult. For fear of opposition at the hands of the devout the mystic poets were constrained to express their views and beliefs in the language of symbols.

They were, thus, destined to contribute to the special school of symbolism in Persian poetry. The earliest amongst the great Sufis to compose verse in this fashion is the celebrated poet Abu Sa'id Abu Khair (357/967 – 440/1049). Sana'i (437/1046 – 525/1131), Farid al–Din 'Attar (627/1229), and Maulana Jalal al–Din Rumi (604/1208 – 672/1273) may be considered the greatest of the symbolists among the poets of Iran. *Hadiqat al–Haqiqah* of Sani'i, *Mantiq al–Tair* of 'Attar and the *Mathnawa* of Rumi may be regarded as the most important books of mysticism ever written in Persian.

On account of this great tradition Persian poetry produced during the whole of this period in Iran and the Indo–Pakistan sub–continent is steeped in mysticism. The recital of this kind of verse in the assemblies of prayer and devotion among different sects of Sufis, at times to the tune of music and occasionally to the accompaniment of dance, has been regarded as one of the most important observances of the mystical creed. Even men who did not belong to any school of mysticism had to compose, whether they liked it or not, their poetical works, especially their "ghazals," in a mystical strain.

Mystic poetry of Iran and the Indo–Pakistan sub–continent forms a subject that requires a very elaborate discussion. In fact, it is one of the most profound literary and philosophical themes of all times. The Iranian mystics, apart from expounding the fundamental doctrines and essential principles which have deep academic and philosophical significance and are the especial concern of those wholly steeped in mysticism, have also instructed the common folk on what is popularly termed as generosity and manliness (*futuwwat*).

This teaching mainly consisted of certain moral precepts and aimed at inculcating amongst the common mass of people the feeling of manliness, courage, forgiveness, and generosity, and might be compared with the institution of knighthood or chivalry prevalent in Europe in the Middle Ages. Many books were produced on this subject in Arabic and Persian and these have been known as books of generosity and manliness (*Futuwwat Nameh*). This particular institution travelled from Iran to all the Islamic countries as far away as North Africa and the "Maghrib" and is still lives in many parts of these lands.

It may be pointed out that mystical verse in the Persian language has provided the civilized humanity with the most cosmopolitan type of poetry, and this branch of Persian literature excels all other kinds of poetry both in sweep and charm.

In the pre-Islamic Iran epic poetry and national sagas had always enjoyed wide popularity. In the Islamic period this tradition was not only maintained but it also received further impetus. Initiated by a few earlier poets it found its culmination in Firdausi's (411/1020) great classic *Shah Nameh*, which remains to be one of the most outstanding epic poems of all times. He completed its first narrative in 384/994, and the second in 400/1010. In this field, as in many others, Persian literature is immensely rich. A number of epic poems were composed in successive ages in Iran and in the Indo-Pakistan sub-continent, and this tradition was maintained until a century and a half ago.

Amongst the most important of these are, chronologically speaking, *Garshasp Nameh* of Asadi (465/1073) which was completed in 458/1066, *Wis-o Ramin* of Fakhr al-Din Asad of Gurgan (middle of the fifth century A.H.) and the quintet (*khamseh*) of Nazami of Ganjeh who remained devoted to its composition from 572/1176 to 599/1202. Nizami's style in epic poetry won especial favour both at home and in the Indo-Pakistan sub-continent and a number of poets wrote under this unique influence, amongst the most notable of them being Amir Khusrau of Dhelhi (651/1253 – 725/1325), Khwaju-i Kirmani (689/1290 – 763/1362), and Jami (817/1414 – 898/1493).

This typical epic style has left a deep impress on the Turkish language, and many Turkish poets have imitated it, some of them merely translating the same contents into their own language. Amongst these may be counted the epic poems of Mir 'Ali Sher Nawa'i (844/1440 – 960/1500) composed in the Chaghata'i, i.e. the eastern dialect of Turkish, and the epics of Fuzuli of Baghdad (970/1562) in the Azari, i.e. the western dialect of the Turkish language.

Among the other chief characteristics of Persian poetry are the composition of philosophical verse and the introduction of philosophical generalities in poetry composed in simple language. We have it on the authority of the oldest specimens of Persian poetry that poetry and philosophy had forged a close link together ever since Persian poetry originated in Khurasan and Transoxiana. The most important book on practical philosophy to have gained immense popularity amongst Muslims in general and the Iranians in particular in the early Islamic period was *Kalileh wa Dimneh* which was at first translated from the original Sanskrit work *Panchatantra* into Pahlawi and presumably brought to Iran in the sixth century A.D. in the reign of Khusrau Anushirwan (Nushirwan the Just).

It was translated from Pahlawi into Syriac about the same time. In the early Islamic period the famous Iranian scholar ibn al-Muqaffa' rendered it from Pahlawi into Arabic. It was later versified by Rudaki, the greatest poet of the Samanid period and one of the great names in Persian poetry in its whole history of the last 1200 years. Only a few couplets of this long poem have survived.

Another book which dealt with practical philosophy like *Kalileh wa Dimneh* was the famous work *Sindbad Nameh*. This was also rendered into verse by Rudaki. That is why his name has been prefixed with Hakim or philosopher since old. This also suggests that there was a considerable element of philosophy in this poetical works. Another great contemporary of Rudaki, namely, Shahid Balkhi, was known as one of the famous philosophers of his time. He had also entered upon a controversy with yet another famous

physician–philosopher Muhammad bin Zakariya Razi and composed some treatises in refutation of his views.

Afterwards, many Iranian poets expounded valuable philosophical themes in their works and were known as philosophers. Kisa'i of Merv was one of them. Firdausi and 'Unsuri also enjoyed the title of Hakim or philosopher for having introduced philosophical themes in their works. The great poet Nasir Khusran (394/1004 – 481/1088) expounded philosophical thought in all his poetical works in addition to a few books of philosophy that he wrote in Persian prose from the Isma'lite point of view. The Isma'ilites of Iran always attached great importance to the Persian language in disseminating and inculcating amongst others the philosophy of their own sect. That is why they were even known as the "educationists" or "Ta'limites."

The poets of this sect always introduced an element of philosophy in their works. Amongst the eminent Iranian philosophers and thinkers, Persian verse has been ascribed to Abu Nasr Farabi (d. 339/950), ibn Sina (d. 428/1037), Khuwaja Nasir al–Din Tusi (597/1201 – 672/1274), Imam Fakhr al–Din Razi (554/1159 – 606/1209), Afdal al–Kashani (d. 615/1218), Shihab al–Din Suhrawardi Maqtil (d. 587/1191), Jalal al–Din Dawwani (830/908 – 1426/1502 – 1503), Mir Sayyid Sharif Gurgani (740/816 – 1339/1413), Mir Muhammad Baqir Damad (d. 1041/1631), Sadr al–Din Shirazi, i.e. Mulla Sadra (d. 1050/1640 – 1641), and Haji Mulla Hadi Sabziwari (1212/1295 – 1797/1878).

One can say that there was hardly any philosopher in Iran who did not express his beliefs in poetry. Some of them like Afdal al–Din Kashani composed a considerable amount of verse. Philosophical thought also found expression in the quatrains of the famous scholar and philosopher 'Umar Khayyan (d. 517/1123 – 1124). The collection of these quatrains forms today one of the most famous books in the world, and has been translated into almost all the civilized languages including many dialects of Pakistan and India. One of the most important features with which we are confronted in Persian literature, irrespective of prose or poetry, is the effort on the part of the Iranian philosophers to affect Plato, Aristotle, Plotius, the Stoics, Zeno, and scepticism as well as a part of the philosophical teachings imparted in Alexandria and Edessa, and the fundamentals of Islam. Some of them harmonized mysticism with philosophy and divine law, and in this field Persian is decidedly the richest language in the world.

In the eighth/14th century Hafiz, the great immortal poet of Iran, while following the naturalist school which had reached its highest point of glory in Rumi's poetry (606/1200 – 691/1292) had laid the foundation of impressionism in Persian poetry. This school did not find its roots in Iran for about a hundred years and it was only at the end of the ninth/15th century that a few great Persian poets lent it a new charm and colour. This was the time when the Mughul dynasty had reached the height of its power and splendour in the Indo–Pakistan sub–continent. Persian enjoyed the status of official language of the Mughul Court. All notable men of the sub–continent had fully imbibed Persian culture in all walks of life.

Every year a large number of Iranian intellectuals and artists would travel to the Indo–Pakistan sub–

continent either to settle down there permanently or to make it a temporary home. These scholars introduced this school of poetry in India where it won immense popularity. It found its highest expression at the Courts of Jalal al-Din Akhbar (r. 963/1556 – 1014/1605) and his successors, namely, Jahangir (r. 1014/1605 – 1037/1628), Shahjahan (r. 1037/1628 – 1068/1658), and Aurangzib (r. 1069/1658 – 1118/1707). Under the patronage of these Courts, rich and exquisite works of poetry were produced. There are a large number of poets who attained eminence in this style, popularly known in Iran as the Indian School of Poetry.

Among them ʻUrfi (963/1556 – 999/1591), Naziri (1023/1614), Zuhuri (1024/1615), Talib Amuli (1036/1627), Qudsi (1056/1646), Kalim (1061/1651), and Sa'ib (1012/1603 – 1083/1672) had been attracted from Iran and they provided both stimulus and schooling in numerous well-known poets of the local origin. The most brilliant amongst this galaxy of poets were Faidi (953/1546 – 1004/1596), Abu al-Barakat Munir (1055/1645 – 1099/1688), Ghani (1072/1661), Nasir ʻAli (1108/1696), Ghanimat (1107/1695), Niʻmat Khan ʻAli (112/1709), Bidil (1134/1722), Nur al-ʻAin Waqif (1191/1776), Siraj al-Din ʻAli Khan Arzu (1169/1756), Ghalib (1213/1798 – 1285/1868), ʻUbaidi Suhrawardi (1306/1889), Shibli Nuʻmani (1274/1857 – 1332/1914), Girami (1345/1926) and many others. The literary tradition bequeathed by them still lives in the Indo-Pakistan sub-continent.

The last great poet of the Persian language in the Indo-Pakistan sub-continent was Muhammad Iqbal (1289/1873 – 1357/1938) who infused a new life in Persian poetry, rejected the impressionist school that had preceded him, and revived the symbolist traditions with magnificent results.

In Iran a new movement in poetry made itself manifest at the end of the 12th/18th century which promised pastures anew. As a consequence, most of the poets returned to naturalism. The tendency to revitalize and revivify Persian verse and to bring it closer to Western poetry is distinctly visible in Iran. There are even attempts at going to such extremes as surrealism. The younger Iranian poet is, however, passing through a period of transition and has yet to determine his final attitude. Nevertheless, one comes across exquisite pieces of poetry produced by some of the poets and poetesses of the younger generation. This augurs well for a great future. It is not unlikely that a new school of poetry will emerge before long.

One who wishes to study the evolution of Persian poetry and its different schools and styles in minute detail will perforce have to make a deep study of the works of quite a few hundred poets of Iran, Afghanistan, Central Asia, Pakistan, India, and Turkey – men who selected this language as their medium of expression and stuck to the Iranian tradition of poetry.

It may be observed that all the important poets of Persian language, whether they were of the Iranian or Indo-Pakistani origin, or whether they hailed from certain Central Asian and Caucasian regions formerly treated as parts of Iran, were Muslims. Only with regard to Daqiqi, the celebrated poet of the Samanid period, it has been contested by a few scholars that he belonged to the Zoroastrian faith. Be even this cannot be taken for granted. In the eight/14th century, however, a Zoroastrian poet Bahram bin Puzdhu

rendered two books of the Zoroastrian religion into verse, namely *Zartusht Nameh* and *Arda Viraf Nameh*.

D. Persian Prose

Modern Persian is today one of the richest languages in the world. It retains a link, close or distant, with all the Aryan languages in the East as well as those in the West. It, thus, bears a close resemblance to all these languages in respect of grammar, syntax, and composition. However, on account of the deep attachment of the Iranian scholars to Islamic learning and sciences on the one hand and to Arabic language on the other, Persian became progressively richer and vaster language.

In the middle of the first/seventh century when the people of Iran embraced Islam, the Arabic language gained a complete hold on that country. It came to be looked upon not only as the language of religion but also one of arts and letters. During the early period of the ‘Abbasid Caliphate when a strong movement was launched to produce scientific and literary works in Arabic, the Iranians played a very important role in it. They were also conspicuous in rendering translations of Pahlawi, Syriac, and at times even Greek works. They also composed a large number of original works in Arabic. After this Arabic became so widely popular and gained such an immense hold on Iran that the most important books in the field of Arabic grammar and lexicography were written by the Iranians.

Many of the Persian poets composed Arabic verse and some of their works have been acknowledged amongst the finest and most exquisite specimens of Arabic poetry. The Iranian philosophers adopted Arabic as the medium of their expression from the very beginning. Only a few of them ever attempted to compose their philosophical works in Persian. Books produced in Iran on the subjects of astronomy, mathematics, and medicine was mostly written Arabic. Some of the Iranian historians also selected Arabic as their vehicle of expression. Most of the religious literature, including jurisprudence (*Fiqh*), Hadith, and commentary on the Holy Qur’an, were also produced in Arabic.

From the earliest period the Persian language had imported Arabic elements. Especially in the domain of technical terms Persian was completely overwhelmed by Arabic. Incidentally, the Iranians have given special meanings to many Arabic words which have also passed into Urdu in their changed Persianized sense. The overwhelming influence of Arabic on the Persian language is traceable in different epochs of Iranian history.

However, we find that some of the great scholars of Iran like ibn Sina, Nasir Khusrau, Afdal al-Din Kashani, and Abu Raihan al-Biruni have at times shown in their Persian works a tendency to coin fresh Persian words instead of employing the current technical and scientific Arabic terms. Certain other writers have also shown a tendency to employ new compound epithets of purely Persian origin in their works. The outstanding specimens of this trend in the Indo-Pakistani Persian literature are visible in *A’in-i Akbari* of Abu al-Fadl.

The excessive use of Arabic words in Persian prose started in the fifth/11th century. *Kalileh wa Dimneh* which was rendered into Persian by Nasr Allah b. ‘Abd al-Hamid from the Arabic version of bin al-Muqaffa‘ may be regarded as the first specimen of this type of writing. Amongst other books written in this style may be enumerated *Marzban Nameh* of Sa‘d al-Din of Varavin, *Tarikh-i Wassaf, Tarikh-i Mu‘jam*, and *Durrah-i Nadirah*, the last being the work of Mirza Mehdi Khan, the historian of the Court of Nadir Shah. But the number of such books is very small. In fact, 99 Persian books out of 100 have been written in simple and direct style and they have always reflected the contemporary idiom, except where a writer has deliberately digressed from the natural style to employ Arabic phrases, a tendency which had been regarded as a kind of literary treat.

As a result of the systematic development of Persian poetry and use of symbolism, Persian prose evolved a new style in which the writer would lay the highest emphasis on allusions, metaphors, and rhetorical devices. We notice the name trend in the recent prose styles of some European languages. This is exceedingly sophisticated style of Persia prose in which the content was obscured by vague rhetoric and long repetitious sentences reached its zenith in the ninth/15th and tenth/16th centuries. It also penetrated into the Indo-Pakistan sub-continent where we find in *Seh nathr-i Zuhuri* and *Rasa’il-i Tughra-i Mashhadi* its most outstanding specimens.

This style won remarkable popularity in the field of Court documents, royal commands and decrees, and official correspondence. The tradition passed on to the Indo-Pakistan sub-continent and found its finest expression in *Manshaat-i Abu al-Fadl Allami*. It also found its way to Turkey and during this period the official correspondence of the Ottoman Caliphs was wholly conducted in the same style as that in Persian. The “Court style” originated in Iran in the sixth/12th century, enjoyed a large, uninterrupted era of popularity and found its best specimen in *Manshaat-i Mirza Tahir Wahid* composed in the 11th/17th century. It was, however, dealt a fatal blow by Mirza Abu al-Qasam Qa’im Maqam Farahani (1193/1779 – 1251/1835) whose prose was distinguished for the simplicity and purity of its style.

The contemporary Persian prose has a highly simple, facile, and elegant expression. It has freed itself from the conventional ornate and abstruse style. Today it has drawn itself far closer to the idiomatic and colloquial Persian expression than ever before.

During the long history of Persian prose a very large number of books have been written in all branches of knowledge such as jurisprudence, commentary on the Holy Qur’an, scholastic theology, mysticism, philosophy, medicine, mathematics, astronomy, arts, ethics, tales and fables, and even such subjects as handicrafts. However, a majority of prose works in Persian have always been confined to history and practical ethics. That also explains why all books on the history of the Indo-Pakistan sub-continent during the Islamic period have been produced in Persian. On this very account some knowledge of Persian may be regarded as an essential pre-requisite for learning history of some of the Asian countries. In fact, Persian literature may be divided into poetry and history as its two main component parts.

E. Persian Grammar and Lexicography

For a long time the Iranians paid no heed to Persian grammar since they were no strangers to the rules of their mother tongue. The only expositions of Persian grammar in the past consisted of brief notices which some of the grammatical works started in right earnest when during the Mughul rule in India Persian became the literary as well as the Court language of the subject were for a considerable time confined mostly to the Indo-Pakistan sub-continent alone.

In the field of Persian lexicography as in grammar, not much interest was shown in the past. The works produced contained a rather limited number of uncommon words employed in poetry. When a proof was required regarding the authenticity of a certain word, it was furnished from the couplets in which it had been used.

It is quite apparent that at first the necessity for such dictionaries arose in the western parts of Iran where Dari was not the language of the people. The first dictionary to have ever been produced in Persian was compiled by Qatran Urumawi, the famous poet who lived in Tabriz and died in 465/1075. This book is now extinct. After him Asadi of Tus, who also lived in Adharbaijan and died in the same year as Qatran, completed his famous dictionary which is the oldest extant work on the subject.

As mentioned earlier, the Saljuqs had carried their official language, Dari, right into Adharbaijan in the wake of their conquests. Since the people of this province spoke Pahlawi, they found it difficult to understand meanings of certain words which were familiar to Dari but did not exist in Pahlawi. Hence, the urge to compile these works in Adharbaijan.

The most important role in the compilation of dictionaries was undoubtedly played by lexicographers of the Indo-Pakistan sub-continent. During the Mughul period the Court language of the Empire was Persian. People, for whom it was not the mother tongue, stood in need of books for guidance and help. In the 11th/17th century special attention was paid to this work, though dictionaries had been in the process of compilation since a hundred years earlier.

For a long time the works of the Indo-Pakistani lexicographers or those of the Iranian scholars who had migrated to the sub-continent continued to be the most authentic source of reference even for the Iranians themselves. The most outstanding of these books are *Farhang'i Jahangiri* of Jamal al-Din Inju, *Farhang'i Rashidi* of 'Abd al-Rashid of Thatta, *Burhan-i Qati'* of Muhammad Hussain Tabrizi, *Asif al-Lughat* of 'Aziz Jang Bahadur, *Bahar-i 'Ajam* of Tek Chand Bahar, *Chiragh-i Hidayat* of Siraj al-Din 'Ali Khan Arzu, *Ghiyath al-Lughat* of Muhammad Ghiyath al-Din, *Farhang-i Anand Raj* of Muhammad Padshah Shad, and *Mustalihat al-Shu'ara* compiled by Varasteh.

The number of lexicographical works compiled in the Indo-Pakistan sub-continent exceeds 100 of which the oldest, viz. *Adab al-Fudala'* of Qadi Khan Badr Muhammad of Delhi, was completed in 822/1419. In other words, the period during which these works were diligently and assiduously produced extends to

about 500 years.

The necessity of compiling such dictionaries was also felt in Turkey where Persian enjoyed the status of a literary language at the Turkish Court of the Ottoman Caliphs and many a Turkish scholar produced literary works and composed poetry in Persian, so much so that even some of the Turkish emperors composed poetry in the language. As a consequence, a few dictionaries, to wit, *Lughai-i Halimi, Lughat-i Sha'uri, Dasinah-i Kabir* and *Lughat-i Shah-nameh* of 'Abd al-Qadir Baghdadi, were edited in Turkey. But as against the dictionaries produced in the Indo-Pakistan sub-continent in which the meanings of words were also explained in Persian, in Turkey the meanings and explanations were given in Turkish. The Iranians themselves, therefore, have not been able to utilize these works.

To no other area of the world does the Persian language and literature owe so profusely as to the Indo-Pakistan sub-continent. Not only have the scholars there written hundreds of very useful books on subjects as varied and diverse as history, lexicography, grammar, mysticism, biographies of poets, and commentaries on certain Persian texts, and have preserved and jealously guarded many books lost to posterity in other countries and even in the Persian language. There is hardly any big city in the Indo-Pakistan sub-continent where a number of Persian books have not been published. The number of such published works stands at 2,000.

F. Influence on Persian Literature

The history of modern European powers in the East dates back to the Renaissance period. Iran was one of the earliest countries to have come into contact with the West. At first it was the Christian missionaries who set foot on Muslim lands with a view to propagating their religion. They were, thus, introduced to the rich treasure of advanced sciences that had accumulated there through centuries but were unknown to the West. They learnt the Arabic and the Persian languages in order to acquaint themselves with the rich philosophical thought and the subtle beauties and artistries of Persian literature. At first works of Persian classics were rendered into Latin and soon after these were published in some other prominent European languages such as French, English, German and Italian.

The earliest Persian work to have translated into a European language was *Gulistan* of Sa'di. Gradually, the works of Firdausi, Hafiz, 'Umar Khayyajm, Nizami, Jami, Jalal al-Din Rumi, Farid al-Din 'Attar, Nasir Khusrau, and others were translated. These eminent stars on the firmament of Persian literature are now regarded in all Western countries as amongst the great immortals of world literature. It was the dissemination of their thought which provided stimulus to numerous European poets and writers of the 13th/19th century to take inspiration from Persian writers. This influence was at times fully revealed in their works and at others was reflected in their thought.

One of the earliest amongst them was Dante, the Italian poet, who was inspired to write his *Divine Comedy* in which he describes his spiritual flight into heavens and the next world under the influence of Iranian literature. Next, it was the great German poet Goethe who was thrilled by the sheer beauty of

Persian literature through German translations of Persian poetry, and who had even pursued for some time the study of Persian language in order to have a fuller appreciation of its literature. He even dedicated to it one of his works *West–ostlicher Divan*, and gave to a section of this book the title of "Kitab–i Hafiz."

The well–known English poet Edward Fitzgerald also published a small collection known as *Rub'iyat–i 'Umar Khayyam* which he claimed to have translated from the Persian collection of Khayhyam's quatrains. Actually, however, not all these quatrains are by Khayaam himself; some of these are the work of other Persian poets. As such, this collection reflects the thought of a number of Iranian philosophers.

Many of the European poets and writers who acquainted themselves with the thought of Persian poets through translations in Western languages have produced delightful works associated with Persian literature. Mainly, however, they have come under the spell of Khayyam, Sa'di and Hafiz.

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Chapter 54: Turkish Literature

A. Development of Turkish Prose and Poetry

The earliest surviving written documents of Turkish literature date from the first/seventh century. They consist of short inscriptions in the so-called “Runic” letters in the Upper Yenisei Valley in Siberia. Lengthier documents of the same linguistic type and in the same script survive in the valley of the Orkhon in Outer Ungolia and date from the second/eighth century. These consist of inscriptions in two steles in honour of two princes of the Turkish dynasty of the Eastern Kok Turk State, and a third erected in honour of its old minister. The history of the Eastern Kok Turk is here related in a semi-legendary and artistic way. Other inscriptions in the same script, large and small, are known in Mongolia, Siberia, and Western Turkestan. Manuscripts too, belonging probably to the third/ninth century, have been found. The language of the Turkish runes is characterized by a certain archaism in its phonetics, morphology, and vocabulary.

From the second/eighth century onwards the Uygur Turks became acquainted with Manichaeism, Buddhism, and Syrian (especially Nestorian) Christianity in Northern China and East Turkestan and developed a high culture within the framework of Far Eastern civilization which lasted until the seventh/13th century. The surviving Uygur manuscript and xylographic literature is very extensive and proves a high cultural activity in the fields of religion, philosophy, and other sciences. The script used for these literary works was mainly the Uygur alphabet, derived from the Soghdian script. In addition to the Uygur alphabet, however, these Turks used, besides the ancient Turkish runes, the Manichaen, Syraic, and Brahmi runes.

The Uygur alphabet remained in use until the 12th/18th century among the Turks of China who did not adopt Islam. The conversion to Islam (from the fourth/tenth century onwards) of the Turks of Central Asia was followed by the adoption of the Arabic alphabet. However, the Uygur alphabet remained in use as the Court script. It was given a new lease of life in the Muslim territories by the Mongol conquest, and was used in the seventh/13th to the ninth/15th centuries among the Golden Horde and the Timurids for the Kipchak and Chaghata’i languages. As late as the early tenth/16th century there were still in the Imperial Chancellery in the Istanbul scribes skilled in writing the Uygur script.

The Uygur Turkish or, to use a more suitable term, the old Turkish literary language (for the civilization that used it was wider than the geographical or historical limits of the Uygur State) shows, broadly speaking, the same dialectical peculiarities as the Kot Turkish monuments. The few dialectical divergences are obviously in the main due to the passage of time and to influence from the outside.[1]

The conversion to Islam of the Turks of Central Asia began in the fourth/tenth century. Throughout history the Turks proved to be devoted Muslims and zealous defenders and promoters of Islam.

Founded on the literary Uygur of the pre-Islamic period, there developed in the fifth/11th century under the Karakhanids, converts to Islam, the Muslim Turkish literary language of East Turkestan written probably from the first in the Arabic alphabet. The best known documents in this language are two didactic poems, the *Qutadhghu Bilig* (The Science of Happiness), composed by Yusuf Khas Hajib, and the *'Atabat al-Haqa'iq* (The Threshold of Facts), composed by Adib Ahmad. There is, further, a translation of the Qur'an. Besides these works there is another dating from the same century, the *Diwan-o Lughat al-Turk* of Mahmud al-Kashghari composed in Baghdad in Arabic in order to acquaint the Arabs with the Turkish world. It is a very valuable source for the investigation of the various Turkish tribes, dialects, folk literature, customs, culture, etc. of this time.[2]

Islam was established in the fourth/tenth century in the Bulghar kingdom of Kama also. But data are lacking to enable us to decide if there also existed any literature. In any case Bughar elements are found in the sepulchral inscriptions of the eighth/14th century in the Volga region.[3]

The development of literary Turkish in central Asia went on without interruption, but its centres changed from time to time.

The absence of early manuscripts prevents us from giving a definite name to the language of the *Hikmats* (theological didactic poems) of Ahmad Yasavi, the founder of Turkish mysticism, who lived in the sixth/12th century in West Turkestan.

In the seventh/13th century the various literary dialects of the Muslim Turkish world were not yet clearly differentiated from one another. The formation of the Mongol Empire, which embraced almost the whole Arabic world of the period, created for a time an atmosphere favourable to the development of uniform language for a considerable section of the Muslim Turkish peoples. At first Turkish literary activity under the Saljuqs in Asia Minor was to some degree bound up with that of Central Asia and Eastern Europe. The seventh/13th century, however, is an epoch of political agitations in Asia Minor and Eastern Europe. It is, therefore, only in the next century that literary works are mainly to be found.[4]

Literary activity on the northern shores of the Black Sea, in Khwarizm which included the mouth of the Sir Darya, in the Capital Saray, and in the Crimea attained a considerable development by the beginning of the eighth/14th century but no uniform literary language developed. The elements of the literary language of the Karakhanid period were combined with those of the local spoken dialects. In Syria, Egypt, and Persia under Turkish or Turkicized rulers there grew an interest in Turkish. Thus, we find a series of grammar books and lexicons in Arabic from the sixth/13th century until the beginning the tenth/16th century. They all deal with the Kipchak but contain elements from other Turkish dialects in varying degrees.

The prose work *Qisas al-Anbiya'* (Stories of the Prophets), with passages in verse written by N. Rabghuzi, finished in 710/1310, although lacking aesthetic value, is of great literary importance. Another religious work in verse is the *Mu'in al-Murid* of Sheikh Sharif Khuwaja (713/1313). The very attractive

romance in verse, *Khusraw wa Shirin* of the poet Qutb (742 – 743/1341 –1342), although based on the corresponding Persian work of Nizami, has nevertheless many original passages. Khwarizimi's poem *Mahabbatnamah* (The Book of Love), composed in 754/1353, is another work of high literary merit. Seif–i Saray's translation of *Gulistan* (The Rose Garden) that appeared in 782/1380 is another prose and verse book of high literary value. The religious work *Nahj al–Faradis* (Way to the Paradise) of Mahmud b. 'Ali (716/1316) is, properly speaking, a "40–Hadith" book in simple prose with no aesthetic aims. Finally, it may be mentioned the religious prose work of *Mi'rajnamah* (Book of the Ascension) composed for didactic purposes.

Further, there are other works written in Egypt and Syria which are: a *Siyar* book composed in 784/1382, *Irshad al–Muluk w–al–Salatin* composed by Barka Faqih in 789/1387, *Kitab fi al–Fiqh bi al–Lisan al–Turki*, originating probably from the ninth/15th century, *Kitab fi 'Ilm al–Nashshab wa Kitab fi Riyadat al–Khail*, a book on the art of horsemanship translated from Arabic for soldiers in about 808/1405, *Kitab al–Da'wa*, another book on the art of horsemanship also translated from Arabic in 844/1440.5

We may date to the eighth/14th and ninth/15th centuries the beginning of the development of the different literary languages in different parts of the Muslim Turkish world.

The Chaghata'i language and literature which developed under the Timurids, the descendants of the second son of Chingiz Khan, represent the most brilliant phase of the development of Central Asiatic Turkish literature. Names are known of a few Turkish poets who lived to the first half of the ninth/14th century. Sakkaki was a panegyrist. Another famous poet was Lutfi. To the same period belong the panegyrist Mir Haidar Majdhub (Turkish Tilbe), Amiri, Sayyid, Ahmad Mirza, Gada'i, Yaqini, and 'Ata'i.

In the second half of the century Chaghata'i literature reached its zenith in Mir 'Ali Shir Nawa'i. In his *Diwan* (Book of Poems) as well as in his numerous other verse and prose works he does not merely imitate the Persian poets, as was the case with his predecessors, but knows how to suit the taste of his contemporaries. He has, therefore, enjoyed great popularity right down to the present day all over the Turkish world. Of importance is his *Muhakamat al–Lughatain* (The Contest of Two Languages) in which he endeavours to show that the Turkish language is no less suitable than the Persian for poetical works and intellectual purposes. He is also the first composer of Turkish collection of the biographies of poets. Nawa'i is considered to be one of the greatest personalities and intellectuals in Turkish literature. The prince and patron of Nawa'i, Sultan Hussain Baiqara, was also a poet.

The founder of the Timurid empire in India in the first half of the tenth/16th century, Babur Shah, was also the author of a number of poems, but he is most celebrated for his *Khatirat–i Babuir* (Memoirs of Babur) or *Buburnamah* (Babur Book) very vividly relating his life and expeditions as well as describing the life and topography of India. He is considered the second great personality of Chaghata'i literature.

Minor personalities of the classical period are Hamidi, Muhammad Salih, Shabani, etc.

Under the Uzbeks, who drove the Timurids out of Central Asia and eastern Persia in the second half of

the tenth/16th century, Turkish poets and writers stuck to old Chaghata'i models without producing anything new or original. The historian Abu al-Ghazi Bahadur Khan in the 12th/18th century probably stands alone in endeavouring to avoid in his work Persian and Arabic as well as Chaghata'i Turkish words.

Of importance in Mirza Mehdi Khan's *Sanglakh* (Stony Place), a Turkish Persian dictionary composed in 1174/1760 with its extensive preface on classical Chaghata'i Turkish grammar containing comparisons with Anatolian Turkish.

The same Turkish literary language as was written in the land of the Uzbeks is written to the present day in Chinese Turkestan. Here also Turkish culture has been influenced by Persian.

In the 14th/20th century a new Turkish literature based on the local dialects has been founded under Russian und Kazan Turkish influences. It includes dramatic works among its productions. In accordance with the State policy of the new regime, a special alphabet in Cyrillic letters has been created for the Uzbek language.6

From the fifth/11th century onwards Turkish tribal and military units began to make raids into Asia Minor, so that Anatolia lay totally open to the Turks. Thus, the colonization of Asia Minor and Eastern Europe went on with great success. Thanks to the ability of these Turks to adapt themselves in course of time to the changing circumstances of life, they succeeded in founding on very firm bases a strong and lasting State.

Parallel to the political and social development, Anatolian Turkish literature has had an uninterrupted development from the time of the Saljuqs down the present day. It has, therefore, become the most important and richest branch of all the Turkish literatures and has exercised an influence on the literature of other dialects.

Seventh/13th Century

Already in the seventh/13th century there developed in Anatolia a Turkish literature based mainly on the Oghuz dialect. The well-known Persian mystic Jalal al-Din Rumi and his son Sultan Walad produced some Turkish verses, Ahmad Faqih wrote a fairly long mystic poem, and Shayyad Hamzah left poems of different *genres*.

Yunus Emre was the greatest figure in this century. He is regarded as the best Turkish popular mystic poet. His art is essentially one of the people, i.e. it is Turkish. It was through his mystical verses that there developed a tradition of writing poems in the language of the people and in the popular syllabic metre, which did not lose its power even in the period when Persian influence was at its highest.

Classical profane literature had its first representative in Dahhani. His poems were in an elaborate style and attained a high degree of perfection from the technical point of view.

Another poem of this century was ‘Ali’s *Qassah-i Yusuf* (Story of Joseph), representing linguistically a mixture of Central Asian literary Turkish and the vernacular Oghuz dialect. Moreover, other works of this and even next century had more or less the same peculiar features, and the rather pure Oghuz dialectical features in the manuscripts of works of these centuries are probably to be ascribed to the later copyists.[7]

Eighth/14th Century

The literary development followed the same line in the eighth/14th century. A certain number of feudal princes in Asia Minor lacked Persian or Arabic culture, and this was the reason why the language of the people became important, why books were written in Turkish, and also why a number of Muslim works were translated from Arabic and Persian into Turkish. During this century there developed in Anatolia several cultural centres, such as Quniyah, Nigde, Ladik, Kastamonu, Sinop, Sivas, Kirsehir, Bursa, and Iznik.

Among the leading poets Ahmad Gulshahri should be mentioned for his artistic merit. He put into Turkish the *Mantiq al-Tair* (Speech of Birds) of the Persian poet ‘Attar, expanding it with stories from various sources. We also possess a number of isolated poems of his. Although a mystic, his literary aims were purely artistic.

The great mystic of this century is, however, ‘Ashiq Pasha with his long poem *Gharibnamama* (Book of the Stranger). He is a mere imitator of Jalal al-Din Rumi and Sultan Walad. There also exist a number of detached mystical poems from the pen of ‘Ashiq Pasha, but all are far from showing the lyrical merit of Yunus Emre.

In the second half of the century we find classical mystic poetry attaining high perfection in Nasimi. He is a great poet whose mystic lyrics are most expressive. His style is simple but full of power and harmony. In his *Diwan* we find *tuyughs* a verse-form peculiar to Turkish classical poetry and foreign to Persian literature.

Romantic tales and fables were also taken from Persian literature. Among them is to be mentioned Mas‘ud’s love story in verse, *Suhail wa Naubahar* (two proper names), a translation or rather on expanded adaptation from an unknown Persian work. This story has considerable literary value.

But, with the exception of Nasimi, Ahmadi is the greatest poet of this period. He is the author of the *Iskandarnamah* (Book of Alexander). The subject is taken from Persian sources, but he adds a long section dealing with world history including the Ottoman dynasty. His *Diwan* is more interesting from the artistic point of view. Among his poems there are some which are of local interest.

Further, we must mention Qadi Burhan al-Din who has left a *Diwan* also containing *tuyughs*. His poems have a note of sincerity and passion of their own. He is the first to have attained perfection by the standards of classical rhetoric.

Of the prose works are to be mentioned an anonymous translation of *Kalilah wa Dimnah* and the legendary tales of *Dede Qorqut* mainly about the Muslim–Christian struggle during the Turkish invasion of Anatolila and its vicinity, reflecting vividly the life, customs, and ideals of the Turks of the fifth/11th and sixth/12th centuries.[8]

Ninth/15th Century

In the ninth/15th century Turkish increased in importance as a literary and official language. In the first half of the century there were three great princely families who were patrons of scholars and poets: Karamanoghli at Auniyah, the Jandaroghli at Kastamonu, and the Ottoman Princes in Edirne and Bursa. As in the preceding centuries, the literary activity under them was not confined merely to the translation of Muslim works of a classical character.

In popular religious literature we may mention the *Maulid* (Birth of the Prophet) poem of Sulaiman Chalabi and Ahmad. This fine work has all the qualities of a masterpiece. It has been read by the people, for centuries particularly on the occasion of the religious commemoration of a dead person. In every century many similar poems have been written in imitation of it.

The most important classical poet of this period is Sheikhi. His version of *Khusrau wa Shirin* of the Persian poet Nizami is more than a mere translation. The *Kharnamah* (Story of the Donkey) is a masterpiece of satire. He is also the author of a *Diwan* which contains a considerable amount of panegyrics and love poems. His part in the establishment of classical poetry is great. His influence continued down to the tenth/16th century.

Another great classical poet of the period is Ahmad Pasha. He surpassed his contemporaries in panegyrics and love poems exercising, thus, a great influence on the poets of his time. Next to him in this field is Najati.

A certain number of chronicles in verse belong to this period.

Prose also developed considerably. In this connection we may mention the anonymous commentary on the Qur'an, *Jawahir al-Asdaf* (Gems of Mothers of Pearls), and the more popular book *Qirq Vezir Hikayalari* (The Tales of the Forty Viziers).

But it was mainly artistic prose that was cultivated, its most brilliant representative being Sinan Pasha with his *Tadarru' Namah* (Book of Supplication). His style is artistically elaborated, yet natural and sincere. Other representatives of artistic prose are Sari Kamal, Ahi, Masihi, and Ja'far Chalabi.

As a reaction to this ornate language the first representative of the *turki-i basit* (simple Turkish), Wisali who wrote in *'arud* metres but used exclusively Turkish words deserves to be noted. However, only one couplet of his has come to us.

The writing of history in prose also began to develop. We have many anonymous specimens of Ottoman history. They show us that there existed in the ninth–15th century among the people and especially among the soldiers chronicles which were almost of the nature of epics. The historical works of ‘Ashiq Pashazadah, Oruch Beg, and others do not differ much in point of style from these anonymous chronicles. The works of Tursan Beg, Bayati, and some others, on the other hand, were written rather with the object of displaying a particular style and an extensive literary ability.

A fine specimen of unaffected prose of this period is the treatise by Deli Lutfi, which is one of the oldest works of humour in Turkish literature.9

Tenth/16th Century

In the tenth/16th century the apogee of Ottoman political power is also reflected in the sphere of literature. Literary activity flourished not only in Istanbul, but also in Baghdad, Diyar–i Bakr, Quniyah, Kastamonu, Bursa, Edirne, Yenije–u Vardar, and Uskup. Philological commentaries and lexicographical and grammatical works were produced. Books without number were translated from Arabic and Persian.

The greatest figures in poetry in chronological order are: Dhati, Khayali, Fuduli, and Baqi. Dhati wrote a large number of works in poetry and prose which are unequal in merit. His imagination and new ideas made him very popular. Khayali surpasses Dhati as a poet. His *Diwan* contains all his works. His most original poems are his love poems. Fuduli must be regarded as the greatest lyrical poet of Turkish literature. Although he used the dialect of Adharbaijan, he exercised such an influence in Anatolia that literary historians regard him belonging to the realm of Anatolian literature.

His love poems and love romance *Laila wa Majnun* have secured him a special place in literary history. Love in his works is never entirely profane in character, thanks to mystic inspiration. No other poet except Nawa’i has acquired a like reputation throughout the whole Turkish world. He exercised an influence even on the musician poets of the lover classes. Baqi was undoubtedly the most reputed poet of his time, has fame stretching as far as India. In the expression of sentiment he is below Fuduli, but the musical charm and faultless ease of his poems have given him the reputation of an inimitable master of classicism. His elegy on the death of Sulaiman the Magnificent is a masterpiece of deep sentiment and grief.

At this period Anatolian Turkish poetry attained the highest point in artistic elaboration and rhetoric. It is true that this was in the main an imitation of Persian poetry. But the Anatolian Turkish poets imitated rather the Indo–Persian poetry and went even further in fineness and abstraction. In the next centuries we see this refinement perfected on its own lines.

Poets belonging to different dervish orders composed didactic works, mystic poems and collections of legends of saints, along with translations of Arabic and Persian mystical works.

Prose in this century assumed a heavier and more artificial form. Outdoing the Persian models, the

simplest ideas were expressed by the most complicated images to the detriment of the subject. This lack of taste is found in the greatest stylists of the period: Lami'i, Kamal Pashazadah, Jalalzadah, Faridun Beg, 'Azmi, Qinalizadah, Khuwaja Sa'd al-Din and others. This tendency to artificiality had a much more disastrous effect on prose than on poetry. In very long works, however, it was only the preface that was written in this turgid and clumsy style.

Many literary, historical, religious or moralizing works of the period were in fact written in a simpler language. The same applies to official correspondence and other State documents. In religious works intended for the people every endeavour was made to write as simply as possible. The examples which we possess of the prose of Fuduli and Baqi show an elegant and relatively simple language.

As a reaction to the ornate language, the movement called *turki-i basit* (simple Turkish) has its second well-known exponent in Nazmi of Edirne whose Diwan, though, again, in *'arud* verse, contains only Turkish words. But he has no artistic abilities.

In the field of historical works great progress was made. Besides rhymed chronicles, we find historical works in prose in continuation of the Saljuq tradition. A number of historical works were written in verse. With the exception of the Ottoman history by Hadidi they always deal with a single event or the victories of a single emperor or commander. General histories were composed by ibn Kamal, Jalalzadah, Mustafa Chalabi, Muhi al-Din Jamali, Lutfi Pasha, Khuwaja Sa'd al-Din, and 'Ali. Some of these works are the sources for our knowledge of the social history of this period.

Among historical works those which deal with literary history occupy an important place. The first Ottoman collection of biographies of poets was produced by Shahi Beg on the model of Nawa'i's work. This was followed by the works of Latifi, 'Ashiq Chalabi, 'Ahdi, and Hassan Chalabi. 'Ali also gives important notices of poets in his historical work.

It is in this century that there appeared geographical works and accounts of travels. Some are mere translations. The celebrated *Bahriyyan* (Maritime Work) of Piri Ra'is and *Muhit* (Ocean) and *Mir'at al-Mamalik* (Mirror of lands) of Saidi 'Ali Ra'is are the best works of this type. We have further records of voyages both in verse and in prose.

The first grammar of Anatolian Turkish, planned on the model of Arabic grammars, by Qadri of Pergamon, was also written in this century.

Alongside classical literature we find popular literature increasing in every form. Wondering musician-poets were to be found wherever people congregated, and love songs, heroic tales, elegies, and folk-songs were recited.[10]

11th/17th Century

In the 11th/17th century knowledge of the Ottoman literary language spread among the Muslim lower

classes generally and also through districts to the non-Turksih population or Turks of speaking a non-Ottoman Turkish dialect. The influence of Turkish literature and culture is found as early as the tenth/16th century in the use of Arabic script by the Muslim Hungarians and Croats. There are also found dictionaries of Turkish-Serbian, Turkish-Bosaniak, and Turco-Greek in verse. Istanbul was always the centre to which men of letters and learning flocked from all parts of the Ottoman Empire and from beyond its frontiers.

The classical Turkish poetry of the 11th/17th century was in no respect below the level of the Persian models. The Turkish poets by this time were working on original themes, though the influence of the Persian and Indo-Persian poets was still felt.

Naf'i may be regarded as the greatest master of eulogies (*qusidahs*), on account of the power of his imagination, the richness of his language, and the elevation and harmony of his style. His love poems and his satires (*hajwiyyat*), on the other hand, are less successful.

Another very important classical poet was Nabi who is renowned for his refined didactical poems and descriptions. His verses are still quoted as proverbs. He was also the one who protested against artificial language, saying, "The *ghazal* book is a dictionary."

The greatest figure in romance poems (*mathnawi*) is Nav'izada 'Ata'i who takes his subjects from the life of his time.

The number of religious and mystical works, lives of saints, and didactic works connected with different orders is very great in this century. Poetical forms were often used for them.

Literary prose follows the same lines as in the preceding century. The great stylists like Vaisi, Narkisi Oqchizadah, and others carried affectation of language to still greater lengths. Yet works which were in their days considered to have no literary value are now being greatly appreciated.

As an encyclopaedist, Katib Chalabi's name must be mentioned.

Histories in this century also took the first place among prose works. There are several which have the character of semi-official chronicles. Mainly, though they are translations of general histories of Islam, there are also original works on the same subject, and general and special works and monographs on Ottoman history. The best historians are Katib Chalabi, Pachavi, Na'ima, and Qochi Beg. The verse chronicles are much below the level of those of the tenth/16th century. The most notable are those of Riyadi and Qafzadh Fa'idi.

In the field of geography the most important works are those of Katib Chalabi and Abu Bakr Dimashqi. They use European as well as Muslim sources. The *Sayathatnamah* (Voyage Book) of Avliya Chalabi is important as history of all aspect of social life.

The great popularity of the literature of the people continued in this century in all classes of society. The

musician–poets became very numerous. We find them in the military classes and in the religious orders. The most important of them are Karaja Oghlan Gavhari and ‘Ashiq ‘Umar. The influence of this popular literature is felt even among the upper classes.[11]

12th/18th Century

Literature and culture continued in the 12th/18th century to follow the same lines as in the preceding centuries. There was a fast output in prose and poetry, while the cultural links with Persia and Transoxiana continued. But the tendency to a more individual development gained in strength. Endeavour was made to simplify the language.

Among the poets Nadim in particular acquired a great reputation. By his original themes, rich imagination, sparkling wit, and the harmonious language he surpassed his predecessors and contemporaries. He was the poet who brought much local colour to Turkish literature. He was famous with his *sharqis*, another verse–form peculiar to Turkish classical poetry and foreign to Persian literature. One of his poems he composed in the Turkish syllabic metre and the national form *turku*.

Among the great poets of this century special mention must be made of Raghib Pasha, the last great poet of the classical period.

The poets of this century practiced all forms of poetry, but special attention was devoted to *genres* characteristic of an epoch of decadence. On the other hand, true religious inspiration still contained. The last masterpiece of romantic poetry was Sheikh Ghalib’s *Husn–o ‘Ishq* (Beauty and Love) with its mystical inspiration and very fine style.

Literary prose tended to become gradually simpler, although imitations of the old artificial style were still found. A well–known stylist, ‘Uthmanzadah Ta’ib openly denounced exaggerated artificiality in prose. Historical works occupied the first place, but they could not be compared to those of the preceding century.

The political and military decline of the Ottoman Empire stimulated the writing of a large number of memoirs investigating its causes. The most remarkable of these is that of Qoja Segban Bashi.

From the point of view of geography we may note a number of important descriptions by ambassadors of which that of France by Yirmi Sekiz Muhammad Chalabi is a typical and very interesting example. We may also notice a number of translations of European works on geography.

The writings celebrating the splendid festivals held by the Sultans are important sources for sociological research.

The collections of biographies of poets are even more numerous than in the preceding century.

Popular literature continued to enjoy the same popularity among all classes of society. The works of the

musician poets were also well known. Taste for such literature penetrated more into the upper classes.

In this century Ibrahim Mutafarriqah inaugurated printing in Turkish script, but for several reasons printing remained confined to a very restricted sphere throughout the century and did not exercise any particular influence on intellectual and artistic life.[12]

13th/19th Century

At the beginning of the 13th/19th century Ottoman literature sank to a very low level which continued until the period of political reform. It was only natural that the old literary tradition could not disappear at one stroke.

The prose of the period before the political reforms was not of much value, although its production was not less in quantity than that of the preceding centuries. The historical work by Mutarcim ‘Asim was remarkable for its style and critical analysis. He used even simpler language in his translation of *Burhan-i Qafi‘* (The Definite Proof) and the *Qamus* (Lexicon). Lastly, mention must be made of the celebrated poet and stylist ‘Akif Pasha who, on account of several poems written in the popular metre and some works in simple prose, could be regarded as the first to have spread literary innovations.

We also had representatives of popular literature. The best known musician-poets were Dertli, Dhihni and Amrah.

B. Development of Turkish Grammar and Lexicography

1. Turkish is an agglutinative language. The *root* which is either verbal or nominal and which (except in the case of certain pronouns) is never inflected always appears at the beginning of the word. Verbal forms are built from the verb-stem, which may be a simple *root* or a root modified by formative suffixes. The verb-stem is followed by suffixes indicating aspect and tense (“voice” and “negation” being shown by aspect suffixes), to produce the tense-stem which, without further suffixation, expresses the third person singular; other persons are indicated by the addition of a personal suffix. The resultant word is a unit as regards stress, intonation, and sound harmony, i.e. assimilation of sounds tending to conform the sounds to the suffixes to the root in general. Phonetic changes in the root or suffixes do not imply semantic modifications.

Nominal forms again are built out of the noun-stem, which may be a simple root or a root modified by formative suffixes.

Prefixes and infixes do not exist in Turkish.

The syntax of the language is based essentially on the following principle. The governing parts of grammatical statement or of a group of statements follow the parts governed. Hence the principal part of the statement or of a group of statements, i.e. the finite verb or predicate, is usually placed at the end,

the completed parts follow the complement, the qualified elements (nominal or verbal) are put after their qualifiers (adjectival or adverbial), and the principal statement follows the sub-ordinate.

Turkish in its original form did not include conjunctions. The only sub-ordinate clause which is attested from the earliest documents onwards is the conditional.

The characteristics of the Turkish language outlined above are to be found in the earliest surviving Turkish documents, which date from the first/seventh century.

2. This "pure" language, however, underwent a considerable change when pagan Turks came into contact with the Far Eastern civilizations and religions. The Turkish literary output of the period before the adoption of Islam was mainly translations of the scriptures of various religions. Such translations of sacred texts had to be as literal as possible. Of course, it is no wonder that under the influence of the non-Turkish structures of the languages so translated, this literary dialect, while preserving its native participial and gerundial constructions, acquired new types of sub-ordinate clauses, partly with defective constructions and developed conjunctions formed from Turkish roots. In the field of vocabulary also we find technical expressions, borrowed from the more developed languages of the Far East. This does not, however, mean that such borrowings were numerous. On the contrary, a great number of expressions were mere Turkish translations from these languages.

3. As to linguistic peculiarities of the first Islamic literary dialect in Central Asia, it differed but slightly from Old Turkish. Religious terms markedly connected with the Far Eastern religious were no more to be found. In their place, we find Islamic terminology. But this latter was not as widespread as one would expect or find in later literary works. Instead Far Eastern terms or Turkish calques from them were still common. The development in the direction of one analytical sentence structure was less pronounced. Though sub-ordinate clauses of the Indo-European and Semitic types began to develop in general, the Turkish sentence with its participial and gerundial forms still prevailed. Nevertheless, new conjunctions were created out of Turkish words or borrowed from Arabic and Persian, and these to a great extent encouraged the development of new Turkish sub-ordinate clauses.

On the other hand, popular words of the Karakhanidian period show very little foreign influence. Both in syntax and lexicography, this influence was restricted to the minimum. In this respect the popular literary products of the earliest Turkish Islamic literature resembled the runic inscriptions.

4. In Khwarizmain period, Arabic and Persian exercised an increasing influence on Turkish syntax. Both in verse and in prose, the basically fixed Turkish word-order became more flexible and the rich stock of terminations that henceforth developed in the language prevented ambiguity and gave it greater clarity. The borrowings from the two main Islamic culture languages, Arabic and Persian, increased. Vocabulary was further enriched by the use of Arabic and Persian loan-words, though the Far Eastern loan-words were still common, and inversion, particularly in verse, was now used to a greater extent. Until the ninth/15th century, Anatolian Turkish also reveals the same characteristics.

5. During the classical period of Ottoman literature, the syntactical influence of Persian in the construction of sentences did not increase. Rather, it diminished in the course of time.

The old Turkish type of sentence with only a single finite verb, but using many participial and gerundial forms was particularly in use in Ottoman prose. This made the formation of very long sentences possible. Inversion, however, particularly in verse, was greatly practiced. Persian and Arabic loan words and grammatical forms became more numerous and Far Eastern loan words were totally forgotten.

6. In modern Turkish, the syntactical influence of Persian in sentence constructions has left few traces. On the other hand, modern writers have drawn fully on the resources of popular speech; the language has thus been greatly enriched and rendered much more expressive, thanks to the harmonious combination of the synthetic structure of the old language with the freer construction and more vivid turns of expression of everyday spoken Turkish.

New constructions of sub-ordinate clauses with conditional or temporal force, formed from a finite verb followed by the interrogative ending, have become meaningless.

In the Turkish vocabulary, Persian and Arabic loan words have become much less numerous, giving place to Turkish words, some of which have even been invented. Loan words from the European languages, mainly at first from Italian then from French, are to be noticed.

7. Thus, we see that in the process of evolution, owing partly at least to the influence of languages of other structural types, both Eastern and Western, Turkish has developed conjunctions, other types of sub-ordinate clauses, and a freer word order in the sentence.

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Part 2: Language and Literature

Chapter 55: Architecture

A. The First Three Centuries of Muslim Architecture

Arabia, at the rise of Islam, does not appear to have possessed anything worthy of the name of architecture. Only a small proportion of the population was settled and lived in dwellings which were scarcely more than hovels. Those who lived in mud-brick houses were called *ahl al-madar*, and the Bedouin, form their tents of camel's hair cloth, *ahl al-wabar*.

The sanctuary at Mecca, at the time of Prophet Muhammad, merely consisted of a small roofless enclosure, oblong in shape, formed by four walls a little higher than a man, built of rough stones laid dry. Within this enclosure was the sacred well of Zamzam.

When Prophet Muhammad, as a result of the hostility of the unbelieving Meccans, migrated to Medina, he built a house for himself and his family. It consisted of an enclosure about 100 cubits square of mud-bricks, with a portico on the south side made of palm trunks used as columns to support a roof of palm leaves and mud. Against the outer side of the east wall were built small huts (*hujarat*) for the Prophet's wives, all opening into the courtyard. We have the description of these huts, preserved by ibn Sa'd,[1] on the authority of a man named 'Abd Allah ibn Yazid who saw them just before they were demolished by order of al-Walid. "There were four houses of mud-bricks, with apartments partitioned off by palm branches, and five houses made of palm branches plastered with mud and not divided into rooms. Over the doors were curtains of black hair-cloth. Each curtain measured 3 x 3 cubits. One could reach the roof with the hand." Such was the house of the leader of the community.

The Dome of the Rock of Jerusalem, the oldest existing monument of Muslim architecture, was built by the Caliph 'Abd al-Malik and completed in 72/691. It was an annular building and consisted of a wooden dome, set on a high drum, pierced by 16 windows and resting on four piers and 12 columns, placed in a circle. This circle of supports are placed in the centre of a large octagon, averaging about 20.59 m a side, formed by eight walls, each pierced by five windows in their upper half. There was a door on each of the four sides of the octagon.

The space between the circle and the octagon being too great to be conveniently spanned by single beams, an intermediate octagon was placed between the two to provide the necessary support for the roof. The two concentric ambulatories thus formed were intended for the performance of the *tawf*. The

piers and columns were so planned that, instead of concealing one another, they permit from almost any position, a view of right across the building. A twist of about two and half degrees was given to the central ring of supports, with the result that an observer entering any door can see not only the central column in front of him but also the column on the far side.

The exterior was always panelled with marble for half its height, as it is today, but the upper part was originally covered with glass mosaic (*fusaifisa*) like the inner arcades. This was replaced by the present coating of faience by Sultan Sulaiman in 959/1552. The harmony of its proportions and the richness of its decoration make the Dome of the Rock one of the most beautiful buildings in the world.

The Great Mosque of Damascus

'Abd al-Malik died in 86/705 and was succeeded by his son al-Walid, who immediately began the construction of the Great Mosque of Damascus. A curious situation had prevailed here since the conquest. A great sanctuary of a Syrian god existed here, consisting of a *temenos*, or sacred enclosure, measuring 100 m from the north to south and 150 m from the east to the west, set in an outer enclosure over 300 m square. Within the *temenos* was a temple.

In the fourth century Christianity became the State religion and Theodosius (379 – 395 A.D.) converted the temple into a church.[2] After the Arab conquest, the *temenos* was divided between Muslims and Christians. Ibn Shakir says that they both "entered by the same doorway, placed on the south side where is now the great *mihrab*; then the Christians turned to the west towards their church (i.e. the converted temple), and the Muslims to the right to reach their mosque, presumably under the southern colonnade of the *temenos* where is now the *"mihrab* of the Companions of the Prophet."

As for the corner towers, ibn al-Faqih (p. 108) says, "The minarets (*mi'dhanah*) which are in the Damascus Mosque were originally watch towers in the Greek days. . . When al-Walid turned the whole area into a mosque, he left these in their old condition." Mas'udi[3] says, "Then came Christianity and it became a church, then came Islam and it became a mosque. Al-Walid built it solidly and the *sawami'* (the four corner towers) were not changed. They serve for the call to prayers to the present day." This state of affairs lasted until al-Walid, after bargaining with the Christians, demolished everything except the outer walls and the corner towers and built the present mosque.

The mosque had a court (*sahn*), an oblong rectangle, surrounded on three sides by a portico. On the South side was the sanctuary nearly 136 m in length and a litter over 37 m in depth, formed by three arcades running parallel to the south wall. A broad transept, running from north to south, cut these arcades into two nearly equally halves, each half consisting of 11 arches. Above these arcades was a second tier of small arches, there being two of these small arches to every one of the main arches below. The arched openings were filled with stucco lattices, and must be regarded as windows. The interior was adequately lit, even when the doors of the main arches next to the *sahn* were closed.

The decoration consisted of marble panelling (some parts of the original panelling exist next to the east entrance) above which ran a golden *karmah* or vine-scroll frieze, and above that was glass mosaic (*fusaifisa*) right up to the ceiling. A considerable amount has survived the three fires of 462/1069, 804/1401, and 1311/1893, and may still be seen under the west portico (over 34 m in length and nearly seven metres high), where the famous panorama of the Barada (the river of Damascus) is in full view. When intact the surface of the *fusaifisa* must have been greater than in any building in existence! The Great Mosque of Damascus was rightly regarded by medieval Muslims as one of the Seven Wonders of the World. Al-Walid also enlarged and rebuilt the great Mosque of Medina in 89/708 wherein the concave *mihrab* appeared for the first time.

Another building due to al-Walid was the audience hall and *hammam*, known today as Qusair 'Amrah, in Transjordan. It consists of an audience hall about ten metres square, with two slightly pointed transverse arches supporting three tunnel-vaults. There is a vaulted recess on the side opposite the entrance, with a small vaulted room on either side of it. A door on the east side gives access to the *hammam*, which consists of three small rooms successively covered by a tunnel vault, a cross vault, and a dome. The latter was the *calidarium*, or hot chamber, and under the floor are hypocausts exactly as in a Roman bath.

But the most remarkable of all are the paintings which cover the walls, mostly scenes from daily life, a hunting scene, and figures symbolizing history, poetry, and philosophy with the words in Greek above their heads. The dome of the *calidarium* was painted to represent the vault of heaven, with the Great Bear, the Little Bear, the signs of the Zodiac, etc. But most important of all was the painting of the enemies of Islam defeated by the Umayyads, with their names written above them in Greek and Arabic: Aaisar (the Byzantine Emperor), Rodorik (the Visigothic King of Spain), Chosroes, Negus (the King of Abyssinia), and two more names which have been obliterated.

Painting, contrary to the popular idea, is not forbidden by any passage in the Qur'an, and hostility to it took proper theological form only towards the end of the second/eighth century.[4]

To sum up, the monuments of Umayyad architecture are really magnificent structures of cut stone with arcades resting on marble columns, splendidly decorated internally with marble panelling and mosaic (*fusaifisa*). The mosques are nearly always covered with a gable roof. The minarets were tall, square towers, derived from the church towers of pre-Muslim Syria, and the triple aisled sanctuaries were due to the same influence. Umayyad monuments exhibit a mixture of influences, Syria occupying first place and Persian second, while Egyptian influence is definitely demonstrable at the end of this period at Mushatta.

Umayyad architecture employed the following devices: the semi-circular, the horse-shoe and the pointed arch, flat arches or lintels with a semi-circular relieving arch above, joggled voussoirs, tunnel-vaults in stone and brick, wooden domes, and stone domes on true spherical-triangle pendentives. The squinch does not appear to have been employed. But we know from the descriptions of early authors

that a type of mosque which prevailed in Iraq had walls of bricks (sometimes of mud-bricks) and its flat timber roof rested directly on the columns without the intermediary of arches. Here we have a direct link between the ancient Persian audience-hall (*apadana*) and the flat-roofed portico (*talar*) of more recent Persian palaces.

At about this time the Aqsa Mosque at Jerusalem was partly rebuilt by the Caliph al-Mahdi. Recent research enables us to affirm that it then consisted of a central aisle, 11.50 m wide, with seven aisles to the right and seven to the left, each about 6.15 metres in width, all covered by gable roofs and all *perpendicular* to the *qiblah* wall. There was a great wooden dome at the end of the central aisle. On the north side was a large central door with seven smaller ones right and left, and 11 "unornamented" ones on the eastern side.

This mosque had a great influence on the Great Mosque of Cordova built in 170/786 – 787 by ʻAbd al-Rahman I, the last survivor of the Umayyad family. It was added to on three occasions but this earliest part still exists, as at Jerusalem, the aisles, of which there are 11, all run perpendicular to the back wall, they are all covered by parallel gable roofs, and the central one is wider than the rest. The influence of Syria in Spain at this time is not surprising, for Spain was full of Syrian refugees.

Another building of this period of great importance in the history of architecture is the Cistern of Ramlah in Palestine; it consists of a subterranean excavation eight metres deep divided into six aisles by five arcades of four arches each, all of which are pointed and appear to be struck from two centres, varying from one-seventh to one-fifth in span apart. And there can be no doubt about the date, for on the plaster of the vault is a Kufic inscription of Dhu al-Hijjah 172/May 789. It is, therefore, centuries earlier than the earliest pointed arches in Europe.

The Arabs first set foot on the North African soil as conquerors in 19/640 under the courageous command of ʻAmr ibn al-ʻAs. The whole of Egypt was occupied within less than two years and ibn al-ʻAs made the military camp at al-Fustat, a site south of modern Cairo. Al-Fustat continued to be the capital of Egypt until the Fatimids in 360/969 founded Cairo. ʻAmr constructed a simple mosque at al-Fustat, the first in Africa, in 20 – 21/641 – 642. Enlarged and improved under the Umayyads, this structure, in the course of time, grew into the celebrated mosque of al-Fustat.

The mosque of ʻAmr was first enlarged at the order of Caliph Muʻawiyah in 53/6735 and four minarets were introduced in any Muslim structure.

The next major enlargement of this mosque took place during the reign of Caliph al-Mamun in 212/827 at the hands of ʻAbd Allah ibn Tahir, Governor of Egypt. Since then it has been repaired and rebuilt more than once.

The mosque of ʻAmr is now a big enclosure. The side walls were each pierced by 22 windows lighting the 22 aisles. There were three *mihrubs* and seven arcades in the sanctuary, each arcade consisted on 19 arches on 20 columns. The arcades were all braced with decorated tie-beams.

We must now speak of the great mosque of Susa on the gulf of Gabes which the inscription of its wall tells, was built by Abu al-'Abbas ibn al-Aghlab in 236/850 – 51. It consists of a perfectly regular rectangle measuring 49.39 m x 57.16 m internally, and irregular annexes to east and west. The *sahn*, measuring roughly 41 m x 22.25 m is surrounded by low arcades of slightly horse-shoe form, resting on squat T-shaped piers. There are 11 arches to the north and south and sit to the east and west. These arches are of horse-shoe form, the maximum span of each being equal to the space between the piers below. The sanctuary consists of 13 aisles, formed by 12 arcades of six arches running from the north to the south, each divided into six bays by other arcades running from the east to the west.

Internally, it is perfectly plain except for a splay-face moulding, immediately above which is a fine inscription frieze in simple undecorated Kufic, the maximum height of the characters being 28 m. The frieze in which they are carved curves forward slightly to compensate for the fore-shortening and thus help the observer at ground level. This is the earliest known example of this treatment which passed into Egypt with the Fatimids and appears in the Mosque of al-Hakim, 380 – 403/990-1013.

The Great Mosque of Samarra was built by the Caliph al-Mutawakkil; the work began in 234/848 – 49 and finished in Ramadan 237/February – March 852. It was the largest mosque ever built, for its outer walls form an immense rectangle of kiln-baked bricks measuring roughly 240 m deep internally by 156 m wide (proportion approximately as 3:2); its area, therefore, is nearly 38,000 metres square. Only the enclosing walls have been preserved. The mosque proper as surrounded by an outer enclosure, or *ziyadah*, on the east, north, and west sides and air photographs show that the great rectangle thus formed stood in a still greater enclosure measuring 376 m x 444 m. The minaret, the famous Malwiyah, stand free at a distance of 27 ½ m from the north wall of the mosque.

There is a socle three metres high on which rests a spiral tower with a ramp about 2.30 m wide, which winds round in a counter-clockwise direction until it has made five complete turns. The rise for each turn is 6.10 m but as the length of each turn is less than the previous one it follows that the slope inevitably becomes steeper and steeper. At the summit of this spiral part is a cylindrical storey, decorated with eight recesses, each set in a shallow frame. The southern niche frames a doorway at which the ramp ends; it opens onto a steep staircase, at first straight then spiral, leading to the top platform, which is 50 metres above the socle. From eight holes to be seen here Herzfeld concluded that there was probably a little pavilion on wooden columns. A few years later, between 246 – 247/860 – 861, another immense mosque was built by the same Caliph at Abu Dulaf to the north of Samarra.

Ten years later, important works were carried out in the Great Mosque of Qairawan by Abu Ibrahim Ahmad, who reduced the width of the central aisles by about 1.20 metres by constructing two new arcades in contact with the old ones. The arches of these arcades are pointed horse-shoe arches instead of sound horse-shoe arches like those with which they are in contact. He also built three free-standing arches and one wall-arch of the same type to carry a fluted dome in front of the *mihrab*. They rise to a height of 9.15 metres and the square thus formed is terminated above the cornice, its top edge

being 10.83 meters from the ground. On it rests the octagonal zone of transition, 2.15 metres in height, which is formed by eight semi-circular arches springing from colonnetes resting on little corbels inserted in the cornice just mentioned.

The dome, which is 5.80 metres in diameter, has 24 ribs, each springing from a little corbel, between the ribs are concave segments, 30 cm deep at the base and diminishing to nothing at the apex. The whole composition is charming. Externally, the dome resembles a cantaloupe melon, with 25 convex ribs (corresponding to the 24 concave segments) which taper to nothing at the apex. Abu Ibrahim's work was carried out in 248/862. He also lined the *mihrab* with a series of very beautiful carved marble panels assembled in four tiers of seven panels each, the total height being 2.70 m. He also decorated the face of the *mihrab* and the wall surrounding it with lustre tiles about 21 cm square. The marble panels and the tiles were imported by him from Iraq and the latter constitute the oldest examples of lustre pottery of certain date.

It was during the reign of Ahmad ibn Tulun (254 – 270/868 – 884), the first Muslim sovereign of independent Egypt, which Muslim architecture properly developed in the Nile Valley. He was son of a Turkish slave and was born and brought up in Samarra. He proved to be a great administrator and a great builder. Al-Qata'i, the new quarter of al-Fustat, was adorned as there was a vast ground in front of the palace where polo matches took place. The palace had nine gates and one of them was called Bab al-Salat (Gate of Prayer). He also built a hospital at an expense of 60,000 dinars.

But his greatest work, which still stands, is his famous mosque; it cost him 120,000 dinars.[6] It exhibits strong influence at the Samarra school as ibn Tulkun himself came from Samarra and his architects and craftsmen too were mostly Iraqis.[7] This Iraqi impact is clearly visible in the piers of the mosque and in its ornamental work in wood and stucco.

The mosque of ibn Tulun is built on the outcrop of a rock and impresses the visitor by its great size and the noble simplicity of its plan. It consists of a *sahn* 302 square feet surrounded by *riwaqs*, five aisles deep. There are 13 pointed arches on each side. The sanctuary is formed by five arcades 17 arches each. The arches are surrounded by a continuous band of ornament. Above runs a broad frieze of stucco rosettes each in an octagonal frame.

The varieties of designs some composed of straight lines, others triangular, and still others circular and interlacing, are extra-ordinary. The windows form one of the most beautiful features of the mosque. They are 128 in number. Their pattern is a mesh of equilateral triangles by grouping six of which we can form hexagons. The minaret, which is built of hive-stone, is almost a copy of the Malwiyah of Samarra. About 1/17th of the Qur'an is inscribed in beautiful Kufic characters on the wooden frieze round the inside of the building just below the flat timbered roof.[8]

Tulunid Egypt could also boast of a very unusual structure; it was the palace of Ahmad ibn Tulun's son, Khumarawaih (271 – 282/884 – 895). The walls of its golden hall were covered with gold and decorated

with bas-reliefs of himself, his wives, and his songstresses.[9] These life-size figures were carved in wood.

Under the ‘Abbasids the Hellenistic influence of Syria was replaced by the surviving influence of Sassanian Persia, which profoundly modified the art and architecture, and this gave birth to the art of Samarra, the influence of which extended to Egypt under ibn Tulun and even Nishapur and Bahrain. In palace architecture there was a vast difference between one of the Umayyads and that of the ‘Abbasids, partly due to the adoption of Persian ideas of royalty which almost deified the king; hence, elaborate throne-rooms, generally domed, for private audience, preceded by a vaulted *liwan* (or four radiating *liwans*) for public audience. The *baits* also were different, following the type of Qasr-i Shirin and not the Syrian type of Mushatta and Qasr al-Tuba.

The scale was immense and axial planning was a marked feature. But all are built of brick and a great part of the basest of materials – mud-brick – hidden by thick coats of stucco. A new type of pointed arch appears – the four centred arch. The earliest existing squinches in Islam date from this period. An important innovation was the introduction of lustre tiles, the earliest examples being those brought to Qairawan from Iraq in 248/862. Bands of inscription were usually made to stand out on a blue background. But the wide-spread influence of the ‘Abbasid art did not extend to Spain where the Umayyad art, brought thither by Syrian refugees, was still full of life.

B. Muslim Architecture in Later Centuries

1. Muslim Architecture in North Africa

The Fatimids

When the Fatimids came to power in Egypt in 358/969, they built a new city north of al-Fustat and called it al-Qahirha (Cairo). Since then Cairo has always been the capital of Egypt. The great mosque of al-Azhar was also built almost at the same time (361/972). The original sections of al-Azhar, which still exist, are built in brick and have pointed arches. The minaret is of the heavy square type. The next Fatimid mosque, completed by al-Hakim in 403/1012, follows the al-Azhar plan and has a cupola of brickwork supported on an octagonal drum above the prayer niche. The triumph of stone over brick, initiated by al-Hakim, was not affected until the beginning of the sixth/12th century. The first appearance of corbelled niche is found in the mosque of al-Qamar (519/1125). This pillared mosque displays bold designs and austere Kufic inscriptions.

The grandeur of Fatimid architecture may well be imagined from the testimony of the massive gates of which three are extant in Cairo: Bab Zawilah, Bab al-Nasr, and Bab al-Futuh.[10]

The Mamluks

While the Tulunid and Fatimid architecture in Egypt was inspired by Iraq and Iran respectively, the

Mumluk monuments were influenced by the Ayyubi School of Syria. The Mumluks produced some of the most exquisite structures. Made of fine and durable stone, these monuments are distinguished for their strength and solidity. Their simple decorative motif assumes infinite grace.

Mamluk monuments may be roughly divided into three categories: the *madrasah*–mosque monuments, the citadels, and the hospitals, besides other public works like canals and aqueducts. The *madrasah* type was first introduced in Egypt by Sultan Salah al–Din Ayyubi of the Crusade fame. Although none of these institutions exist today, their impact may easily be noticed in the collegiate mosque of Sultan al–Hassan (748 – 63/1347 – 61).

One of the early monuments of the Mamluk period is the Great Mosque of Baibars (658 – 676/1260 – 1277). It was built in 668/1269. Napoleon used it as a fort when he was in Egypt. Al–Malik al–Mansur Saif al–Din Qalawun (678 – 689/1279 – 1290), a great builder, erected a hospital connected with a *madrasah* and a mausoleum with its remarkable arabesque tracery and fine marble mosaic. This hospital, known as al–Maristan al–Mansuri, was completed with the mosque and the attached school in 683/1284. It had special wards for segregating patients of various diseases and contained laboratories, dispensaries, baths, kitchens and store–rooms.11

His son and successor al–Nasir (692 – 740/1293 – 1340) surpassed him in the construction of public works. He dug a canal connecting Alexandria with the Nile employing 100, 000 men, built an aqueduct connecting his far–famed citadel al–Qasar al–Ablaq (the place of varied colour) at Cairo with the river, founded 30 mosques at various places in his kingdom, and provided for the public use drinking fountains (*sabils*), baths, and schools. Inside his citadel he built a mosque the material for which was brought from ‘Akka.

Another noteworthy builder among the Mamluks was al–Nasir’s son, Sultan Hassan, whose collegiate mosque is the most splendid example of Mamluk architecture. It consists of a square *sahn* (central court) which is flanked by four *liwans* (halls) forming the four arms of a cross. Perhaps these unique cruciforms were each meant for the four major schools of Muslim theology. Behind the *qiblah* wall of this mosque is the mausoleum of Sultan Hassan which was built in 767/1363. It is surmounted by a large dome made of bricks. The pendentives are in wood. In its general appearance it seems to have been inspired by the Sultaniyyah tomb of Sultan Khuda Bandah (d. 706/1306).

During the Mamluk period the use of brick was abandoned in minaret construction in favour of stone. The cruciform plan of school–mosque structure was perfected. Domes, renowned for their lightness, beauty of outline, and excessively rich decoration, were constructed. Stones of different colours in alternate courses (*ablaq*) were utilized for striped masonry and decorations. Geometrical arabesques and Kufic letterings were also profusely used.

Although the last hundred years of the Mamluk rule are a period of decline, several impressive monuments of that period have escaped the ravages of time and turmoil. For instance, the mosque and

mausoleum of Barquq (785 – 800/383 – 1398), the Mosque of Qa'it Bay (873 – 900/1468 – 1495) and the mosque of al-Ghauri (906 – 922/1500 – 1516). The Mosque of Qa'it Bay consists of a mosque proper, a tomb, a fountain, and a school. It is made of red and white stone and the dome is decorated with a charming network of foliage and rosette. Elaborate arabesque ornamentation does not seem to have affected its traditional vigour and virile elegance.

Qairawin

During the reign of Caliph Mu'awiyah, his famous general, 'Uqbah ibn Nafi' invaded the Magrib (the land west of Egypt) and founded the famous military city of al-Qairawan (49/670) south of Tunis. 'Uqbah built the mosque and his headquarters in the centre and grouped dwellings around them just as it had been done at other military towns of al-Kufah, Basrah, and al-Fustat.[12] The famous mosque of Qairawan, the fourth most sacred Muslim sanctuary in the world, was built several times by the successors of 'Uqbah and finally by the Aghlabid ruler, Ziadat Allah I (202 – 223/817 – 838).

The Qairawan mosque is a big oblong enclosure. The *sahn*, trapezoidal in shape is entirely paved with marble. The arcades on the north side rest on columns, but the others rest on rectangular piers with two friezes with standing columns attached to their front face. The sanctuary, like the Cordova mosque sanctuary, is a hall of columns. It is divided into 17 aisles by 16 arcades. Each of these arcades consists of seven arches. They are all of the round horse-shoe type. The *mihrab* as well as the surrounding structure from top to bottom is constructed of white marble covered with carvings. Part of this decoration consists of inscriptions; the rest forms arabesques of various patterns.

Round the *mihrab* are exquisite columns, also made of marble. There is a fine pair of orange-red marble columns situated in front of the *mihrab* which is actually a recess, horse-shoe in plan. It is lined with a series of marble panels, 28 in number. The semi-dome has a wooden lining covered with a coating to which is applied the painted decoration consisting of vine scrolls forming loops, filled in most cases by a five-lobed vine leaf and a bunch of grapes.

The face of the *mihrab* is decorated with lustre tiles, 139 in number.

At the northern end of the sahn stands the famous minaret in great prominence on a square base. It has three storeys all squarish or rectangular. At the top is a dome. The minaret is made of bricks. This is the oldest minaret on the African soil and is quite different from the spiral *malwiyahs* of the mosques of Samarra and the mosque of ibn Tulun.

In this region of al-Magrhrib is found perhaps the earliest monument of Muslim military architecture. It is known as Qal'ah Bani Hammad. This citadel was built by Hammad bin Yusuf al-Barbari in the province of Constantine (Algeria) in 370/980. It contains a grand mosque, a reservoir, a palace, and some other constructions that were probably used for administrative purposes. The mosque contains a square minaret in the style of Qairawan but, unlike Qairwan, there are no corridors. The citadel is in ruins now.

2. Muslim Architecture in Spain

Muslim architecture in Spain is considered a great marvel of aesthetic ingenuity. The magnificent mosque and palaces, gardens and citadels, fountains and aqueducts, public baths and private dwellings that ‘Abd al-Rahman I (139 – 172/756 – 788) and his successors built at Cordova, Seville, Granada, and other cities of this western most outpost of Islamic culture, were unparalleled in the entire civilized world.

Spain was conquered by the Arab generals of the Umayyad Caliphs between 93/711 and 527/1132. The capital of the Spanish province of the Empire was Cordova. Soon Arab settlements, especially Syrian, sprang up everywhere. It was these Syrians whom the Governors of Cordova employed as artisans and architects for new constructions,[13] and “the city was adorned with numerous beautiful structures.”[14] It is, therefore, natural that Muslim architecture in Spain mostly exhibits Syrian features.

But a systematic embellishment of Spanish towns, with exquisite structures, actually started when ‘Abd al-Rahman I found the independent Umayyad Kingdom of Spain. This process lasted until the death of ibn Ahmar (d. 671/1272), builder of the famous castle and palace of Alhambra.

During the reign of the Umayyad Caliphs, Cordova grew into the most magnificent city in the West. “The jewel of the world,” according to a contemporary Saxon nun,[15] contained 113,000 homes, 21 suburbs, 700 mosques,[16] and 300 public baths.

One of the first projects of ‘Abd al-Rahman I was to build an aqueduct for the supply of pure water to the capital. He also built a wall around the city and erected for himself a palace called Munyat al-Rusafah outside Cordova in imitation of the palace built by his grandfather, Caliph Hisham, in northern Syria.

‘Abd al-Rahman also laid the foundation of the great mosque of Cordova in 171/786. It was finished in a year at a cost of 80,000 dinars (£40,000).[17] It is the third largest mosque in the world covering an area of 26,500 square yards. It is a vast rectangle, free on all sides. Covered porticoes surround it on every side except the southern where there are 17 arches. The sanctuary is a huge hall of 19 aisles, the roof of which rests on 18 arcades. It could once be entered from the street by 13 doors. The *sahn* is surrounded by porticoes.

The sanctuary of this mosque is a forest of columns. They exhibit great variation of types. Some are smooth, others fluted, and a few even have spiral flutings. The arcades, too, are of a remarkable design.

The mosque underwent several improvements and enlargements at the hands of successive rulers. For instance, ‘Abd al-Rahman III built a minaret 73 cubits high “measured to the highest point of the open dome pavilion. On the summit of this dome are golden and silver apples. Two were of pure gold and one of silver. Below and above each were lilies very beautifully worked out, and at the end of the span was a little golden pomegranate.”[18] Similarly, al-Hakam built a dome in front of the *mihrab* and it was decorated in gold mosaic.

Although the architectural pattern of the great mosque, with its aisles running parallel to the back wall, the horse–shoe arches, the parallel gable roofs, and the arcades around the *sahn*, show clear Syrian inspiration, the double tier of arcades are the most original features of the great mosque.

'Abd al–Rahman III (207 – 238/822 – 852) also erected a palatial mansion and called it al–Zahra', naming it after his wife. It stood on one of the spurs of the Sierra Morena overlooking the Guadaliquivir (*Wadi al–Kabir*). It was started in 221/836. Marble was brought from Carthage and Numidia. Columns as well as basins, with golden statures, were imported from Constantinople. It took 10,000 workmen to build it in about 20 years. The palace had 400 rooms and apartments. The eastern hall was adorned with fountains, in which were placed golden statues of animals, set with precious stones. Water flowed through the mouth of these beautiful figures. The audience chamber was an exquisite piece of workmanship in marble and gold studded with jewels.

The seventh/13th century citadel–castle of Alhambra (the Red Palace) built by ibn Ahmar (671/1272) in Granada is another great architectural legacy of the Muslims in Spain. It is situated on a hilly terrace on the remains of an earlier Umayyad citadel. It was enlarged and embellished by his three successors.

"This acropolis of Granada with its exquisite decoration in mosaics, stalactites and inscriptions, was conceived and constructed" on a grand scale and is without dispute "the last word in such workmanship."[19] In the words of Amir Ali, "The towers, citadels, and palaces (at Alhamabra), with their light and elegant architecture, the graceful porticos and colonnades, the domes and ceilings still glowing with tints which have lost none of their original brilliancy, the airy halls, constructed to admit the perfume of the surrounding gardens, the numberless fountains over which the owners had such perfect control, that the water could be made high or low, visible or invisible at pleasure, sometimes allowed to spout in the air, at other times to spread out in fountains, and serene azure sky, the lovely arabesques, paintings and mosaics finished with such care and accuracy as to make even the smallest apartments fascinating, and illuminated in varied shades of gold, pink, light blue and dusky purple.

The lovely dados of porcelain mosaic of various figures and colours, the beautiful Hall of Lions with its cloister of 128 slender and graceful columns, its blue and white pavement, its harmony of scarlet, azure and gold, the arabesques glowing with colour like the pattern on a cashmere shawl, its lovely marble filigree filling in the arches, its beautiful cupolas, its famous alabaster cup in the centre, the enchanting Hall of Music, where the Court sat and listened to the music of the performers in the tribunes above, the beautiful seraglio with its delicate and graceful brass lattice work and exquisite ceilings, the lovely colouring of the stalactites in the larger halls and of the conical lining in the smaller chambers,"[20] made this architectural monument one of the wonders of the world.

There was another royal villa within the walls of Granada. It was called al–Generaliffe (a corruption of Jami'ah al–'Arif). It also was considered a marvel of beauty with fountains, groves, and flowers. The gardens were terraced in the form of an amphitheatre.

The Alcazar (al-Qasr) of Seville is another notable contribution of the Muslims. It was first built by a Toledo architect for the Muwahhid Governor in 596 – 597/1199 – 1200. Of the many Alcazars in Cordova, Toledo, and other Spanish towns, the Seville Alcazar is the most renowned and the only one surviving, This gracefully decorated castle was until recently used as residence by the Spanish rulers. There is another Muwahhid monument in Seville, the Giralda tower, which was originally the minaret of the great mosque. It was erected in 580/1184 and was decorated with cusped arcading.21

3. Muslim Architecture in Iran

History records that the earliest mosque in Iran was Masjid al-Thaur built at Qazwin in 81/700, but the earliest Islamic monument so far discovered in Iran is the mosque known as Tariq Khanah at Damghan, halfway between Teheran and Meshed. It was built between 133/750 and 170/786. According to M. Goddard, "by the harmony of its proportions and masses, it is still one of the most magnificent buildings of Islam." It was constructed on the vault system.

Iranian buildings throughout the Muslim period were known for their exquisite domes. These domes never arose from the Roman pendentive employed by the Byzantines but from the more primitive squinch arch which spanned the angels of the square and were converted into an octagon. The earliest Muslim dome in Persian is that of the Great Mosque at Qum, south of Teheran. It was built by Abu Sa'dain Hussain in 256/878 and was 80 feet high.

Since then three different types of domes have been built in Iran: (1) single domes, (2) true double domes, and (3) an inner dome concealed by a polyhedral tent dome or a conical roof. Single domes were popular during the Saljuq period and were direct descendants of the Sassanian domes. The most conspicuous and representative dome of the second type may be seen over the tomb of Sultan Sanjar at Merv (552/1157) while the most renowned earlier example of the third type is the Gumbad-i Qabus (398/1007).

The Gumbad-i Qabus was built by Shams al-Ma'ali 'Abd al-Hassan Qabus, the ruler of Gurgan and Tabaristan in 397/1006. This mausoleum is actually a cylindrical tower with a conical top. The inside is empty, a continuous void from the ground to the roof where it is domed with a tent like cone. The total height of the tower is a little over 167 feet. It is built of burnt brick. There are two Kufric inscriptions also, one 26 feet three inches above the ground and the other just under the corbel.

These tomb-towers hold an important place in the Saljuq architecture. They are mostly found in Adharbaijan and across the border in Quniyah. Prominent among these are Khalifah Ghazi at Amasia, the tomb-towers at Akhlat and Kaisari.

These tomb towers are dressed in stone. They are usually octagonal in shape with conical roofs. The exterior faces are decorated with arcading cut in high relief on the stones of the structure. Most of the tombs have four windows or portals. The interior is usually plain and the chamber is always covered by

an inner dome of cut stone. Built flights of stairs to these chambers are rarely found. They were entered probably by means of a ladder.

The Saljuqs concentrated mainly on the construction of mosques and it was during their reign that the basis for the standard Iranian mosque was firmly laid. Its features were: at the beginning of a longitudinal axis an *ivan* portal leads into an open court, arcades surrounding the court are interrupted by four *ivans*, two on the longitudinal axis and two on the cross axis with prayer halls at the back of the arcades, the major *ivan* opens into a square sanctuary chamber crowned by a dome with a *mihrabi* in the rear wall of the chamber.

The earliest Saljuq mosque containing all these elements is the small Masjid-i Jami' at Zauara, north-east of Ispahan, which was erected in 530/1135.

During the Saljuq period vaults over the square or rectangular bays of the prayer hall of mosques display a considerable variety of types. In the earliest surviving Iranian mosques, the bays were covered by barrel vaults. This resulted in complication of construction at the corner angles and did not offer any opportunity for display of technical skill. The Saljuq builders replaced the barrel vaults by domical type vaults. In order to enhance the decorative quality of vaults, they built groin vaults, cloister vaults, vaults on groin squinches, vaults on triangular false pendentives, domical lantern vaults, saucer domes and flat vaults. Examples of these experiments may be seen in those areas of the Jami' Masjid at Ispahan which are assigned to the Saljuqs.

Surface enrichment of the Muslim architecture in Iran was of three types: brick patterns, plaster, and mosaic faience. Decorative brick-lay appeared in pre-Saljuq work, reached its maximum effectiveness under the Saljuqs, and tended to die out in the eighth/14th century. Stucco was an important feature of decoration even in the earliest Muslim monuments and held its popularity throughout. Faience, first used by the Saljuqs on a large scale, developed considerably during the Il-Khanids and reached its zenith under the Timurids and the Safawids.

A number of Saljuq monuments contain *mihrabs* executed in small cut bricks. Brick end plugs were also utilized for decorative purposes but it was stucco, and to some extent sculpture in stone, that played the most important role in the exterior and interior embellishment during the Saljuq period. The arabesque and monumental inscriptions in Kufic and *nasta'liq* writing became an essential part of decoration. For instance, in Merv there still stand the ruins of the tomb of Sultan Sanjar (511 – 552/1117 – 1157) the last of the great Suljuqs, decorated on the inside with panels of fine arabesque and inscriptions, both Kufic and *naskh* in cut terra-cotta.

One of the most beautiful Kufic inscriptions of the Saljuq period is known from a ruined *madrasah* at Karghid in Khurasan. It contains the name of Nizam al-Mulk, the Grand Vizier of Sultan Alp Arsalan (455 – 485/1063 – 1092). The Jami' Masjid at Qazwin, built in 509/1116, and the *mihrab* of Imamzadh Karrar at Buzun (528/1134) exhibit the most developed Saljuq style of decoration in stucco and stone. The

Jami‘ Masjid at Ardistan (555/1160) has three *mihrabs* rich in stucco decorations. Here, several systems of arabesque are intervened or placed one above the other, the heavy or baroque arabesque in high relief usually forming the background.

Stucco was used extensively in the Saljuq era not only for the decoration of mosques, but also for that of palaces and houses of nobles. Compositions consisted of hunting scenes and Court scenes. Occasionally, the relief of figures was so high and thick that it approached sculpture. These stucco reliefs were chiefly found in Rayy (Teheran) and Sawa.

Fifteen Saljuq monuments display, on the interior or the exterior, glazed tiles used in the inscriptions of patterns. Mosaic faience developed in Gumbad-i Kabud at Maraghah (593/1196) reached a stage at which strips of glazed tiles were set in a plaster ground to form an elaborate strap-work pattern, splendid calligraphic friezes of lustred faience surmounted dadoes composed of star tiles in golden brown lustre on a white ground, and *mihrabs* were executed in the same material, for instance, the famous *mihrab* of the Maidan Mosque at Kashar (623/1226).22

Mention may be made of Malik Shah, a great Saljuq monarch (465 – 485/1072 – 1092) who made Ispahan, his capital, one of the most beautiful cities in Asia. He built the famous Jami‘ Mosque and for the first time introduced the tapering fluted style of tower in Iran. The finest example of this cylindrical minaret is found in Iran. It is called Mina-a ‘Ali and was built by Malik Shah. It is decorated with geometrical patterns and bands of inscriptions on glazed tiles.

Persia suffered the greatest disaster at the hands of Mongol invaders at the beginning of the seventh/13th century. Merv and Nishaput fell to Chingiz Khan in 617/1220, and within 25 years the entire country was not only occupied but cities were completely burnt, buildings were totally razed, and, at places, the entire population was slaughtered like animals with the result that very few buildings erected between the Arab invasion of Iran and the rise of Il-Khan Mongols stand today.

The Mongols ruled over Iran for about 143 years (644 – 791/1246 – 1389). Hulagu, the founder of the Mongol Empire, assumed the title of Il-Khan and made Tabriz his capital.

The first Mongol construction in Iran was an astronomical observatory built at Maraghah, the summer capital of Hulagu Khan, at the instance of his famous minister, Nasir al-Din Tusi, in 678/1279.

But it was Hulagu’s successor, Arghun, who revived the great architectural tradition of Iran. He began the construction of Arghuniyyah, a splendid suburb of Tabriz. Work was also undertaken at Sultaniyyah near Qazwin and summer palaces were built at Alatagh, Mansuriyyah, and Lar.

The Golden Age of Il-Khanid architecture was, however, ushered in by Ghazan Khan, who embraced Islam and came to the throne in 694/1295. Ghazan was not only a great builder but was himself an architect. He designed and built Shenb, a suburb west of Tabriz, in 696/1297. The observatory was crowned with a cupola shaped to his own design.23 He also built his lofty tomb at Shenb. It was 12-

sided in plan and had a crypt at ground level. A great mausoleum was encircled with a golden inscription. Some 14,000 workmen were employed in its construction. Besides, there was a monastery for dervishes, a Shafi'ì and Hanafi college, an academy of philosophy, a residence for the descendants of the Holy Prophet, a hospital, a palace, a library, and a splendid garden kiosk called Ardiliyyah.

The tomb was the focal point of the entire built-up area. It was surrounded by gardens which were encircled by a suburb called Ghazaniyyah. Near each of the gates of this town, which soon rivalled Tabriz, was built a caravanserai, markets, and public baths. The name of the chief architect of Ghazaniyyah was Taj al-Din 'Ali Shah.

Although Ghazaniyyah is a heap of bricks today and Ghazan's famous tomb a crumbling mound of debris, very detailed account of Ghazan's extensive construction comes to us from the works of Rashid al-Din, Wassaf, Hamd Allah Mustaufi, and Shams Kashani.

Ghazan was succeeded by his illustrious brother Olejeitu (705 – 18/1305 – 18) who embraced Islam and assumed the name of Muhammad Khuda Bandah. Olejeitu far surpassed his predecessors in architectural achievements. As a matter of fact, most renowned buildings of the Il-Khanid period belong to his reign.

Soon after he came to the throne, Olejeitu ordered work at Sultaniyyah, a site near Qazwin. Plan for this new capital was prepared by his father Arghun but he died before it could be executed. Olejeitu built a wonderful city at Sultaniyyah. The citadel was 500 *gaz* on a side. It was protected by a wall and 16 towers of cut stone. The principal mosque was ornamented with marble and porcelain. There were a hospital and a college also. Surrounded by 12 smaller palaces was the royal palace, a kind of high pavilion or kiosk. The entire ensemble was set in a marble-paved court.

These palaces have since disappeared but the mausoleum of Sultan Muhammad Olejeitu Khuda Bandah still towers over the surrounding area. According to Goddard, this tomb "is certainly the finest example of known Mongol architecture, one of the most competent and typical products of Persian Muslim building and technically perhaps the most interesting."[24]

The second most famous monument of Il-Khanid period was the mosque in Tabriz of Taj al-Din 'Ali Shah, Olejeitu's minister. Only a very small section of this mosque exists today, but Mustaufi, writing in 736/1335, stated that the main *ivan* of this mosque was a tremendous structure. It was 30.15 metres wide, with side walls 10.40 metres thick. The height up to the vault was 25 metres. The pointed arch of the *mihrab* was supported on two columns of copper and the *mihrab* frame was embellished and pointed with gold and silver. According to ibn Battutah, the open court of the mosque was paved with marble, the walls covered with Kashani (faince decoration) and there was a square pool in the middle with fountains.

Mention must also be made of the largest the most revered shrine of Imam 'Ali Rida at Meshed and of his sister Fatima at Qum.

During the Mongol rule, two very renowned dynasties flourished in central and southern Iran: the Atabeks and the Muzaffarids. The Atabeks were the autonomous rulers of Ars with Shiraz as their capital and the Muzaffarids controlled the entire region south of Teheran with their capital being Yazd. History records that Shiraz possessed many buildings constructed by the Atabeks but hardly any of structures exists today. The Muzaffarids seem to be more fortunate in the several very famous buildings that owe their existence to these potentates are still extant in Yazd and Kirman.

Like Iranian art in all its forms, Iranian architecture during the Il-Khanid Mongols were decorative, characterized by precision, clarity and lucidity. However, contrary to the Saljuq period, the Il-Khanid construction places a decided emphasis upon verticality. A look at the portal of Jami' Masjid at Ispahan and its north side arches, the portal of Khanqah at Natauz, the tomb shrine at Ziarat, the niche of Bayazid's shrine at Bistam, and Pir-i Bakram portal proves the point. Chambers too become loftier in relation to their horizontal measurements. *Ivans* also become narrower but higher.

The Safawid Emperor, Shah 'Abbas the Great (995 – 1038/1587 – 1628), was one of the greatest builders Persia has ever had. He was a wonderful town planner. His achievement in this field can be seen at Ispahan, the capital, which he built anew. The scheme included the Great Maidan surrounded by vaulted bazaars, with the portal of his mosque opening in the centre of the south side, the Ala-Qapu palace on the western side, and the avenue, over two miles long, known as the Chahar Bagh.

Shah 'Abbas also built the Jami' Masjid of Ispahan. It has four *ivans* and a domed chamber with a *mihrab* on the *qiblah* side. The south-east *ivan* is flanked by two halls, each with eight dome covered bays and a *mihrab*. The entire building including the main dome is splendidly decorated with enamelled tiles and faience mosaic.

4. Muslim Architecture in Central Asia

The starting point of Muslim architecture in Central Asia is the extant tomb in Bukhara of Sultan Isma'il (279 – 294/892 – 907), the founder of the Samanid dynasty. It is a cubical structure with a dome. Its decoration is almost entirely of brick work. The spandrils of the central arch bear square-shaped *motifs*. The central hemi-spherical dome is surrounded by four small cupolas on its four corners.

Uskend in eastern Farghanah was another centre of the Samanids where four important monuments – one *minar* and three mausoleums – still stand. The *minar* is a tapering tower gradually diminishing in circumference as it reaches the top. It is cylindrical and fluted and has lost its top. It is the oldest specimen of its kind which later became very popular in Iran and Turkey. The decoration consists of tiles combined in geometrical patterns, the ground between them filled with small stucco leaves.

Merve was another great Muslim cultural centre in this region. The oldest monument in this town is a mosque built in 131 – 138/748 – 755. It is called the Hamadani Masjid in memory of Haji Yusuf of Hamadan. Still in good condition, it is used for daily prayers.

The capital of Amir Timur (737 – 807/1336 – 1404) was, however, Samarqand and he made it one of the most splendid cities in the east by building palaces, mosques, and shrines there. The style of these Timurid buildings follows Khurasanid tradition although Chinese and Turkish motifs are also visible. They included the famous mosque of Khuwaja Ahmad Uassavi constructed in 800/1397 near Samarqand. The architect of this mosque was a Persian from Ispahan. It is an enormous square structure, a cubic block from which rose two domes, one covering the mosque proper and the other the tomb of the saint. The second dome is melon shaped a characteristic of Timurid monuments. The entrance is flanked by two towers like that of a fortress, a product of Timur's warlike mind.

Timur was greatly attached to Kish, his birth place, where he built a palace which was considered a marvel by contemporary visitors. The description given by Clavijo the Spanish ambassador, sent to the Timurid Court by King Henry III, shows that this place followed the style of ancient palaces at Nimrud and Khursabiad. Its surface was completely covered with enamelled tiles like the Ishtar Gate of Babylon.

But it was Samarqand which received Timur's fullest attention. The most prominent building in the city is the mosque of Bibi Khanum, which Timur built in memory of his wife in 801 – 808/1398 – 1405, with its monumental gateways and the double dome. This mosque is the first known specimen of the classical Jami' Mosque in Turkestan. The second masterpiece of this period is Timur's own mausoleum at Samarqand, known as Gour–i Amir (Amir's grave). It was constructed by Timur himself. It has an immense dome almost completely covered with glittering tiles. Its walls are resplendent with multi–coloured slabs which are transformed by points into beautiful mosaics forming numerous Arabic and Persian inscriptions. To the right and the left arose two circular minarets. Ulugh Beg, who had inherited a passion for buildings form his grandfather, Timur, added to this tomb a series of other buildings. He also built a grandiose portal to the shrine.

Timur's son and successor, Mirza Shah Tukh (807 – 851/1404 – 1447), transferred his seat of government from Samarquand to Herat in Khurasan. He built there a citadel surrounded by a wall with four gates. The Jami' Mosque of Herat, which stood in the midst of the chief market, was the most beautiful in the whole of Khurasan. Shah Rukh's wife, Gauhar Shad Aqa, was also a great builder. She constructed a college at Herat (820 – 840/1417 – 1437). Its architect was Ustad Qawwan al–Din of Shiraz. The original marble slab of this college is still preserved in the Heart museum. It is calligraphed in *thulth* style by the renowned calligraphist Ja'far Jalal of Herat. Besides, Herat could boast of Musallah, the mausoleum of Gauhar shad Aqa and the *madrasah* of Hussain Baiqrah.

5. Muslim Architecture in Turkey

The Muslim architecture in Turkey (Anatolia) was inaugurated by the Saljuqs in the fifth/11th century. During the course of 250 years of their rule, the Suljuqs constructed many monumental buildings at Siwas, Quniyah, Kaiseri, Erezrum, Divrigi, Karman,and other important towns. These structures include mosques, tombs, mausoleums, palaces, castles, hospitals, caravanserais, market halls, public baths, public fountains, bridges, aqueducts and reservoirs. Quite a few are still extant. The Saljuq architectural

traditions were not only maintained by the Ottoman Turks but reached their zenith both in quality and number in the tenth/16th and fifth/11th centuries.

The oldest mosque in Anatolia (fifth/11th century) built by the Turks is supposed to be the Ulu Cami at Siwas.[25] It is a rectangular structure surrounded by a wall. It has a covered portico, an open court, a flat roof with a layer of earth raised upon horizontal wooden rafters and stone pillars.

The richest and most impressive of the Saljuq mosques is the Ulu Cami at Divrigi (626/1229). It has two gateways. The applique *motifs* of the northern gate are suggestive of knitted or woven design. In the middle of the mosque is an octagonal water basin and above it a dome open to the sky. Outside the exterior walls is a ground minaret and inside a hexagonal conical dome.

The Saljuq mausoleums follow the style common in Khurasan and Merv – a high drum and a dome – with this difference that stone is used instead of bricks and the decoration takes the form of relief. These mausoleums are generally polygonal in shape. The polygons are joined by means of triangular surfaces to a square base resting on the ground. The roof consists of a flat dome inside a conical structure outside. They look like a tent in stone. The tomb of Khalifah Ghazi at Amaisia is one of the oldest monuments (541/1146) and the Douer Gumband (675/1276) is the richest one in decoration. It is a dodecagonal structure formed of blind arcades, side by side with geometrical designs we find fan-shaped palmettes and birds and lions in relief. The mausoleum of Khudaband Khatyun at Nigede (712/1312) contains, besides floral and geometrical ornamentation, reliefs representing birds, stags, and other animals with human heads.

No complete Saljuq palace has survived, but history records several such buildings at Alaniya, Siwas, and Quniyah. For the pavilion and main building of the Saljuq palaces in Anatolia, the Khurasan house plan, with a courtyard and four *ivans*, served as a prototype. As a matter of fact, the same plan is followed in subsequent Ottoman palaces also – a number of pavilions (kiosks) and groups of buildings set among a succession of courtyards and gardens with ponds, the entire structure being surrounded by a wall.

There were medical schools also and these were attached to hospitals, for instance, the one at Siwas (614/1217), the largest of all Saljuq hospitals, had a medical college attached to it.

The Saljuq caravanserais, like their *madrasahs*, had strong gateways for security reasons, with the wall decoration concentrated upon them.

The Saljuq baths differ from those of Damascus in having a plan centred on an octagon with four *ivans*, and the washing arrangements without a common pool. The Sultan Hammam at Quniyah gives a good idea of Saljuq baths. There are separate twin buildings for men and women. The first room to be entered is the disrobing room (*camegah*) with marble floor and a fountain in the middle. From here a passage leads to the tepidarium (*sogu kulul*) for repose and massage. Then comes the hot room (*sic alik*) a domed octagonal hall round which are recesses (*ivans*) containing water basins and private rooms

(*khalwah*).

With the downfall of the Saljuqs (654/1256), Anatolia was divided into more than a dozen independent principalities (*beyliks*) which ruled over various parts of the country for about 200 years. They were overcome by the Ottoman Turks.

The Ottoman Turks ruled over Turkey for almost 600 years (699 – 1342/1299 – 1923). During the Bursa period (699 – 907/1299 – 1501),which is also called the foundation period, the old Ulu Cami type of mosques continued to be constructed but the roofing consisted of co-ordinated domes. For instance, the Ulu Cami at Bursa, first capital of the Ottomans (745 – 801/1344 – 1399), had 20 domes and 12 piers all co-ordinated. But mosques with single domes were also built, for instance the "Ala al-Din Mosque at Bursa (726/1326) and the Green Mosque at Iznik (780/1378).

The mosque that set the pattern for the monumental mosques of the tenth/16th century was that of Bayazid II with a second half dome opposite to and in the same axis with the half dome that supported the central dome on the side of the *mihrab*. This principle was accepted by the famous Turkish architect Koca Sinan whose masterpiece is the Sulaimaniyyah Mosque (957 – 964/1550 – 1557). The mosque of Sinan Pasha, Ahmad Pasha, Sokkolu Muhammad Pasha, Mihrimah Khatun,and Rustam Pasha built by Sinan follow the same style. His great masterpiece, Sebiniyyah Mosque (977 – 983/1569 – 1575) at Edirne, however, had only one dome.

In the 11th/17th century, Turkish mosques followed the style of Shehrzadeh Mosque (950 – 955/1543 – 1548) which was also built by Sinan. It has a central dome supported and surrounded by four half domes. This style may be seen in Sultan Ahmad's Mosque (1018 – 1025/1609 – 1616) and the Walid Mosque.

Under the Ottomans, *madrasahs* and hospitals followed the traditional style but the mental hospital of Bayazid II is quite original. It has separate rooms for mental patients and a communal hall of hexagon shape with dome open to the sky for psycho-pathical cases. At one end of the hall, there is a dais for musicians, and the acoustics are excellent.

The Ottoman mausoleums are invariably roofed with a dome. Decoration is restricted to coloured patterns, and facing of glazed tiles is applied inside instead of outside. Nearly all Ottoman Sultans are buried in Istanbul. One of the oldest mausoleums (868/1464) there is that of Mahmud Pasha, the Grand Vizier of Muhammad the Conqueror. It is octagonal in shape with its facade of geometrical patterned tiles inlaid in stones. The tomb of Sultan Sulaiman the Magnificent (974/1556) is a masterpiece of ornamentation. The tombs of Salim II (982/1574) and Murad III (1003/1595) are also the finest specimens of Turkish faience ornamentation. The marble tomb of Sultan Hamid (1203/1789) is a baroque.

Covered market is a special feature of Ottoman rulers. The covered market of Bursa has a colourful interior of stone and brick masonry that of Edirne (821/1418) has six piers and 14 domes. The famous market of 'Ali Pasha at Edirne (977/1569) built by Sinan had in addition six gates. The markets built by

Muhammad the Conqueror and Sulaiman the Magnificent at Istanbul are most famous. The former has 15 domes and two rows of four pillars and the latter has 20 domes. These two constructions, with the addition from time to time of streets, comprise the famous covered market of Istanbul. It is really a market city.

It covers an area of 30,700 square metres and includes 65 streets, a square, 300 shops, 1,000 rooms, 18 gates, eight fountains, a school, wells, and 16 caravanserais. At the time of Sultan Muhammad and Sulaiman it was mainly the wood, but after the fire in 1113/1701 it was rebuilt in brick and stone. Architecturally, however, the so-called "Egyptian Market of Istanbul," which was built in 1071/1660, is far superior. The windows at the sides of the high, sloping roofed central portion give light at a lower level to the central passage, which forms a right angle, on either side of which are set the rows of shops, 88 in all, each covered by a dome. It is a singly-storied building except the entrance arcades. The effect of the interior is as impressive as that of a cathedral.

The earliest Ottoman palace was built at Bursa, called Bey Sarai, but no trace of this structure is found now.

The complex structure now called the Topkapi Palace (Seraglio) grew out of the subsequent additions to this palace by the Sultans through the centuries. The famous Topkapi Palace remained the residence of the Ottoman Sultans from the ninth/15th century to the 13th/19th century when they moved to Bosphorus. This palace was the centre of government as well as of culture. No other assemblage of buildings affords such an opportunity as this to study at one place the entire history of the Ottoman Architecture.

It covers 699,000 square metres of area, comprising five groups of apartments totalling 348 rooms, two groups of offices, eight servant quarters, ten mosques, 14 paths, two hospitals, five schools, 12 libraries, 22 fountains, a fish pond and vineyard, one outer and four inner courts, and the whole assemblage is surrounded on the landside by a wall. At a time, food for 5,000 residents of the Palace was cooked at the royal kitchen.

In spite of the fact that the Topkapi Palace was not constructed and designed by any single architect, it still possesses a remarkably homogeneous character. The entire arrangement of the palace, with its non-geometrical sub-divisions and its terrace walls counter-acting the steep slope of the ground, conforms admirably to present day principles of town planning.

It is not possible to give full description of the palace. The third and fourth courts, however, contain the most interesting buildings. The structure in which foreign envoys were received by the Sultan (*Arzodasht*) is a marvel of the ninth/15th century architecture. The library of Sultan Ahmad (1131/1719) is remarkable for its plan and marble facade. The Baghdad Pavilion (1048/1638) in the fourth court contains four *ivans* and one central dome. Its terraces, facing the Bosphorus and the Golden Horn, are surmounted by a wide caved roof supported on arcades. The walls are faced, both inside and outside,

with tiles. The Pavilion of Mustafa Pasha (1116/1704) is in Rococo–Turkish style, made in wood, to serve summer requirements.

Unlike the Il–Khanid monuments of Persia and Central Asia, Turkish architecture on the whole is horizontal, not vertical. The height of Turkish buildings is much less than their length and expansion. According to Behcat Uncal, this horizontal effect gives an impression of comfort and repose. In religious buildings, solid parts pre–dominate over the window openings. On the other hand, in secular buildings, window strips dominate the facade. The Turks avoided total symmetry in their ground plans and facades.

6. Muslim Architecture in Pakistan and India

The Muslim conquest of Indo–Pakistan sub–continent started in 94/712 when Muhammad bin Qasim invaded Sind. Contemporary records show that he constructed a mosque and other buildings at Daibul, but these structures no longer exist. Recently some excavations made in southern Sind led to the discovery of certain traces of ancient monuments. But the experts have not yet come to any final conclusion with regard to the age of these structures. Suggestions have been made that the rectangular foundation excavated at Bhambor is that of the first mosque on the sub–continent built at the time of Muhammad bin Qasim.

Similarly, no Muslim monument built before the middle of the sixth/12th century has so far been discovered although it is known that Multan had been an important centre of Muslim culture prior to Mahmud of Ghaznah's excursions. After Lahore was conquered by Mahmud in 393/1002 a permanent garrison of Afghan soldiers was established there.[26] Later on, Lahore became the capital of Mahmud's successors (492/1098 – 582/1186). It is, therefore, most probable that mosques, palaces, tombs, and other structures built by Muslim rulers of Multan, Lahore, and other small principalities in the Indus Valley between the second/eighth and the sixth/12th centuries suffered at the hands of invaders or were destroyed by the ravages of time. What exists today belongs to a much later period as compared with Iraq, Syria, Iran, Egypt and Spain.

Indo–Islamic architecture, during its history of more than five centuries (545 – 1119/1150 – 1707), however, covers such a vast area and has passed through so many stages and styles that in this brief section only a passing reference can be made to them. Besides the imperial style of Delhi, which served as a model, at least eight very marked provincial styles have been noted by experts. These provincial styles belong the West Punjab (545 – 725/1150 – 1325), Bengal (597 – 957/1200 – 1550), Jaunpur (762 – 885/1360 – 1480), Gujrat (700 – 957/1300 – 1550), Mandu and Malwah (808 – 977/1405 – 1569), the Deccan (748 – 1206/1347 – 1617), Bijapur and Khandesh (828 – 1067/1425 – 1656), and Kashmir (813 – 1112/1410 – 1700). One of these styles the Multan style in West Punjab – is even older than the imperial style of Delhi.

The earliest Muslim monument in the Indo–Pakistan sub–continent happens to be the tomb of Shah Yusuf Gardezi at Multan, built in 547/1152.[27] It is a rectangular structure with a flat roof. One of the walls

has an oblong portion which is slightly projected to frame the entrance. The walls are completely encased in the most colourful tiles for which Multan has always been famous. These tiles are decorated with geometrical, inscriptional, and floral motifs. The absence of domes, pillars, and arches in this modest building is very significant.

It was at Delhi that the foundations of Muslim architecture were laid on a grand scale. Soon after he made this imperial city his capital in 587/1191, Qutub al-Din Aibak ordered the construction of the famous Quwwat al-Islam Mosque in 592/1196. This is the oldest mosque extant in the Indo-Pakistan sub-continent. It consists of rectangular courtyard (141 ft x 105 ft) surrounded by pillared cloisters. The sanctuary on the western side possessed elaborate series of aisles with shallow domed ceilings. In front of the sanctuary was placed an iron pillar brought from Mathura as a mark of victory.

Three years later, an expansive arched facade was built across the entire front of the sanctuary. Its pointed arches made in red stone are magnificently carved with inscriptions and floral *motifs*. They produced the effect of loftiness and lightness as, following the contemporary north Iranian style; they are vertical in their composition.

Qutub al-Din Aibak laid the foundations of another most remarkable building the same year. It was the Qutub Minar. Although it was constructed at a time when Muslim in India was hardly established, it has never been surpassed in the boldness of its conception, its aesthetic composition, its exquisite execution, and its imposing effect. It is a unique monument in the entire Muslim history. The idea of this fluted and star-shaped tower was certainly borrowed from Ghaznah as well as North Iran, where the ruins of similar towers still exist. But the Qutub Minar has surpassed all such towers. It lies outside the Quwwat al-Islam Mosque and was probably designed on the basis of Samarra mosque or the mosque of ibn Tulun (second/eighth and third/ninth centuries).

It is a five-storeyed building with a domical roof. The storeys diminish in height and dimension as they ascend and are ornamented by four projecting balconies. Between these balconies there are richly sculptured and raised bands containing Arabic inscriptions. The basement contains six such bands. The lowest storey has 24 projecting ribs forming the flutes. They are alternately angular and circular in the first storey, only circular in the second, and angular in the third. Te other two storeys are of plain marble with red stone belts and were added later. Its tapering construction produces the effect of a height greater than the actual which is 238 feet.

A notable contribution of Muslim architecture in India was made by Sultan Shams al-Din Iltutmish (606 – 643/1211 – 1236) who added the famous arched screen in front of the Ajmere mosque built by his predecessor in 597/1200. These arches, seven in number, extending over 200 feet, more nearly approach the four-centred type invariable found in subsequent Muslim buildings. Each arch is surrounded by three lines of writing, the outer Kufic, the other two in Arabic characters separated from each other by bands of carved arabesque ornament.

Another significant aspect of Muslim architecture in the seventh/13th century is the construction of a large number of tombs. Famous among there are the tombs built by Iltutmish for his son at Sultan Ghari (626/1231) and for himself (633/1235) and the tomb of Sultan Balban (679/1280), in Delhi. The shrines of Shah Baha al-Haq (661/1262), Shah Shams al-Din Tabriz (675/1276) and Shah Rukn-i 'Alam (720/1320) at Multan also belong to the same period. The last named Shrine is one of the most impressive buildings in Pakistan. It is an octagonal structure with sloping walls having tapering turrets at the angles. Erected on an elevated plane, its total height is 115 feet and the dome is 50 feet wide inside. It is made in brick with bands of carved chiselled and parts are inlaid with glazed tiles suggest the Arab-Iranian origin of Multan architecture.

The beginning of the eighth/14th century brought a remarkable change in the imperial style at Delhi. This change was caused by the invasion of Central Asia and Iran by the Mongols. Bringing death and destruction in their wake, the Mongols were responsible for a large scale migration of Turkish and Persian architects, engineers, and artisans to Delhi and it was this group of people who built the famous 'Ala'i Darwazah (705/1305), one of the most exquisite piece of architecture near the Qutub Minar. The 'Ala'i Darwazah (the Gateway of 'Ala al-Din Khalji) occupies a key position in the evolution of Muslim architecture in India. A mere glance at this elegant gate will show that it must have been built by expert architects, having knowledge, vision, and capacity to prepare the design in detail before it was executed. Its style is distinctive and original. The method of its walling, the shape of its arches, the system of support for the dome, and the design of surface decoration all suggest supervision of master builders.

The main arch is a pointed horse shoe. It is rather vertical, the width of its span being much less in proportion to its height. There are bands of inscriptions carved in white marble.

The Tughlaqs who ruled over India from 720/1320 to 816/1413 were great builders. The founder of the Tughlaq dynasty, a soldier who ruled hardly for five years (720 – 725/1320 – 1325), managed to build in this short period a fort, a palace, his own tomb, and the fortified city of Tughlaqabad. This was the first capital city founded by any Muslim monarch in India, although Sultan 'Ala al-Din Khalji, his predecessor, had also earlier planned a similar capital. Tughlaqabad, near Delhi, is now in ruins except for the tomb of the warrior king. It is a unique building as the tomb looks more like an independent fortress than a burial place.

Perhaps the disturbed political conditions, on account of Mongol invasion, demanded the expediency of utilizing every building for defence purposes in times of emergency. This fortress tomb was built on a high plane. It is made in red sandstone and white marble. It has thick sloping outer walls giving the building a pyramidal appearance. Its doorway is literally a death trap for intruders and within the courtyard there is solidly built underground vaults for hoarded wealth. The dome is pointed Tartar in shape – a style followed throughout the Muslim period in India. This pentagon produces the effect of great strength, solidity, and robustness.

The Mongol invaders could not destroy Delhi; this was done by one of her own rulers, Muhammad

Tughlaq, who moved his capital to Daulatabad in the south. Delhi became a deserted city and all its trade, art, and industry were completely ruined. Most of the artisans and architects, who could manage to escape from the Royal camp, took refuge in provincial capitals with the result that when the capital was restored by Firuz Taghlaq was no more master builders were to be found in Delhi.

The Royal treasury was also empty and the economic condition of the subjects had become much deteriorated. In spite of the fact that Faruz Taghlaq proved to be one of the greatest builders India has ever produced, his buildings had to be simple and unornamented, producing the effect of austere severity. Gone were the engravings and carvings, the refined decorative *motifs*, and the well finished and properly cut stone pieces of marble and red stone, and the embellishments of the outer and inner surfaces. Instead, walls were made of rubble covered with thick layers of cement. It was the puritanical phase of architectural asceticism.

Firuz Shah Tughlaq built four fortified cities in North India: Firuz Shah Kotlah in Delhi, Jaunpur, Hissar, and Fatehabad. Firuz Shah's fortified citadel in Delhi was situated on the river bank. It was roughly a rectangle with rectangular courtyards, baths, tanks, gardens, palaces, barracks, a huge Jami' mosque for a congregation of 10,000 people, servant quarters, etc. The main architectural principles of palace-fort, followed by the great Mughuls at Agra, Delhi, Allahabad, and other places, had been laid down by Firuz Shah.

Several mosques were built in Delhi by Firuz Tughlaq between 772/1370 and 777/1375, the most famous being the Khirki Mosque. It was built on a *tehkhanah* or sub-structure of arches. It is a unique construction as it is almost a covered mosque like Saljuq mosques in Turkey, a rare phenomenon in India. The portal is for the first time reached by some flights of steps. It is entered through an arch and beamed doorway. The interior consists of cloisters formed by a series of square bays, each one roofed by a cup-shaped dome. There are three rows of such domes, each row having three constellations of nine domes each. Thus, there are in all 81 such domes. Each corner of the rectangles is supported by a tower and a tapering round bastion.

The invasion of Timur in 801/1398 was a major calamity for India. He not only sacked Delhi but took away with him Indian artisans to build the famous Jami' Mosque at Samarqand. Delhi lost its political supremacy. The rule of Sayyid and Lodhi monarchs were confined to the Gangetic basin only. And during the whole of the ninth/15th century and the first quarter of the tenth/16th century Delhi could boast of no architectural achievements. No palaces, no mosques, no forts, and no cities were built, only tombs were erected as memorials to the dead.

However, a significant addition in the construction of domes was made in this period. This was the introduction of double dome in India, although this style of dome-making had been practised in other Muslim countries for centuries. We find this double dome – an inner and an outer shell to raise the height of the dome without disturbing the interior plan – for the first time in the tomb of Sultan Sikandar Lodhi (924/1518).

Bengal

The Muslim architecture of Bengal is as old as that of imperial Delhi, as Bengal was conquered by one of Qutub al-Din Aibak's generals in 599/1202. It soon became an independent kingdom and remained so until it was annexed by Akbar the Great in 984/1576. The Muslim monarchs of Bengal were men of fine taste and they built scores of mosques, palaces, and other structures at their capitals at Gaur and Pandua bear testimony to their architectural genius but nowhere have climatic and physical conditions caused greater havoc to Muslim monuments than in Bengal. As no stone was available in the vicinity, most of these buildings were constructed in bricks could not withstand the onslaughts of heavy rains, storms, and humidity.

The oldest Muslim monument in Bengal is the multi-domed mosque at the village of Pandua. It was built in the middle of the seventh/13th century. It is the oldest multi-domed mosque in the entire sub-continent. Another very significant structure erected at Pandua is the Adina Mosque (766/1364). It was the focal point of the new capital city built by Sikandar Shah (759 – 791/1358 – 1389). The Adina Mosque, a double storeyed structure constructed on orthodox lines, is the largest and the most impressive building in Bengal. It is as big as the Great mosque at Damascus (705 ft x 285 ft). "To the spectator standing within the expensive quadrangular court of the Adina Mosque, surrounded by its seemingly endless archways, the conception as a whole presents the appearance of the forum of some ancient classical city rather than a self-contained Muslim house of prayer, with the high-vaulted sanctuary on the western side simulating an imperial approach in the form of a majestic triumphal archway."[28]

Around the courtyard is a screen of arches, 88 in number. The roof is covered with 306 domes. The upper storey, probably a Royal Chapel, is supported on a range of arches carried by unusual pillars. These are very short but ponderous piers, abnormally thick, and square above and below. These pillars are unique in their construction and are found nowhere in India. The interior of the sanctuary hall is a superb pointed arch vault, the earliest and the rarest example of its kind in India. The design and execution of the central niche are also most impressive. It is inscribed with delicate arabesque and calligraphic texts.

The Muslim architecture in Bengal was partly conditioned by its climate, for due to excessive rains the surface of the roof had to be curved and covered with a number of small domes. The finest examples of such curved roofs may be seen in Chota Sona Masjid at Gaur (899/1493) and Qadam Rasul. Another characteristic of Bengal monuments is their "drop" arches in which the span is greater than the radius.

Jaunpur

Jaunpur was made a provincial capital by Firuz Toghlaq who built there a fort and laid the foundations of Atala Mosque. Later on, the famous Sharqi monarchs of Jaunpur adorned their city with mosques, tombs, palaces and other buildings associated with an imperial capital. As a matter of fact, Jaunpur

became the cultural capital of Northern India under the Sharqi monarchs. It was called “Shiraz of the East.” Sikander Lodhi, the Sultan of Delhi, completely destroyed this city’s Royal structures when he occupied it in 885/1480; its five mosques alone were spared. The most outstanding characteristic of these stone–built mosques is the pylon formation of their facades. Most famous among these mosques are the Atala Mosque and the Mami‘ Masjid completed in 811/1408 and 875/1470 respectively.

The sky high pylons of these mosques have a unique construction, the like of which is not to be found anywhere in the Muslim world. Their origin is unknown. John Terry, however, suggests that since the early Muslim rulers of Jaunpur were Abyssinians, these pylon–like portals might have been inspired by the pylons of Pharaohic temples in the Nile Valley.29

The Atala Masjid is a very distinctive and majestic building. Although its general arrangements are conventional, its double–storeyed cloisters are very spacious, having 42 feet across and five aisles deep.

Many of the elements found in Jaunpur buildings were derived from the architecture of the Tughlaqs at Delhi, for instance, the recessed arch with its fringe ornamentation, the shape of the arch, and the sloping side of its supports, the beam and brackets supporting the arches, the tapering turrets, the square shafts of the pillars, and the imposing flights of steps leading to the portals, all suggest that artisans trained in the imperial style at Delhi during the eighth/14th century and the beginning of the next were brought to Jaunpur. Jaunpur mosques show a very pleasant innovation in providing especially constructed galleries for religious needs of women. These galleries were covered with beautiful open work screens as seen in the Lal Darwazah Mosque (854/1450).

Although Jaunpur mosques do not display much refinement, they are strong, sincere, and purposeful in their character. They are good examples of bold and forceful workmanship.

Gujrat (700 – 957/1300 – 1500)

Gurjat presents by far the most graceful provincial style in the annals of Indian architecture. The Gujart style of architecture, in the course of 250 years of Muslim rule, passed through three marked stages: the formative and experimental stage well represented by the Jami‘ Masjid at Cambay (725/1325), the middle stage of increased assurance and directional authority, the best and most consummate illustration of which may be found in the Jami‘ Masjid at Ahmedabad, and the final stage when it reached its zenith in the latter half of the ninth/15th century under the patronage of Mahmud Begarha I (863 – 917/1458 – 1511), the typical example being that of the Jami‘ Masjid at Champaner.

In the Cambay mosque, though much was borrowed from the Delhi style of Khalji period and also from the Ajmere mosque, its fine proportions, dignified appearance, and simple design provided a model for subsequent mosques in Gujrat.

The second phase owes its existence to Ahmad Shah, the great builder, who founded the capital city of Ahmedabad (814/1411). His zeal for building projects was matched by that of his courtiers and

successors, so much so that few cities can claim to possess larger numbers and finer specimens of monumental architecture that the capital of the Ahmad Shahi dynasty. Besides, many tombs and other structures, one can count more than 50 mosques of that period in Ahmedabad alone. Ahmad Shah's citadel with its palace is situated on the left bank of the river of Sabarmati. It is a rectangular enclosure occupying a prominent position. Almost in the heart of the town was built the great Jami' Masjid connected with the citadel by a wide avenue. Astride this avenue was erected a stately triumphal gateway call the Tin Darwazah as it posses three arched entrances. The entire conception was a bold attempt at town planning not usually found in provincial towns.

The Jami' Masjid of Ahmedabad is considered the high water mark of mosque design in western India. In its sanctuary have been combined two different facade conventions, the screen of arches on the one hand and the pillared portico on the other. Thus, a subtle contrast between the volume and strength of the wall surface and the depth and lightness of the colonnade has been achieved.

In the reign of Muhammad Shah (846 – 855/1442 – 1451), son and successor of Ahmad Shah, Sarkhaj, a suburb of Ahmedabad, acquired great importance as the burial place of a divine. Here palaces, gardens, pavilions, gateways and a large artificial lake, besides mosques and mausoleums, were erected on a grand scale.

The Gurjat architecture attained its third and final stage during the reign of Mahmud Begarha I. He founded three cities, and adorned them with imposing buildings. Moreover, splendid constructions were added to the glory of Ahnedabad. Most of these were mausoleums, four of which are the Raudahs (tombs) of Sayyid 'Uthman at Usmanpur, of Sheikh Ahmad Khatu at Sarkhel, of Shah 'Alam, and of Mubarak Sayyid near Mahmudabad.

Most famous among the mosques of this period are the mosques of Mian Khan Chishti (861/1456), of Bibi Achut Kuki (877/1472), of Mahfuz Khan (898/1492), and finally Sidi Sayyid which last is a notable departure from the conventional mosque design. It is composed entirely of arcades of arches; eight square piers support these to form the interior over which is laid a flat roof. The walls of the sanctuary are composed largely of perforated stone screens. For the first time, the entire screen has been perforated with "palm and parasite" motif with a wonderful skill and aesthetic taste.

Sultan Mahmud Begarha built a new capital also, at Champaner, 78 miles south–east of Ahmedabad. It was a walled citadel with palaces, a Jami' Mosque, and other usual constructions.

The Deccan

The Muslim architecture of the Deccan was the product of the amalgamation of two separate trends introduced in South India from Delhi and Iran in the eighth/14th century. Another notable feature of the Deccan monuments was the almost complete absence in them of any influence of the then existing South Indian art, in spite of the fact that this territory was so rich in the Chalukyan and Dravidian temple architecture. It is surprising that, while Muslim architects of North and West India freely borrowed from

the local style, their co-religionists in the South preferred not to be in any way obliged to and affected by the styles prevalent in the Deccan.

The Deccan was first conquered by Sultan ‘Ala al-Din Khalji. But the first independent Muslim ruler of South India was a Persian adventurer, ‘Ala al-Din Hassan Bahman Shah. He had served under Sultan Muhammad Tughlaq at Daulatabad. He established the Bahmani dynasty at Gulbargah (748/1347), the fortress of which is considered a most remarkable production of military architecture. Almost carved out of a living rock, this fortress is now in ruins except for its most extra-ordinary Jami‘ Mosque built in 769/1367. It is one of the few Indian mosques entirely covered like the Cordova mosque.

The whole area, including the courtyard, is roofed over by 63 small domes. Light is admitted through the side walls which are pierced by great arches. It was built by Muhammad Rafi‘, a hereditary architect of Qaswin in northern Iran, who must have trained in the Saljuq style of covered mosques found in Turkey. Other monuments of the Bahmani period at Gulbargah include scores of Royal tombs including the famous Haft Gumbad (seven domes).

The most unique construction of the entire history of Indian architecture is the Gulbargah market, 570 feet long and 60 feet wide, adorned with a range of 61 arches on either side supported by pillars and flanked with a block of buildings of a highly ornamental character.30

The Bahmani capital was moved from Gulbargah to Bidar by Ahmad Shah (826 – 840/1422 – 1436). It was adorned with a fortress, palaces, two mosques, and the famous college built in 877/1472 by the great scholar minister Khuwaja Mahmud Gawan. It was a three-storeyed building with loft towers. Its surface is almost wholly covered with glazed tiles of green, yellow, and white colour with floral and inscriptional *motifs* gracefully executed by expert hands.

But the magnificent monument of the ‘Adil Shahi rulers of Bijapur far excel those in other capital cities of the Deccan. In number, too, they are second to none; there are more than 50 mosques, 20 tombs, and nearly the same number of palaces in Bijapur. These were constructed within 100 years after 957/1550. Prominent among these buildings are the Jami‘ Masjid, the most powerfully simple mosque, the Raudah of Ibrahim, one of the most elaborate tombs, the GOL Gumbad, a grandiose structure, and the Mihtar Mahal, the most delicate and the most refined of the all.

The Gol Gumbad, the mausoleum of Muhammad ‘Adil Shah, is considerably larger than the pantheon in Rome, and it has the largest domical roof in existence. This huge dome is based on a circular cornice obtained through interesting arches. This method of constructing intersecting arches, perhaps of Turkish origin, was a favourite device with Bijapur artisans. It was unknown in other parts of India. Besides being of great utility in dome construction, these intersecting arches produce an exceedingly aesthetic effect, those for instance in the sanctuary of the Jami‘ Masjid at Bijapur.

Malwah

The small independent State of Malwah in Central India lasted for about one and a half centuries (804 – 937/1401 – 1530). Its capital, Mandu, was situated on a plateau possessing a very picturesque view. It was adorned by Hoshang Shah (807 – 839/1405 – 1435) and Mahmud Shah I (940 – 974/1436 – 1469) with magnificent palaces, mosques, and other buildings, finest among which was the Jami' Masjid (858/1454). It was a multi-domed building with repeated arcades of arches forming the sanctuary.

Facing the mosque and situated on an elevated plain is the large structural complex called the Ashrafi Mahal (Palace of the Gold Mohar). It was built by Mahmud Shah I. This complex consists of a college, a mausoleum, and a tower of victory.

Two other notable buildings in Mandu are the Hindola Mahal (swinging palace) and the Jahaz Mahal (ship palace). The former was built by Hoshang Shah and is a combination of audience hall and Royal apartments. The latter was built by Mahmud I and is a double-storeyed building extending for some 260 feet along the water-front of two small lakes. It is a colourful structure suggesting gaiety and entertainment.

These and other palaces and mosques of Mandu are all built in red sand-stone. For decorative purposes, the builders used marble and various semi-precious stones such as jasper, agate, and coruclian which were found in the vicinity. Glazed blue and yellow tiles were also employed as panels and borders. It is, therefore, correct to say that Mandu monuments are note-worthy not for their structural qualities but for their decorative properties, in which an aesthetic colour sense takes a prominent position.

The Mughul Period (933 – 1119/1536 – 1707)

The Mughul Emperors of India were descendants of a highly cultured dynasty. Their great ancestor, Timur, had embellished his capital city of Samarqand with exquisite palaces, mosques, mausoleums, and *madrasahs*. Babur, the founder of the Mughul Empire, too, was a scholar-warrior of a remarkably refined taste. In his "Memoirs" he relates that a considerable amount of construction in India was undertaken under his order, although he ruled only for five years. Two mosques attributed to him still exist – one at Panipat in east Punjab and the other at Sambhal, a town east of Delhi. They are, however, built in the traditional style.

The first construction in pure Mughul style, a combination of Persian and Indian style was erected at Delhi in 972/1564 by Emperor Humayun's Queen in memory of her beloved consort. During Humayun's forced sojourn in Iran, she faithfully stood by him for 12 years. She must have acquired a taste for Persian architecture there. When she decided to build Humayun's tomb, she entrusted the task to an Iranian architect, Mirak Mirza Ghiyath. The result was that for the first time a Persian conception was interpreted in Indian architecture.

The introduction of bulbous domes, so common in Iran and Central Asia, and of arched alcoves, a complex of rooms, corridors and a vast garden surrounding the tomb was a significant landmark in Indian architecture. Added to these purely Persian innovations were certain Indian characteristics such as the fanciful kiosks with their elegant cupolas and excellent stone masonry combined with artistic marble work. From these it is obvious that there emerged a new style under the Mongols, the origin of which can be easily traced in Humayun's tomb.

This style was almost perfected by Akbar the Great, who constructed numerous buildings during his long reign. He built four great fortresses: at Agra in 972/1564, at Ajmere in 978/1570, at Allahabad in 991/1583, and at Lahore at almost the same time. According to *A'in-i Akbari*, "there were built upwards of 500 edifices of red stone in the fine styles of Bengal and Gujrat" in Agra fort alone.[31]

The most complete of these buildings is the palace called the Jahangir Mahal in Agra. The palace-fortress of Lahore is unique in this respect that its outer walls are decorated with glazed tiles with sport *motifs* such as elephant combats, games of polo, and hunting episodes. Figure compositions and floral devices also are found in the panels.

The most monumental achievement of Akbar is Fatehpur Sikri, his new capital city, 26 miles west of Agra. It is a complex of palaces, official residences, and religious buildings, so designed and executed as to form one of the most spectacular structural productions in the whole of India. These are all built in red stone. Famous among them is the Diwan-i Khas (private audience hall), the Jami' Masjid with its Buland Darwazah (high gate) and palaces of Queen Jodha Ba'i, Maryam Sultanah, Rajah Birbal and Hawa Mahal.

The Diwan-i Khas is a rectangular hall with unique arrangements. It has a large and circular pillar in the centre, its massive capital supporting a circular platform. From this platform stone bridges radiate along each diagonal of the hall to connect it with hanging galleries. The Emperor used to sit on the central platform and listen to discussions among scholars of different religions.

The most impressive single structure of Fatehpur Sikri is the Buland Darwazah which was built in 979/1571 to commemorate the conquest of the Deccan. It is 134 feet high with a further flight of steps, 42 feet high. Across its front, the gate measures 130 feet. It serves as entrance to the Jami' Masjid containing the tomb of Sheikh Salim Chishti.

Emperor Akbar's son, Jahangir, was not much interested in buildings. The only important construction undertaken during his reign was Akbar's tomb at Sikandarah in 1022/1613. Unlike previous mausoleums, Akbar's tomb has no dome. It seems that a new group of architects were trying to evolve a style different from the one followed by earlier Mughuls. Two more tombs were built in the same style in which the central dome was replaced by a rectangular pavilion. These were the tombs of I'timad al-Daulah built at Agra in 1036/1626 and the tomb of Jahangir built at Lahore. Both were constructed under orders of Queen Nur Jahan. Of these three, the tomb of I'timad al-Daulah is the most delicate and ornate piece of

architecture. It is made of marble with its surface tastefully decorated with precious stones of different colours. This inlaid work is in *pictora dura* style.

The reign of Emperor Shah Jahan (1036 – 1069/1627 – 1658) is the golden age of Mughul architecture. While Akbar's monuments surpassed those of his predecessors in red stone architecture, his illustrious grandson preferred the use of marble on a scale unparalleled in history. His was the age of marble and its architectural style was determined by marble forms with the result that the character of the arches had to be altered into a foliated one, white marble arcades of engrailed arches became a distinguishing feature of Shah Jahan's buildings. The bulbous dome also was constricted at the neck and ornamental elements became curvilinear.

Shah Jahan was almost possessed with a passion for buildings. He started with the Agra Fort wherein he built the marble hall of Diwan–i 'Am as soon as he ascended the throne in 1037/1627. Ten years later, the Diwan–i Khas, a hall also made of marble, was added to it. The double columns of this hall are amongst the most graceful constructions of his reign. From time to time, several other palaces, pavilions, and mosques, e.g. the Khas Mahal, the Shish Mahal, the Muthamman Burj, the Moti Masjid, and the Naginah Masjid, were added to the complex inside the citadel.

In 1048/1638, Shah Jahan decided to transfer his capital to Delhi where he laid the foundations of Shah Jahanabad, a palace–fortress on the right bank of the river Jamuna. The vast, oblong complex is a city within a city. It is a well planned enclosure and a product of the architectural genius of Shah Jahan himself.

The citadel, made of red stone and marble, consists of four groups of buildings arranged symmetrically. The large central quadrangle contains the Diwan–i 'Am, the two square court–yards in the form of ornamental gardens on either side, and the range of marble palaces along the riverside. These palaces include the Rang Mahal and the Diwan–i Khas, two most lavishly ornate buildings considered to be the crowning jewels of Shah Jahan's seraglio.

Since the citadel did not include any mosque, Shah Jahan built the famous Jami' Masjid of Delhi on a site near his palace. It is erected on a lofty plinth and is one of the two largest and most famous mosques in the sub–continent, the other being the Badshahi Masjid of Lahore. Rectangular in shape, the Jami' Masjid has tree entrances, the main and the most imposing entrance faces the east and much resembles Akbar's Buland Darwazah at Fatehpur Sikri. It is made in red stone and marble. The three domes are made of marble with vertical strips of black stone inset at regular intervals.

Several noteworthy buildings were erected by Shah Jahan and his governor at Thattah, the then capital of the province of Sind. Among these are the Jami' Masjid, begun in 1057/1647, and a group of tombs built on the Makli Hill by Mirza 'Isa Khan who governed Sind from 1037/1627 to 1054/1644. The Jami' Masjid is built of bricks decorated with glazed tiles of blue, white, and yellow colours. These tiles were cut in very small sizes, only have an inch wide, thus nearly 100 such tiles have been used within one

square foot producing a mosaic effect. The designs are chiefly geometrical, but the spandrils of the arches often show conventional floral compositions.

Since stone and wood were scarce in Sind, most of the construction was done in bricks and glazed tiles. The architectural style of Sind closely resembles that of contemporary Persia – brick walls arcaded with Tudor type arches, kiosks with cupolas, a "Lodhi" style dome, and the outer surface embellished with glazed tile work.

The greatest masterpiece of Shah Jahan is the Taj Mahal (1042 – 1050/1632 – 1650), built by the Emperor in memory of his beloved Queen at Agra on the bank of the river Jamuna. This exquisite poetry in marble touches the highest pinnacle of Muslim architecture and is unsurpassed in history. Its rhythmic proportion, its atmospheric setting, its feminine delicacy, its animated ornamentation, and its pleasing symmetry make the Taj Mahal one of the great wonders of the world.

While Shah Jahan built in marble and red stone, brick and glazed tile were patronized by the nobility. The finest example of this type of buildings is the famous mosque of Wazir Khan in Lahore. Built on conventional lines, every portion of its structure, both inside and outside, is enriched with a variegated scheme of colours either by means of floral patterns painted in tempera or panels of more conventional designs executed in lustrous glaze.

The Mughuls were very fond of landscape architecture. Nothing pleased them more than ornamental gardens, traces of which are found almost in every city where the Mughuls had lived. The most famous among these are the Shalimar Gardens and the Nishat Bagh of Srinagar and the Shalimar Gardens of Lahore, all three of them built by Shah Jahan. These gardens, like most of the Mughul buildings, are almost always symmetrical and geometrical. But their rectangular terraces, kiosks, balconies, pools, fountains, and cascades present a most pleasant effect and testify to the refined taste of their originators.

The Emperor Aurangzib (1068 – 1119/1657 – 1707) was the last of the great Mughuls. Although too much occupied in political affairs of the state to indulge in constructional work, he has left a famous monument in the Badshahi Masjid of Lahore, the present capital of West Pakistan. Built in red stone and marble, the Badshahi Masjid is one of the two biggest mosques in Indo–Pakistan sub–continent and is an imposing example of strength, solidity and expanse.

With the death of Aurangzib in 1119/1707, the glorious chapter of Muslim architecture in this sub–continent came to an end. The decline of the Moghul Empire was so swift and the political conditions prevailing in Lahore, Delhi, and other important centres of Muslim culture so insecure and unsettled that traces of late 12th/18th century Muslim structures are very rare.

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18. Al-Maqqari, op. cit., vol. 1, pp. 369 – 70.
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Chapter 56: Painting

A. Introduction

It is difficult to distinguish Muslim contribution to painting from the history of Muslim painting. An assessment of Muslim contribution to this art would involve a consideration of the changing and growing attitude of Muslims towards painting and a study of the historical background which determined this attitude. Both these considerations are necessary because they imply each other, an understanding of the one without the other is bound to be inadequate and lopsided. Let us first consider the Muslim attitude towards painting.

It seems that Muslim attitude towards painting in the early history of Islam was hostile. This was justifiable because Fine Arts had at that time an uncanny association with pagan beliefs and rituals. Painting was reminiscent of polytheism which Islam had come to fight against and destroy. Islam then needed an extraverted attitude – an attitude in which the soft and feminine qualities of artistic creation and appreciation could find little room. The social consciousness of man at that period of history did not have sufficient insight into subtle differentiation of various aspects of life. Being a facet of pagan polytheism painting was prohibited by Islam in its zeal to breaks idols.

Profound aesthetic possibilities inherent in Islam had to lie dormant to be realized only when was ripe for their realization, i.e. after Islam had succeeded in its mission to make monotheism an effective force in the development of human consciousness and to foster and nourish the scientific impulse so that man could become master of his history and responsible for its vicissitudes. Once this attitude was fairly established in their history, the Muslims began to pay attention to those pagan pursuits which they had neglected before which were now shorn of their polytheistic associations. Painting was no longer the art of making images but the art of breaking images. Through painting one could now cast out the devils of one's heart and thus prepare one's soul for direct encounter with God. There was no longer any question of worshipping the gods one painted, for no longer did they remain the objects of worship for the Muslim mind.[1]

Orientalists have always seen Muslim paintings through coloured spectacles. They enumerated the influence which moulded the character of Muslim art and maintain by deft implication that Muslim art

could be reduced to these influences, that there was nothing original in this art. They do not see that Islam not only absorbed external influences but also modified them to suit its own native genius. Muslim painting was only an aspect of *Muslim* life. It was an expression of the spiritual explorations of sensitive minds. These sensitive minds, rooted in their own culture, had their own peculiar longings and yearnings, aspiration, and conflicts. It was out of these dynamic forces that peculiar idioms and patterns which we call by the name of Muslim Art.

B. Characteristics of Muslim Painting

Muslim painting began under a shadow – the shadow of taboo on pictorial representation of material things. Islam started its career as an iconoclastic missionary religion to the main aim of which to establish a social order based on reason. It propounded laws, made institutions, and fostered organizations that the ideal could come to earth. It not only enunciated values and principles but also tried to demonstrate that they could be realized in this mortal life of ours. In this endeavour, Islam had to suppress the pagan orientation not only of the Arabs but of all the peoples it conquered. Paganism had an uncanny and almost an internal relation with idol–worship, and Fine Arts were the only means by which idols could be raised and formed in such a way that they could, by their beauty and elegance, induce in the beholders a mood of devotion and emotional abandon.

The aesthetic sense among the pagans was the religious sense. Devotion to beauty and worship were identified in the pagan mind. Paganism was the cult of the irrational. It was based on the bond between the primitive man and the forces of nature that he faced in his daily life. Islam came with the message that there is only one God, that He alone is worthy of worship, and that the forces of nature can be subjugated and bent to serve man's will and desire. It was necessary for Islam at that stage to sub–ordinate the aesthetic to the moral and the beautiful to the good. It was, therefore, a historical necessity which led early Muslims to prohibit the art which fostered representation of gods, goddesses, and national heroes as objects of worship. It did not mean that such a prohibition is inherent in Islam.

Muslim painting, therefore, began with a handicap. Without this handicap its individual and unique character is not conceivable. Some of the unique characteristics of Muslim painting are as follows:

1. Muslims loved their Holy Book, the Qur'an. In their attempt to copy it they tried to write it beautifully and gracefully. They developed new forms of writing and created novel movements in calligraphy. The forceful and lyrical language of the Holy Qur'an induced them to write it with passion and warmth to introduce cadence and grace to the form of the written word. Muslim painting is the result of these movements in calligraphy. Thus, we find that Muslim painters emphasize line (*khat*) more than anything else. A powerful and colourful line and a forceful stroke can create a ravishing form, pulsating with charm and fascination. It is the "line" that matters, everything else would take care of itself. Whether it is a straight line or curve, the stroke alone is responsible for the aesthetic forms; it provides the criterion of beauty.

2. Islam implies a serious commitment to history. For Islam, nature is interesting only as a background to human personality and human deeds. Muslim painters are intensely alive members of Muslim society. For them wars and battles, rise and fall of dynasties, destruction and construction of cities are not matters to be observed with a spiritual nonchalance and complacency but events of vital interest. For a Muslim artist, human personality has supreme value. We, therefore, find that it is the human drama, the human action, which occupies the centre of Muslim paintings. Vast spaces, mountains and valleys, storms of wind and rain which characterize Chinese paintings are conspicuous by their absence in Muslim painting. The principal reason for this attitude seems to be the realization that for a painting of nature to be vital and vivacious it has to employ human symbols.

The storms must oppress and plunder, the wind must be caught unawares in a tree, the valley must sing songs, and mountains must radiate human, maternal warmth. One cannot enjoy a landscape painting unless it is perceived animistically, unless it is human in some way. Not that Muslim painters did not paint landscapes, they did sometimes far more effective than the impressionistic painters of France and Holland. What did they eschew, however, was painting a landscape for its own sake. A human being must be there to give actuality to natural scenery. Without human beings nature is dead and insignificant. For Muslim painters a scene of natural beauty is incomplete and incomprehensible with the observer being there in the painting in one form or another. It is a new mode of perception; seeing nature as an inter–play between natural stimuli and the human eye. Western critics of Muslim art do not see this point. They dismiss the entire Muslim painting as sentimental and romantic because it is not interested in nature *per say*.

3. Muslim painters did not introduce perspective in their paintings. Their paintings seem almost all – except those made in the time of Jahangir under the impact of Dutch and Flemish painters – to be lacking in depth. The third dimension and the changes it causes in human perception are ignored by the Muslim painters. Perhaps the reason is that they are interested in distant objects as well as in near objects. An object far away is as much relevant to the central figure as the object in the forefront. Why not bring it forward in imagination, observe it telescopically at it was and paint it in its full magnitude?

One finds a similar spectacle in some of the illustrations of the *Shah Nameh*. There in a single painting several episodes are brought together to make a complete story. The Western critic is baffled, and even when he praises such “erratic” paintings he does so condescendingly. The reason he does not understand this style of painting is that he is alien in spirit of the Muslim conception of time. For a Muslim, time and eternity are only two facet of the same reality, he does not have to create a dichotomy between time and eternity, he does not have to make time illusory in order to satisfy his longing for eternity. A Muslim is expected to try constantly to create eternity out of time. No wonder then that Muslim painting tried to combine all dimensions in a single unity and all phases of time in one whole.

4. Muslim painters did not paint darkness. In their painting all is light and colourful. The resplendent sun seems to cover their canvas and paper. There are no dark shades or black shadows haunting the

painting like ghosts threatening life with primordial dangers. Their painting is a painting of luminous tints and hues and colours. This again reflects a singularly strange attitude, especially to the Western, for he can wallow in darkness.[2] Darkness and fondness for darkness are typically pagan characteristics.

It connotes qualities which emanate from a state of pre-consciousness. You cannot be conscious and remain in darkness. Darkness is a dragon which devours distinctions, discriminations, and differentiations. Darkness also characterizes a condition of stark individualism, when the individual is sundered from society and finds himself in the grip of absolute helplessness. Modern Western sensibility which is completely unconnected with Muslim culture cannot appreciate the absence of darkness. It seeks an external representation of the black despair within. But black individualistic despair was no part of Muslim consciousness.

As we have seen, Islam emphasizes a serious commitment to history. In a growing Muslim society the individual, apart from being an individual, is a social being *par excellence*. Sociality is a *raison d'etre* of an individual. The helplessness of an individual and the resulting spiritual darkness, therefore, is a condition alien to Muslim consciousness. Perhaps, when the Muslim individual is faced with rapid industrialization, he may for a time get into despair and thus enter the realm of darkness in order to emerge again with light. Of course, there were Muslim mystics and they did come at times face to face with the phases of inner darkness, but they were people who never painted.

5. Muslim painting, consciously or unconsciously, employed symbols which represent mystical states. Sometimes endless curves with no beginning or end stand for the state of bewilderment in which nothing outside seems to gratify spiritual longings. At other times *mandala*[3] forms are used to indicate the state of spiritual wholeness which mystics desire to achieve. Western critics do not see these motifs in Muslim art and like to dismiss it as merely decorative and ornamental. Unless one sees Muslim art in its proper historical perspective and imaginatively flows with the stream of Muslim history and ideology, one is not likely to appreciate the significance of this unique idiom.

6. Muslim painting, especially in Iran, was devoted to the expression of a single emotion in one painting. Every detail of the subject was perceived and made use of for an effective rendering of the subtle nuances of that emotion. The trees and flowers were not there to fill a background; they were there to add to the melody flowing from a painting. Most of the Persian miniature paintings are like orchestras in which each object painted contributes to the symphony. This unique characteristic of Muslim painting may have emanated – as Basil Gray suggests – from the mystical and pantheistic tendencies of the Persians, they, perhaps, regarded every object of nature as manifesting God. But a more plausible explanation of this singular quality can, perhaps, be found in the Muslim conception of time.

Muslims regard duration as continuous and eternal, time as discontinuous, universe for them is new at each moment. One continuously hears the sound of *kun ja-yakun*.[4] For a Muslim artist, therefore, simultaneity of eternity is far more significant then succession of events. The emotional meaning of an object is implicitly contained in the total situation. This attitude is hard to grasp for the Occidental mind.

That is why we find that the Western critics of Muslim art, by trying to fit its mode of expression in the pre-conceptions and categories of their own culture, misunderstand and distort the essence of its individuality.

The nearest parallel to this conception is the Chinese conception of synchronicity embodied in their religious classics, such as *I Ching*. Since each moment is an act of God, the Muslim painter sees every temporal and spatial situation as somehow transcending serial time and geometrical space. His peculiar perception gives a painting its particular individuality, the fact that his eager vision selects a peculiar array of objects imparts to its uniqueness. But the fact that this array is the manifestation of the Divine gives it an aura of universality. Both particularity and universality are, thus, combined and synthesized in a single work of art.

7. Muslim paintings – again especially miniatures – are illustrations of literary and religious classics. Several explanations of this peculiar characteristic have been advanced. But the only explanation which is consistent with the general Muslim attitude is that for a Muslim nature is itself in illustration of the Word of God. *Kun fa-yakun* are the words which translate themselves into the sensible world. The world is Logos in matter and motion. Muslim consciousness is rooted in the awareness of a profound inter-relationship between word and fact. Word seems to be the life blood of the universe.

This point will become clearer if we attend to a parallel recently drawn by Dr. W. C. Smith between the Christian "Eucharist" and the memorization of the Qur'an by Muslims. Dr Smith writes, "The Koran, in formal Muslim doctrine pre-existent and uncreated is for the Moslem the one tangible thing within the natural realm that is super-natural, the point where eternal has broken through into time. By Koran one means, of course, not the 'ink and paper' but the content of the Koran, its message, it words, ultimately its meaning. The *hafiz* (freely, the 'memorizer', but, more literally, the 'apprehender') has in some sense appropriated this himself, has interiorized it in a way that could conceivably suggest to a Christian some analogy with what happens when the Christian in the Communion service appropriates God, the super-natural, the embodiment of eternity in time."

This parallel is extremely valuable. For where Christians have to incorporate the body of Christ in order to have communion with the God-head, Muslims have to incorporate the words of the Qur'an so that they would have communion with God. The eternal Word and its meaning are one, they cannot be separated. And it is the Word which gives spiritual sustenance to the believer.

If we look at the artistic illustrations composed by Muslims painters from this point of view, we may appreciate the significance of this tendency better and more adequately. The word for a Muslim has a compelling power of creation: his spirit must fly to eternity on the wings of words. Not only that, these are the only wings which can take him there. Hence, every sensuous experience which inspires a painter to express himself in colour and line, in order to be integrated in his personality, must be capable of verbal expression. The rise and fall of sensuousness must be capable of being regulated by words.[5]

Muslim painting, especially in its early phases, was not an autonomous medium of expression. It was subsidiary to literature. The earliest Muslim paintings were the results of the efforts of painters to illustrate some of the classical books. They derived their content from these books and their form from their need to decorate and make beautiful. The passion to illustrate the written word is not something peculiarly Muslim, it has inspired painters like Delacroix to illustrate Goethe's *Faust* and artists like Michelangelo to point Christian myths and legends on the interior walls of cathedrals and churches. It is significant that the grand old man of painting in Pakistan, 'Abd al–Rahman Chughta'i, won his reputation as a great artist by his illustration of *Diwan–i Ghalib*. When painters, whether of the East or of the West, seek grand visions and cosmic views to colour their artistic endeavours, they illustrate great books. Perhaps the need for these visions is perennial.

Let us now substantiate these points by have a brief a glance at the history of Muslim painting.

C. Historical Background

Muslim painting started its career under the Umayyads, who as rulers and conquerors were mainly without any puritanical disdain for luxury. The palaces they built were expressions of the theme of splendour and richness, which gradually came to dominate all aspects of their lives. One finds the walls of these palaces made beautiful and attractive with paintings inspired by various colourful motifs. About 94/712, the Umayyad Caliph, Walid I, built a desert lodge at Qusair 'Amrah. This romantic palace was decorated by wall paintings representing allegories and various kinds of animals and plants.

The 'Abbasids went further. In their pagan pursuit of imaginative luxury they made the human figure loom large in their paintings. In their paintings girls dance, musicians sings and play on instruments, animals stroll, and birds fly and twitter. These figures are enclosed in circular disks. One finds a resplendent example of this tendency in the palace at Samarra built in the third/ninth century. Side by side with these paining one sees the opposite motif. On wooden boards are painted plants in white, red, yellow, and blue. In these paintings human and animal motifs are absent.

But the early 'Abbasids made their artistic influence felt more in Iran than perhaps anywhere else. Here one sees several palaces decorated with frescoes in diverse styles and various modes of execution. Some of them are only in black and white, while in others all colours are employed to create the desired effect. The black and white paintings portray human movements, while the multi–coloured paintings depict human and diabolical figures, male and female, with and without haloes, heads, busts and dresses. The plaster niches found at Nishapur are made of different designs, but all have the vase or goblet motif; these vases seem to radiate palmettes against a blue background and have a triangular shape reposing on top. Sometimes two magical eyes diffuse a spell over the entire niche. In Egypt, beautiful frescoes were made under the patronage of the Fatimid Caliphs in the fourth/tenth century. They had several themes – geometrical patterns, birds, palmettes moving out of central figures, human beings holding drinking cups in their hands. One also sees the dawn of miniature painting in this period.

D. Book Illustrations

In the seventh/13th century, the ‘Abbasids began to patronize illustrations of classical works of science and mysticism. The impetus probably came from some of the illustrations made by painters in the second/eighth and third/ninth centuries under the influence of Mani, the great Iranian painter. The ‘Abbasids probably employed the Nestorian or Jacobite Christians to illustrate the books they regarded as classics. The main difference in content between the Manichaean illustrations and Muslim illustrations was that the former were mainly representations of religious themes and the latter devoted by and large to making the sciences of the body and the soul sensuously attractive to the human eye. For instance, the Arabic translation of Dioscorides’ *Materia Medica* was illustrated profusely by ‘Abd Allah ibn al-Fadl. Similarly, other books dealing with animals and plants in a scientific manner had their themes illustrated by skillful painters of the time.

The distinctive feature of these illustrations was that they treated of operational themes. They dealt with subjects such as doctors preparing medicines or surgeons doing operations. These illustrations have a very simple style. Rich and powerful colours make the theme throb and pulsate with energy and vivacity, rosettes and palmettes cover and decorate the apparel and garments, but the background is only just indicated, generally with a few conventionalized trees.

One book which was distinguished for its remarkable illustrations was Hariri’s *Maqamat*. Its illustrations were done by a powerful painter of the time, Yahya ibn Mahmud of Wasit, conveniently known as al-Wasiti. This painter copied and illustrated the most important copy of the *Maqamat* in 635/1237. These magnificent paintings deal with everyday life. They show ordinary Muslims travelling in the desert, praying in the mosque, drinking in the tavern, and reading in the library. There realism is enchanting, their conception is bold, their strokes are sure and vital, and the line they imprint is fine and delicate.

In this period, *Kalilah wa-Dimmah*, a Hindu book of stories, which was translated into Arabic by ibn Muqaffa‘, was quite a popular fount of inspiration for the painters who aspired to make their mark as illustrators. One of the manuscripts prepared in 628/1230 show minute observation of details and an excellent realization of the animal motif, but here, as elsewhere, the third dimension is only barely and abstractly indicated. In northern Mesopotamia under the Saljuq Atabegs painting seems to have acquired considerable popularity. Nur al-Din Mahmud, the Urtuq Sultan of Diyar-Bakr, asked al-Jazari, the great inventor, to write a treatise on the work he had done. Several illustrated copies of this book called “Automata” can be seen in the various museums of the world.

In Iran, during this period of history, only wall paintings and ceramics portraying figures and legends in comparatively subdued colours were being made. Turquoise, blue, or white serving as background would shoot forth gold, silver, green, violet, etc.

E. The Mongo School

The Mongols brought with them a deep fondness for the Chinese art. The painters of Mesopotamia, as we have seen, themselves possessed a great sense of realism. This sense was made more acute and sharp by their contact with the Chinese culture and Fine Arts. The Chinese artists had achieved considerable excellence and maturity in painting landscapes. The Muslim artists assimilated in their idiom not only on themes selected by the Chinese painters but also their method of impressionistic painting in black and white. Ibn Bakhtishu''s *Manafi'i al-Hayawan* is the earliest Iranian manuscript of the Mongol times. Several copies of this book were made in different styles, sometimes adopting mild tones and at other times venturing forth in bolder colours.

The most important influence that Mongol painting received in this period was that of a master mind. Rashid al-Din, the man who wrote, among other books, *Jami' al-Tawarikh*, a history of the Mongols, was, above all, a devotee of learning and arts in the pursuit of which he founded a colony of people whose main business was the enrichment of life with knowledge. Several artists, provided with accommodation and amenities of life in that colony, were asked to copy and illustrate books, mainly his own. The miniature painting in all these books – especially those in *Jami' al-Tawarikh* – show a peculiarly sober but fascinating blend of the Iranian and Chinese features of artistic expression. Some of the copies of this book can be assigned to a later period because they suggest developments which occurred only in the beginning of the eighth/14th century.

Quite a few of the painters of this period copied and illustrated *Shah Namehi* of Firdausi. Again, there are several variations of the composite influences of the Chinese and Iranian styles of painting. The realism of these paintings is particularly marked, the expressions are distinctly individualized, and the details are painstakingly portrayed.

F. The Timurid School

Then came Timur. He was the man who left a trail of blood behind whenever he ransacked a country. Nonetheless, he was a great lover of arts. When he conquered a country he would take special care not to kill the artists. He would then take them to Baghdad, where under his patronage they copied and illustrated manuscripts. But true artistic greatness was achieved only under the inspiring benevolence of Shah Rukh (Timur's son) who made Herat his home. Shah Rukh was interested in books and he inspired many artists to calligraphy and decorate the famous and important books of the time.

Khalil, a great painter, who was regarded second only to Mani, was the leading figure in art at Shah Rukh's Court. Shah Rukh's son, Baisunqur Mirza, founded an academy of book arts with a large staff. Among the important painters were Amir Shahi and Ghiyath al-Din. *Shah Nameh* was still the fount of themes for the Court painters, but they also addressed themselves to mystical and romantic subjects – such as those found in Nizami's *Khamseh* and Sa'di's *Gulistan* and *Bustan*. The vivid and lyrical imagery

of those paintings suggest that the painters modified and changed their style to suit the novel subjects they had discovered. At Shiraz, where an independent school flourished at this time, colours were milder and cooler, and the style, though not vastly different, was definitely less skilful than that of the school at Herat.

Another book, *Diwan–i Jami*, was also a popular source of inspiration for the painters of that period. ‘Abd al–Karim of Khwarizm calligraphed and illustrated Maulana Jami’s *Diwan* at the end of the ninth/15th century. In Samarqand a book on astronomy was also illustrated for the library of Ulugh Beg.

G. The Great Behzad

The Iranian historian Khwandamir wrote thus about Behzad in the middle of the tenth/16th century, “He sets before us marvellous forms and rarities of his art, his draughtsmanship, which is like the brush of Mani, has caused the memorials of all the painters of the world to be obliterated, and his fingers endowed with miraculous qualities have wiped out the pictures of all the artists among the sons of Adam. A hair of his brush, through its mastery, has given life to the lifeless form.”

This great painter began his career with Sultan Hussain Mirza at Herat at the end of the ninth/15th century. Later, he came to Tabriz in the early tenth/16th century to work under Shah Isma‘il. It has been said that when a battle was raging against the Turks, Behzad and Shah Mahmud al–Nishapuri were hidden by Shah Nasir in a cave. In 929/1522, Behzad was appointed Director of the Royal Library. The two well–known manuscripts that Behzad illustrated were *Khamseh* and *Bustan*. One sees in these paintings a keen perception of form, a highly sensitive and subtle sense for colour, experimentation with colours to evolve new *Gestalten*, and novel patterns of feeling and awareness. These paintings show that Behzad had an astonishingly strong consciousness of the opposites: of dramatic action and immobility, of blending peace and unrest, of combining generality with individuality. *Zafar Nameh*, a biography of Timur, was also illustrated by Behzad. Besides, he illustrated Maulana Jami’s *Diwan*, and his illustrations show his experimental genius at its best.

The most outstanding student of Behzad was Qasim ‘Ali, who carried on the style and artistic tradition, set by his inimitable master. Qasim ‘Ali, who acquired the experimental spirit of Behzad, became well known as a painter of faces.

One thing that strikes the modern connoisseur of painting is that Behzad, who unfortunately did not outgrow the narrow confines of miniature painting, had an intense awareness of the *mandala*. One has only to look at his masterpiece, “The Dancing Dervishes,” which, apart from its ravishing curves and powerful lines suggesting movement and rhythm, is a beautiful *mandala* figure. The dervishes make a moving and dancing circle which seems to revolve around a centre. The centre is again not bereft of content. It is filled with four dervishes dancing hand in hand.

This painting gives a lie to all those Western critics of Muslim painting who have repeatedly charged

Muslim art, almost *ad nauseam*, with being almost entirely decorative. This painting is one of the illustrations in *Diwan–i Jami*, a Book of poems with a markedly mystical content. Here is a painter who not only illustrates but also absorbs the mystical content in his artistic forms. *Mandala* represents spiritual wholeness. It seems that Behzad was painting his powerful pictures not to produce decorative effects but to answer a spiritual need. It was a response to his spiritual longing, a colourful realm discovered by his spiritual quest, as answer to the prayers of his soul. When one looks at "The Dancing Dervishes," one finds that compared with it the most renowned *mandala* paintings by the mystics of other creeds pale into insignificance. The spell that Behzad's paintings cast on the beholder can radiate only from a whole soul. It is not the work of a mere decorator.

H. The Safawid School

Herat continued to throb with art even when Behzad shifted from there to Tabriz. Behzad's influence was not passing or transitory, it stayed because it continued to move and stir the Muslim soul. Amir Khusrau Dihlawi's *Khamsea* was copied at Balkh and was illustrated by one of Behzad's students. It contained some very significant miniature paintings. The great calligrapher 'Ali al–Hussaini copied and illustrated 'Arif's Go–i *Chaugan* in 930/1523. Similarly, *Diwan–i Hafiz* was illustrated by Shaikhzadeh, a student of Behzad, and Sultan Muhammad who had an individual style. Sultan Muhammad also copied Nizami's *Khameseh* and produced some very outstanding and superb paintings. In his paintings he introduced new colour schemes and new ways of perception.

Sultan Muhammad was a Court painter *par excellence*. He was not only an intimate and close friend of Shah Tehmasp, but also taught him how to paint. He illustrated Nizami's *Khamseh* and Firdausi's *Shah Nameh*. Along with his teacher Mirak, he created a new style of painting. His fingers are more sophisticated and his background is richer in detail and ornament.

Sultan Muhammad also painted some portraits of charming young men and lovely ladies. Some of his portraits are those of Shah Tehmasp himself.

The second half of the tenth/16th century saw the rise to eminence of another painter, Ustad Muhammadi, son and student of Sultan Muhammad. The miniatures painted by this great artist reveal an enchanting style and a sense of composition unprecedented in the history of Muslim painting. He took his subjects from everyday life and imparted an inimitable rhythm to all the details of his figures. Trees, wild and tamed animals, men and women enter his paintings and become immortally and irrepressibly alive.

I. The Bukhara School

In the early tenth/16th century, Bukhara became the centre of hectic creative activity. Mahmud Madhahhib, a student of the famous calligrapher Mir 'Ali, excelled in painting love scenes. He also illustrated Nazami's *Makhzan al–Asrar*. Several other painters painted miniatures in this century and

their work shows the influence of Behzad and his school. But they did not blindly imitate Behzad; they accepted his influence and developed a new style. They experimented with colours and afforded local touch to the figures they made. One painter illustrated Sa'di's *Bustan* and another Muhyi Lari's *Futuh al-Haramain*. One finds these paintings beautiful and decorative, but lacking in the spiritual fire which was characteristic of Behzad's work.

They were bereft of the ardent longings which animate paintings of the Herat school. They are expressions of artistic decay which set in at about this time in Iran and other Muslim countries. The principal reason of this decline seems to be the desire of clinging to the same old form of miniature painting and a refusal to experiment with other media of expression. That is why in Isfahan, under the patronage of Shah 'Abbas, illustrations were made but only of works of much lower calibre than *Shah Nameh* or *Diwan-i Hafiz*. Paintings were made to portray scenes from books like *Chihal Sutun* and *'Ala Kapi*. At this time Rida'-i 'Abbasi were regarded as the most outstanding painter of Iran.

His tinted drawings throb with life and vigour. One finds in them undulating curves flowing with facility into the patterns they weave and mild strokes emphasizing the ends. This was indeed a breath of fresh air. Life itself, rather than books, became the fount of inspiration. This was a great change, but it could not be felt as such because great changes need great artists to sustain them. Unfortunately, neither Rida'-i 'Abbasi nor anyone else had the powerful vision of a Behzad or a Sultan Muhammad. Consequently, the 11th/17th and 12th/18th centuries, people imitated and admired Rida'-i 'Abbasi, but no new movement came into being.

J. The Turkish Painting

The origin and development of Turkish painting is still wrapped in mystery. However, this much we know that in 855/1480 Sultan Muhammad II invited Gentile Bellini to his Court and commissioned him to paint his portrait. In the tenth/16th century Shah Quli and Wali Jan, the Iranian painters, came to Constantinople and became Court painters. These artists selected the houris of paradise as their subject-matter. Shah Quli achieved excellence as a painter of curved leaves and Wali Jan became distinguished for the elegance of his lines. Some Iranian painters illustrated "History of the Ottoman Sultans" and *Sulaiman Nameh*, a book of stories by Firdausi of Brusa. The main distinction of these painters was that they did a good deal of experimental work in colours.

K. The Mughul Painting

Babur, the first Mughul Emperor of India (933 – 937/1526 – 1530) was a philosopher and great lover of nature. It seems that he patronized Fine Arts and brought with the traditions of Behzad and the Bukhara school. Babur's son, Humayun, invited Khuwaja 'Abd al-Samad of Shiraz and Mir Sayyid 'Ali to his Court at Kabul and asked them to illustrate *Amir Hamzah*. The paintings they made of this fantastic story were 1400 in number. Akbar, Humayun's son, was a unique patron of arts. He built a city, Fatehpur Sikri,

where he decorated his palaces with mural paintings and founded an academy of Arts.

This was an institution for the creation and promotion of a native school of painting. Painters of this school were influenced by Behzad and the early Timurid paintings. Nizami's *Haft Paikar* was copied and illustrated by the painters at Akbar's Court in a style which had a peculiar blend of two traditions: Behzad School and the early Timurid School. They show a local touch in so far as the content is concerned, but in the selection of colours and design they were markedly Iranian.

Hindu painters, working under the Mughul influence, illustrated manuscripts dealing with the lives and exploits of Timur, Babur, and Akbar. Their paintings reveal a remarkable mixture of the Hindu, Iranian, and European influences. For the first time in Muslim art one notices the presence of perspective and a clear visualization of the third dimension.

Jahangir (1014 – 1038/1605 – 1628) carried on the tradition of his great ancestors, and he carried it much further. He liked art to be representative of life as it is lived in the present and not a mere illustration of the wisdom of books. Thus, in his time realistic painting of plants and animals were produced in abundance. On his travels he would take his Court painter with him and urge to portray significant historical events in their paintings. Mansur, Murad, and Manohar were distinguished painters of his time. These artists painted rare birds, animals, and flowers in an exquisitely realistic style.

Jahangir and his nobles were also fond of getting their portraits made. The famous portrait painters of this time were Bishandas, Manohar, Muhammad Nadir, and Abu al–Hassan. Abu al–Hassan was Jahangir's favourite: he painted some beautiful miniatures and some very fine portraits of Jahangir. Mughul painters also painted pictures representing nobles and princes conversing with Hindu ascetics and hermits. Shah Jahan, Jahangir's son, was a devotee of portrait painting. Some of his own portraits, made by artists at his Court, show acute observation, elegance and subtlety in execution, and a deep sense of colourfulness. Muhammad Fakhr Allah Khan and Mir Hashim were two of the important painters of his time. Dara Shikoh, Shah Jahan's son, who never ruled, was a great admirer and patron of arts – but after him, that is, in the 12th/18th and 13th/19th centuries, Mughul art suffered a complete decline.

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1. "Prayer, then, whether individual or associative, is an expression of man's inner yearning for a response in the awful silence of the universe. It is a unique process of discovery whereby the searching ego affirms itself in the very moment of self-negation, and thus discovers its own worth and justification as a dynamic factor in the life of the universe." Sir Muhammad Ashraf, Lahore, 1958 p. 92,
2. Thus, Bachofen writing about the characteristics of matriarchal societies regards preference for darkness as an important attribute of such pagan cultures. Bachofen says, "By no means less significant is a second expression of the same fundamental law, that of pre-dominance of night over day born of her maternal womb. In antiquity... preference of night over the day (was) associated with ... a dominant maternal influence. In this instance two hoary customs and usages, councils and court assemblies, that is, the preference for darkness for the exercise of social functions, show that we are not dealing with a philosophic theory of later origin, but an actual mode of life. Added to these observations comes the preference of the sinister aspect of life and death over its bright aspect of creation, the pre-dominance of the dead over the living and of sorrow over joy."
3. 'Images of the goal," says Jung, "are mostly concerned with ideas of the mandala type, that is, the circle and the quaternity. They are the plainest and most characteristic representations of the goal. Such images unite the opposites under the sign of the quaternio, i.e. by combining them in the form of cross, or else they express the idea of wholeness through the circle or sphere."
4. Louis Massignon, "Time in Islamic Thought," Eranos Yearbook, Rhein-Verlang, Zurich, 1951.
5. In a footnote in his paper on Christianity and Islam, Dr. Cantwell Smith writes, "It is the word (Kalam) of God, it is not He nor is it other than He." He further quotes from Al-Nasafi, "We do not say that the verbal expressions (alfaz) and letters are eternal...The (uncreated) Qur'an, the Speech of Allah, does not reside in the hearts, nor in the tongues, nor in the ears, but it is an Eternal idea subsisting in the essence of Allah."
The last line in al-Nasafi's quotations, however, suggests that the Eternal Idea cold be grasped without the Word. But this is a mistaken view of Muslim consciousness. In Muslim consciousness the Word is an integral part of the total meaning of God. That is why a Muslim, however rationalistically oriented he might be, will always admire –covertly or overtly – the heroic fight that Imam Ahmad bin Hanbal put up against the doctrine of al-Qur'an khalq1-Allah , that is, the Qur'an is the creation of God.
One may agree with Dr. Smith when he writes, "By this act (i.e., memorizing) the Moslem is, as it were, taking the gift of God up off the book and paper in which it is enshrined and incorporating it within himself, so that it becomes for him alive and inalienably personal." It is quite true that the spoken word which is incorporated in the personality of the memorizer (hafiz). After all, the Qur'an descended as the spoken word of God.

Chapter 57: Music

"To some people music is like food, to others it is like medicine, and to others like a fan."
Alf Lailah wa Lailah

These prefatory lines, serve as they do to provide a text on the lintel of the doorway to this subject, reminds one how widely dissimilar is the attitude of Islamic peoples towards the art and practice of music

to that of others; music is indeed “like food,” since it often sustains when all else fails. You can scan Greek literature in vain for any such parallel sentiments. Music in its literal connotation was alien to Greek philosophy.

Aristoxenus certainly dealt with it, but his approach, devoid of the slightest hint of philosophic appeal *per se*, was a purely scientific one.[1] It is true that the Pythagoreans had given a foretaste of the Islamic spiritual conception of music, but that was in the dim and distant past of Greece. What is more in keeping with the Greek evaluation of this art is to be found in Athenaeus of Naucratis (fl. 200 A. D.), whose utterances are mere entertaining chatter.[2]

A. The Music in Itself

“This art...is the foraging ground of audition, and the pasturage of the soul, and the spring grass of the heart, and the arena of love, and the comfort of the dejected, and the companionship of the lonely, and the provision of the traveller, because of the important place of the beautiful voice in the heart and its dominating the entire soul.”
Ibn ‘Abdi Rabbihi, *al-‘Iqd al-Farid.*

After reading the prologue to this chapter, one cannot help realizing how vastly different are the sentiments of Islamic peoples from those of the peoples of Greece and Rome on the assessment of music. And by music we mean that art which the noblest minds in Islam believed to be capable of being informed with and ennobled by *thought*, and in turn to adorn and enforce *thought*, and to be thus understood and felt. No better example of that percipience is to be found than one in the utterances of the Ikhwan al-Safa of the fourth/tenth century of Basrah, the home of the learning, who spoke of music as “an art compounded between the corporeal and the spiritual.”[3]

To these transcendental philosophers “all the arts had bodily forms except the art of music, whose substance was a spiritual essence.” With what felicity do the “Brethren” laud that type of music “which softens the heart, brings tears to the eyes, and makes us feel penitent over past misdeeds.” How well they knew the value of those soothing melodies “that lightened the pain of disease and sickness,” and those affecting airs which “comforted the aching hearts and eased the grief of the afflicted in times of calamity.” More practical still was their recognition of those songs “that relieved the toil of heavy work and wearisome undertakings,” as well as that music which gathered “joy, pleasure, and happiness...at weddings and banquets.”[4] Indeed a veritable ocean of literature in praise of music has flowed down to us from the Islamic past, whilst poets have sung the sweetest verses in adulation.[5]

On the other hand, there have been many pious and honourable men among the legists (*fuqaha’*) who have considered music a useless pastime (*lahw*) which sometimes became an urge to commit actions which were unlawful (*haram*) or abhorred (*makruh*). Among those who condemned divine art were some of the most sincere of the Muslims, from ibn Abi al-Dunya (d. 281/894) in his “Censure of Forbidden Pleasures” (*Dhamm al-Malahi*),[6] to Shihab al-Din al-Haithami (d. 973/1565) in his “Restraint of

Impetuous Youth" (*Kaff al-Ra'a'*).[7] Nobody can censure those opponents of music who sincerely believed that it was among the things prohibited (*muharramut*), since even Christian Europe linked "wine, woman, and song" among the "idle pleasures" (*malahi*).

Yet, strictly speaking, the objections of the purists in religion to "listening to music" (*al-sama'*) has no logical *raison d'etre*. Calligraphy cannot be blamed on account of forgers, nor can accountancy be condemned because of defalcators. It would be just as illogical to forbid fruits and viands because of their concomitance with wine and woman as to censure music owing to its proximity to the latter. Music, *per se*, is neither good nor evil, although it may accompany both, yet it cannot be categorized or submitted to predicament.

In spite of all our probing and searching we still do not know the inner causes of emotion. Al-Farabi (d. 339/950) denied that music inspired a passion or soul-state.[8] His guess was that music, whether in the performer or the listener, was itself inspired by a passion or soul-state. Ibn Zailah (d. 440/1048) held much the same view. He says, "When sound (*saut*) is adorned by harmonious and mutually related composition, it stirs the soul of man...Beginning on a low note and ascending to a high note, or *vice versa*, according to a *particular* arrangement and a *known* composition, it becomes related to the sentiments of the soul of man. As one note (*naghmah*), after another changes in the music, one state after another changes in the soul.

One composition will transport the soul from weakness to strength, and another from strength to weakness...Therefore, the composition which is possessed of certain sounds is possessed of certain qualities by which the soul is influenced."[9] All that is manifest to the meanest observer, but no one has yet told us what those "qualities" are. Fakhr al-Din al-Razi (d. 606/1209) states a more "up-to-date" opinion, and this, in substance, is what he has to say, "In the animal world sounds come into existence by reason of grief, pain, or joy. Those sounds, according to these circumstances, are different, being high or low, so, the law of association, those sounds become bound up with the different mental states which prompt them. Thus, when those sounds are renewed, they inevitably call up the related mental states, which may be grief, pain, or joy."[10]

From the purely Islamic point of view, ibn Zailah also raises a point worth mentioning. He says, "Sound produces an influence on the soul in two directions. One is on account of its special composition (i.e. its physical content), the other, on account of its being similar to the soul (i.e. its spiritual content)."[11] A Persian mystic, al-Hujwiri (fifth/11th century), divides those who listen to music into two categories: those who *listen* to the material sound and those who hear the spiritual meaning. That ecstatic maintained that those who *heard* spiritually did not apprehend mere notes (*naghamat*), modes (*maqamat*), or rhythms (*iqa'at*), but music *per se*, insisting that such audition "consists in hearing everything as it is in quality and predicament."[12]

That doctrine takes us to the very core of Sufi teaching in which "listening to music" under such spiritual control conduces to ecstasy, which leads to a revelation of the Divine. Did not Schopenhauer suggest

that the world itself is but music realized, and was not that what the Ikhwan al-Safa had taught a thousand years earlier?

Yet of all the great thinkers of Islam no one has probed to the heart of the problem with such power of persuasion and solicitude of purpose, and reached a conclusion of such profundity as al-Ghaz□l□ (d. 505/1111). How penetrating are his words, "Hearts and innermost thoughts are mines of secrets and treasuries of precious stones. Within their confines are jewels which are as sparks contained in iron and steel...And there is no other way of extracting their secrets except by the flint of 'listening to music' (*al-sama'*), because there is no means of reaching the hearts except through the portals of the ears.[13] ...Verily, 'listening to music' is a factual touchstone,... for as soon as the soul of music reaches the heart, it brings out whatever pre-dominates in it."[14] That was also the dominating thought of Abu Sulaiman al-Darani (d. c. 205/820), who averred that "music and singing do not produce in the heart that which is not in it."

As our opening lines from the *Alf Lailah wa Lailah* reveal there is much more in music than its being merely an ancillary to those things which are unlawful and abhorred, and those who base their objection to music on the Holy Qur'an and the Hadith must know that they can be answered by proofs to the contrary from these identical and revered sources.[15] Ibn Khaldun (d. 808/1406), the greatest of the philosopher-historians of Islam, did not touch directly on the question of *al-sama'* in the legal aspect. We do not know his reasons for that apparent neglect, but the fact that he devotes a chapter in his *Prolegomena* to music is sufficient proof of his attitude, which was that of the rational man.

To him, man was a social animal who was good by nature.[16] It follows, therefore, that man should seek to satisfy certain natural desires in his leisure hours, such as the need for healthy relaxation, the wish to acquire knowledge, and the urge to listen to sweet music.[17] All such longings were perfectly reasonable, and since man could discern what was good or evil in those desires, he could, by experience, make such desires always beneficial both socially and spiritually, provided the *intention* in those desires were good. If that were the case, the desires were lawful.[18]

The Sufi and the *darwish* have eloquently defended their attitude in the usage of music in their ceremonials by proofs that are unanswerable by its condemners. Perhaps the most trenchant defence was made by the brother and successor of the great al-Ghaz□l□, who was known as Majd al-Din al-Tusi (d. 520/1126), and this is what he said, "If anyone says that audition is absolutely unlawful, he has declared forbidden in the law that about which no statute has come down, since no statute forbidding audition and dancing has come down in the Book of Allah, or in the usage of Allah's Apostle, or in the words of the Companions (of the Prophet). And he, who declares to be forbidden in the Law anything which is not in it, has invented something against Allah, and he who invents anything against Allah is an infidel by general agreement."[19]

Yet we, in this work, are primarily concerned with the purely secular approach, although it may unavoidably include that which is divine. Not only is the case for secular music unassailable, but the

teaching, acquisition, and practice of it can be proved to be rational since it affords healthy exercise to the body, mind and emotions. It has been said that “men die for want of cheerfulness as plants die for want of light.” And, what can supply that want better than music? Therein is refreshment for the body, cheer for the mind, and relief for the emotions, or, more grandiloquently, the repairing of lost energies, the soothing of chafed sensibilities, and the kindling of finer feelings and aspirations.

Everybody knows, especially in Islam, the wondrous power of the “beautiful voice,”[20] particularly in the reading (*qir'ah*) of the Qur'an and the chanting of the “call to prayer” (*adhan*). They give back musical impressions which not only delight the ear but thrill the soul, because that chanting harmonizes with the divine message.[21] And why should not secular music *per se* do likewise, since there seems to be a natural alliance between radiant music and moral beauty? Surely man's faculties and susceptibilities for the acquisition and enjoyment of music were not bestowed but that they should be a glory to the Giver and a joy to the possessor, for they are as essential to the social and spiritual welfare of man as the influence of the sun and rain is to be the fruitfulness of the mother earth.

“Get way from evil and sing”
(*Ab'id al-sharr wa ghanni*).

Syrian Proverb

B. The Music Lovers

“I like the man who cultivates poetry for self-instruction, not for lucre; and the man who practises music for pleasure, not for gain.”
Ibn Muqlah (d. 238/940)

Since Islam was born among the Arabs and was cradled in the Hijaz, one must give prior consideration to these two important facets. In the “Days of Ignorance” (*al-jahiliyyah*) music was practiced in the whole of Arabia by the matrons of the towns and tribes as well as by professional singing-girls (*qainat*). These not only cheered many a home and encampment, but strengthened the resolve of those in the battle throng, as we read in the *Hamasah*. Their singing (*ghina'*) was based on a simple type of song called the *nasb* which was but an improved form of camel-driver's chant (*huda'*). They accompanied themselves on an instrument of strings (*muwattar*), although more generally it was a harp-like instrument (*mi'zafa*), a percussion wand (*qadib*), or a tambourinte (*mizhar*).[22]

In default of the latter they could adapt the perforated skin sieve (*ghirbal*) for that purpose: this received the approval of the Prophet later.[23] When Islam came upon the world of intellectual darkness, the first male musician to make history was Tuwais (d. c. 88/705). He accompanied himself on a square tambourine (*daff*), and when performing would perambulate along the lines of his audience.[24]

The wide conquests of the Arab armies, notably in Persia and Syria, had sent crowds of captives into the

towns of the Hijaz. Among these were singers and players whose alien types of music captivated the people of Mecca and Medina. The result was that Arab musicians found themselves compelled to master the new kinds of singing and playing. That was only one of the many cultural influences which affected Arabian modes of life, for "when the revelations of the Prophet flashed on the world, a message was delivered which could not be confined to the Hijaz, the cradle of Islam. As a result, the banner of the Prophet was planted eastward at the extremities of Transoxiana, southward by the banks of the Indus, northward to the shores of the Black Sea, and westward on the slopes of the Pyrenees."[25]

As we march through the pages of the history of music we shall see how manifold artistic ingredients contributed to Islamic civilization. Al-Hirah, the capital of the Arab Lakhmids, had already imbibed much of Persian culture including the lute (*'ud*).[26] The Meccans had used a rustic type of pandore (*mi'zaf*) which had a parchment "face" (*wajh*), but as the Persian lute (*barbat*) had a "face" of wood, the Meccan lute was called the *'ud* (wood). The holy cities of the Hijaz resounded with strains of music and song,[27] and the artistic career of the songstress 'Azzat al-Maila' (d. c. 88/705) in the Hijaz attested to that fact.

At her auditions the greatest musicians, poets, litterati, and the most distinguished citizens, including 'Abd Allah ibn Ja'far, a cousin-germain of the Prophet, took part. Even Hassan ibn Thabit, the first poetic extoller of Islam sang her praises.[28] Among the great musicians of the glorious days of the Orthodox Caliphs (*al-rashidun*) were Sa'ib Khathir (d. c. 83/683), Hunain al-Hiri (d. c. 100/718), and Ahmad al-Nasibi, a kinsman of the poet A'sha Hamdam (d. 82/701).[29]

The Umayyad caliphs removed their capital from Medina to Damascus, where their Courts, with the exception of that of 'Umar II (d. 101/720), were thronged with singers and players. Of al-Walid (d. 126/744) it was said that "the cultivation of music spread not only among the leisured class, but with the people also."[30] Those were the flourishing days of the great *virtuosi* whose names adorn the pages of Islamic history, notably ibn Muhriz (d. c. 97/715), ibn Suraij (d. c. 108/726), al-Gharid (d. c. 106/724), and Ma'bad (d. c. 127/743), usually dubbed as "the four great singers."[31] Such was Islam, the territories of which knew no racial boundaries, which those four musicians were foreigners by blood, the first being of Persian origin, the second of Turkish descent, the third and fourth claiming respectively Berber and Negro extraction.[32]

Because of such a large-hearted tolerance of racial differences it is quite explicable why the hybrid and exotic in music became an allurement and fascination. Through Islam the technical nomenclature in music was almost wholly Arabic, and that was still the case when the first Persian treatises on music appeared in the eighth/14th century.[33] Still, the Arabs borrowed the Persian *chang* (harp) which they confusedly called the *sanj* and *jank*. They also adopted the Persian tuning (*taswiyyah*) of the lute, and the frets (*dasatin*) on the neck of the instrument.[34]

When the first of the 'Abbasid Caliphs, al-Mansur (d. 158/755), built that wondrous city of Baghdad, it soon became not only the capital of the vast dominions of the Caliphate, but the cultural centre of Islam. The early 'Abbasid period has well been styled "the Augustan Age of Arabian literature,"[35] although an

even greater encomium could be justly used in respect of music during that era, if we take the golden pages of the "Great Book of Songs" (*Kitab al-Ahani al-Kabir*) as our authority. The first outstanding 'Abbasid minstrel was Hakam al-Wadi (d. c. 180/796), a singer and performer who carried all before him.[36]

Almost as exquisite were the vocal accomplishments of ibn Jami' (d. c. 189/804).[37] He had been taught by the doyen of the Court minstrels, Yahya al-Makki (d. c. 215/830), the fountain head of the old music of the Hijaz. Indeed his "book about the Songs (*Kitab fi al-Aghani*) was a repository of the classical art;[38] his son Ahmad (d. 250/864) issued a revised edition of 3,000 songs[39] Greater still was Ibrahim al-Mausili (d. 189/804) who outshone all others by his versatility. Nine hundred compositions stood to his credit, whilst his training school for singing girls became renowned.[40]

Fulaih ibn Abi al-'Aura' was another favoured singer, being the only one allowed to appear – professionally – without the customary curtain (*sitar*) which screened the musicians from the Caliph. Fulaih, with Ibrahim al-Mausili and ibn Jami', compiled a collection for Harun al-Rashid known as "The Hundred Chosen Songs" (*al-Mi'at al-Saut al-Mukhtarah*).[41] Prince Ibrahim ibn al-Mahdi (d. 224/839)[42] and his step-sister Princess 'Ulayyah (d. 210/825)[43] had both been carefully trained in music at the instance of Caliph Harun, at whose Court music received so munificent a patronage that it set the whole world in wonderment.

Prince Ibrahim possessed a voice with a compass of three octaves, and was considered the "most proficient in mankind" in that art.[44] By that time the impingement of Persian and Khurasanian novelties in music became quite pronounced. Singing girls from Khurasan were "the rage." They performed on a long necked pandore (*tanbur*) which gave an alien scale, whilst the Persian lute produced a scale that was dissonant to the Arabian system, as we shall see in Section C. Prince Ibrahim and his henchmen favoured these exotic ideas, and even applauded the open violation of the recognized patterns in both the melodic and rhythmic modes.

This defiance of the old classical procedure divided the Court minstrels into two camps, viz. the "Romanticists" led by Prince Ibrahim, and the "Classicists" headed by the chief Court minstrel Ishaq al-Mausili (d. 235/850), the most famous of the musicians of the Muslim world.[45] Against those neoteric fancies, Ishaq took a firm stand, and eventually was able to re-establish the old Arabian scale and modes, which seem to have been set down in his "Book of Notes and Rhythm" and his "Great Book of Songs."[46]

After the mid-third/ninth century, the Baghdad Caliphate began its political decline, although music still prospered at its Courts. Al-Mutawakkil (d. 247/861) gave constant encouragement to that art. His son, Abu 'Isa 'Abd Allah, was an accomplished musician and a composer of some 300 songs.[47] Al-Muntasir (d. 248/862) was both a poet and a musician; the words of his songs have been preserved in al-Isfahani who devotes a chapter to him.[48] Another such devotee was al-Mu'tazz (d. 255/869), whose songs have also been saved for us.[49] His son, 'Abd Allah, was a highly gifted musician who penned a

"Comprehensive Book on Singing" (*Kitab al-Jami' fi al-Ghina'*), the first of its kind, although Prince Ibrahim too, had written a "Book on Singing."[50]

Yet if the Court minstrels did not produce *virtuosi* of the same class of old, that defect was overcome by their pens, notably by ibn Tahir al-Khuza'i (d. 300/913) who wrote a "Book about the Modes and the Reasons for the Songs" (*Kitab fi al-Nagham wa 'Ilal al-Aghani*),[51] Qurais al-Jarrahi (d. 326/936) in his "Art of Singing and Stories of the Sinbers" (*Sina'at al- Ghina' wa Akhbar al-Mughanniyyin*), Jahzat al-Barmaki (d. c. 328/938) who published a "Book of Pandorists" (*Kitaqb al-Tanburiyyin*), and the great al-Isfahani who produced "The Propriety of Listening to Music" (*Adab al-Sama'*).[52]

Turning to the west, we see the same high cultural uplift in Muslim Spain as in the home of the Eastern Caliphate. After the Arabs and Berbers had conquered (91/710) the Iberian Peninsula, a vast portion of the land was held by them until the year 479/1086 and during that period, especially under the Umayyad rulers, music and all the arts were cultivated ardently. Singing girls, called *jariyyat*, were in great demand, and schools for their training had been established.[53] Yet those who came from the East were especially favoured, such as the famed lutanist 'Afza' at the Court of 'Abd al-Rahman I (d. 172/788),[54] while al-Hakam I (d. 206/822) was especially proud of 'Uklun and Zarqun.[55]

His chief male minstrels were 'Abbas ibn Nasa'i and Mansur al-Yahudi.[56] Concerts were the "order of the day."[57] At the palace of 'Abd al-Rahman (d. 238/852), there arrived in the year 206/821 the world famous Ziryab, who was treated with unheard-of esteem, for he had been taught by Ibrahim and Ishaq al-Mausili in Baghdad. He was credited with knowing 10,000 (1,000?) songs by heart, and for being the equal of Ptolemy in his knowledge of music. It was he who added a fifth string to the lute, linking it – in the cosmic system – with the soul. The musical system in al-Andalus was that of the Arabian east, the scale being the Pythagorean. Zirab's music school – which had some reputation – was carried on after his death by his descendants, and was still flourishing in the days of the "Party Kings," while traces of it could be found in North Africa in the eighth/14th century.[58]

Under 'Abd al-Rahman III (d. 350/961) we have an anomalous situation of the Court outwardly condemning music – so as to placate the Maliki legists who frowned on music – but inwardly patronizing it, since he encouraged his children not only to dabble in the art, but to rise virtuosity. One of them excelled on the pandore (*tanbur*) and guitar (*kaitarah*),[59] whilst another, Abu al-'Asbagh, said that so long as Allah permitted birds to sing he would do likewise.[60] In the reign of al-Hakam II (d. 366/976) concerts became special events,[61] and under al-Mahdi (d. 400/1009 orchestras of a hundred lutes (*idan*) and as many reed pipes (*zumar*) could be heard in the palace salons.[62] Those were the brilliant days of ibn 'Abdi Rabbihi (d. 328/940) who, in his *al-'Iqd al-Farid*, gave Muslim Spain some idea of the greatness of the music of the Eastern Caliphate. He was a veritable treasure-chest of Andalusian poetry and song.[63]

We know little of Persian music in those early days save what may be gleaned from the *Muruj al-Dhahab* of al-Mas'udi (d. c. 345/956), who quoted ibn Khurdadhbih (d. c. 300/912).[64] As we have seen,

both Persia and Arabia borrowed from each other in matters musical, and we know that Persian as well as Arabian music was being taught at Rayy in the time of Ibrahim al-Mausili.[65] Certainly there were several brilliant writers in music in Baghdad who were of Persian origin, notably al-Sarakhsi (d. 286/899)[66] 'Ubaid Allah ibn 'Abd Allah ibn Tahir (d. 300/913),[67] and Zakariya al-Razi (d. 313/925).[68] A famous singer of the Tahirid period was Ratibah of Nishapur,[69] and so also was the renowned Rudagi – patronized by the Samanid Nasr II (d. c. 331/942) – a lutanist and harpist, as well as a singer and poet.[70]

Most of the contemporary poets, such as al-Mi'mari of Jurjan and al-Daqiqi of Tus, sang in rapturous praise of music.[71] Persian music percolated everywhere, Turkomanian influence also made itself felt. The Caliph's praetorian guards at Baghdad and elsewhere were made up of men of Turkoman race, and they dominated in most things. In such circumstances it can be well understood how Turkomanian music, especially on the instrumental side, was highly appreciated. A lute-like instrument called the *rud* was favoured by them, and an arch-lute the *shahrud*, invented by Khulais ibn al-Ahwas of Samaraqand about 306/918, had already spread to Iraq, Syria, and Egypt.[72]

In Egypt under the Tulunid and Ikhshidid rulers of the third/ninth and the fourth/tenth centuries, Turkoman influence spread by leaps and bounds, and music was enjoyed by all. Ibn Khallikan praises the excellent voice of ibn Tulun when chanting the Qur'an, while his son Khumarawaih actually adorned his palace walls with pictures of his singing girls.[73] The art rose to greater heights under the next rulers. Al-Mas'udi delineated a delightful scene at a palace by the Nile in 330/940 in which the "sounds of music and singing filled the air."[74] Kafur (d. 357/968) was devoted to music and was liberal-handed to its professors.

What was this music of Islam, enthralling sounds of which charmed all ears from Bukhara in the east to Cordova in the west? Obviously, there were linguistic differences and indigenous musical preferences in so vast a region. Yet Islam, because of its universal outlook, had leavened some of those diversities. Basically, the scale of all was the Pythagorean, as we shall learn presently.[75] Yet Arabic technical terminology seems to have had dominion everywhere, as one sees in the term *maqam*. Unmistakably, Baghdad was still the artistic and literary centre, for even Abu Bakr al-Kativ, who served the Samanid Isma'il ibn Ahmad (d. 295/907), saw in Iraq "an ocean of learning and a mine of culture."[76]

If one scans the *nisbahs* of the great men of literature, science, art, and music who sought Baghdad to win fame and fortune, it becomes clear what a magnet the "City of Peace" had become to the world of Islam.[77] To the Arabic-speaking peoples, vocal music was the peerless art. Part of that was due to the beauty of the language, *plus* the allurement of its variegated metres. The outstanding vocal piece was the ode (*qasidah*). Within its folds a singer could decorate the melody of each verse with endless embellishments (*tahasin*). Less classical, but far more popular was the ballad (*qit'ah*). There were also folk songs of the *mawal* type, and we know that even the Caliphs enjoyed the simple songs of the people.[78]

The accompanying instruments were generally the lute, pandore, flute (*qassabah*), or reed pipe (*zamr*), which played the simple melody, whilst the rhythmic accompaniment was furnished by a tambourine or drum. Purely instrumental items were also featured, especially as interludes between vocal items. When these were combined the performance was termed a *naubah*.[79] Although we read occasionally of a hundred or so performers at Court functions, such events were for special display. The ideal in ‘Abbasid days when listening to music was what Europe would term “Chamber music.” Two other instruments, which had independent usage were the psaltery (*qanun*) and the rebec (*rabab*). The former was a special solo instrument, whilst the latter was often used to accompany the chanted verse of poets, which had been its function in pagan days.

Since Arabic was still the language of the “classes” in Persia, one imagines in which much has passed from the immaculate and indefectible in Arabic poetry and song was heard in Iranian lands as late as the fourth/tenth century, notably under the Saffarids and Samanids. The Persians, less intrigued by the lengthy Arabic ode (*qasidah*), produced a pure love song (*ghazal*) and the quatrain (*ruba‘i*), one class of the latter, the *ruba‘iyy taranah*, showing its musical adaptation. The melodic modes in Persia were far more numerous in different tonal structures than those of the Arabs and they retained their older fanciful names such as *‘ushshaq, Isfahan, salmaki*, etc. although most of them had scalar affinities with the Arabian finger modes (*asabi‘*). Their most favoured instruments were the harp (*chang*), pandore (*tanbur*), lute (*barbat*), double chested lute (*rabab*), spiked voil (*kamanchah*), flute (*nay*), and tambourine (*da’irah*).

The Baghdad Caliphate had gone into the protective custody of the Persian Buwaihids (320 – 404/932 – 1015), at whose palaces – as well as at those of the Caliphs – music was subventioned with liberality. In fact, the regime of ’Izz al-Daulah was condemned because of its infatuation for music.[80] ‘Adud al-Daulah was more discreetly interested in the art.[81] However, the power of the Baghdad Caliphate – both politically and culturally – was gradually slipping away, and the centre of Islamic culture passed meanwhile to the Fatimids of Egypt. Here Amir Tamim, the son of al-Mu‘izz (d. 365/975), was absolutely appassioned of music,[82] and no less could be said of al-Zahir (d. 427/1036), who spent fabulous gold on minstrels.[83]

The Persian traveller Nasir-i Khusrau wrote about the splendour of the Fatimid military bands a little later.[84] One of its famous men, al-Sadafi, better known as ibn Yunus (d. 399/1009), wrote a book the title of which sparkles with delight. It was called the “Book of the Unanimities and Felicities in the Praises of the Lute” (*Kitab al-‘Uqud w-al-Su‘ud fi Ausaf al-‘Ud*).[85] Another, great historian, al-Musabbihi (d. 420/1029), compiled a book of “Selected Songs and Their Significance” (*Mukhtar al-Aghani wa Ma‘aniha*).[86] We still discern the Turkomanian pressure on Egypt’s music, due to the crowd of men from the Qirghiz steppes in its army, and that was only one facet of the “new phase of culture” which arose in Egypt in those days.[87]

Although Muslim Spain had “advanced with incredible swiftness to a height of culture that was the envy of Europe,” the break-up of the central government and the rise of the “Party Kings” halted the progress

of the arts for a time. Yet here and there were some hallowed spots of culture. Indeed, a few of these "Party Kings" (*muluk al-tawa'if*) 'made their Courts the homes of poets and minstrels," as al-Maqqari testifies. The last of the 'Abbasid kings of Seville, al-Mu'tamid (d. 484/1091), was not only a distinguished poet, but a singer and a lutanist, as was his son 'Ubaid Allah al-Rashid.[88] The song-poems of ibn Hamdis (d. 527/1132) were the delight of the Sevillians. When the Almoravid Berber hordes from the Maghrib suppressed the "Party Kings," music came to be looked upon as one of the "wiles of Satan," although the older Muslim inhabitants took little heed of such rebukes.

Their successors, the Almohades, under the *fiat* of ibn Tumart (d. 524/1130), made decrees against music more stringent, even to the destruction of instruments. Yet there were many who opposed these fanatical legists, including ibn Quzman (d. 555/1160), the song-writer *par excellence*, who chided with puritans saying, "The *faqih* cries 'Repent'; but how can one be contrite with the air so fragrant, the birds warbling, the flowers perfuming, and music (*ghina*) from a clever reed-piper (*zamir*) and a heavenly voice?" Yet, in spite of fulminations, music and songs were heard on every side.

The newly fashioned *zajal* and *muwashshah* were so easy to set to melodies that the same tune would be adapted to different words, as ibn Quzman tells us, and songs spread like the wind in the matter of months as far afield as Baghdad, as ibn Sa'id al-Maqhribi (d. 685/1286) avers.[89] Among the best known Andalusian composers were Abu al-Hussain al-Hamrah al-Qarnati and Ishaq ibn Sim'an al-Qartabi. The highest in the land were enchanted by the art. Ibn Bajjah (d. 533/1138), according to ibn Khaqan, "spent his life singing and playing," whilst a celebrated physician Yahya ibn 'Abd Allah al-Bahdabah, wrote *zajals* for the accompaniment of wind instruments.[90]

Returning to the hub of Islam, we find that the Saljuq Turks had irrupted into the land, Baghdad having been entered in 447/1055. Their rulers took charge of the Caliphs, and they and their later *atabegs* controlled the world of Islam from the borders of Afghanistan to the frontiers of Greece. All of them were keen lovers of music, and the favoured minstrel of Sanjar (d. 552/1157) was Kamal al-Zaman, whose cognomen indicates his renown.[91] Further east the Ghaznawids and Ghurids were patronizing minstrelsy at their courts. Mahmud of Ghaznah (d. 421/1030) had the poet Farrukhi as his panegyrist, who was also a "skilful performer on the harp" (*chang*).[92]

Among the Ghurids of Afghanistan and Hindustan, especially at the Court of Ghiyath al-Din ibn Sam (d. 599/1200), music was encouraged bountifully.[93] Greater still was the favour shown to the art by 'Ala al-Din Muhammad (d. 617/1220), the Shah of Khwarizm, who gave Fakhr al-Din al-Razi protection.[94] In Baghdad the chief minstrel of the Caliph al-Musta'sim (d. 656/1258) was Safi al-Din 'Abd al-Mu'min (d. 693/1294). His greater fame is an author notably for his "Book on Prosody" (*Fi 'Ulum al-'Arud w-al-Qawafi w-al-Badi'*), but greater still for his two books on the science of music which brought him world renown.[95] In the year 656/1258, the Mughul conqueror Hulagu, invaded the famous city of Baghdad, the centre of the world of Islam, and captured it. Ibn Khaldun avers that 600,000 inhabitants were slaughtered, including the Caliph and his family, and although Safi al-Din was spared because of his

eminence as a musician, scholars and *litterateurs* were massacred as cruelly as libraries, colleges, and palaces were destroyed.

These Mughul barbarians, who had become masters from the borders of Egypt to India, were converted to Islam, and, softened by its culture, they made music one of the delights of their Courts, and the murdered Caliph's minstrel, Safi al-Din, passed into the service of the Mughul vizier Shams al-Din al-Juwaini. Ibn Taghribirdi tells us that Abu Sa'id (d. 736/1335) "cultivated music, played well on the lute, and composed songs," and ibn Battutah (d. 778/1377) describes the royal galley at Baghdad, flanked by boats filled with musicians and singers.[96] By this time Persian, not Arabic, had become the language of art and science in the Middle East, and from Persian works we are able to see what types of instruments were in vogue.

In addition to the older lute and pandore was a new arch-lute (*mughni*) and a rectangular psaltery (*nuzha*), together with a Turkoman viol (*ghishak*), whilst the pandore was more particularly described as a two-stringed (*dutar*) or a three stringed (*sitar*) instrument.[97] It was Egypt alone that offered a stubborn resistance to the Mughuls, and its Mamluk Sultans, like their predecessors, the Ayyubids, favoured music and song. Here the *muwashshah*, had been popularized by ibn Sana' al-Mulk (d. 608/1211) in his *Dar al-Tiraz*, and al-Saruji (d. 693/1294) bettered the instruction as a song-writer, while ibn Mukarram (d. 711/1311) edited a collection of older songs which had wide acceptance.[98]

Al-Nuwairi (d. 732/1332) also devoted much attention to the subject in his *Nihayat al-Arab*.[99] It was the Sultan Qala'un (d. 689/1290) who built the hospital (*maristan*) at Cairo, where "music soothed the wakeful hours to the sufferers."[100] An outstanding feature of the Bahri and Burji Mamluk Sultans was their military bands,[101] which opened the eyes of the Crusaders to the value, both tactically and musically, of martial music.[102]

Sind had been conquered by Muslim armies as far back as the year 92/711, but it was with Ghurids of Afghanistan that modern Pakistan had is real foundation 571/1175 at the hands of Muhammad Ghuri (d. 602/1206). Here, the powerful *fuqaha'* were able to enforce views in condemnation of music upon Iltutmish, the Sultan of Delhi (d.633/1235), who, later, having been impressed by the *sama'* of the Chishti *darwish* fraternity, soon abolished that ban against the art, when the plaintive chanting of its *qawwals* became a distinctive feature throughout the land, as we know from the *Siyar al-Auliya'*. Secular music was openly encouraged by Firuz Shah I (d. 634/1236), and the *Tabaqat-i Nasiri* says that his bounty to musicians led him to be called "a second Hatim."

Under Balban (d. 686/1287) one evening per week was devoted to audition of music. The succeeding Khalji Sultans, the first of whom was Firuz Shah II (d. 696/1295), were all music-lovers. At the Court of the latter were Hamid Rajah, Nasir Khan, and Muhammad Shah Hutki, all noted musicians, although the greatest of them all was Amir Khusrau (d. 725/1325), who was "no less notable as a musician than a poet." He had served at the Courts of the two preceding Sultans. In his *Qiran al-Sa'dain*, he has described the Court music of his time. In the *I'jaz Khusrawi*, he tells of the rivalry between the Khurasan

and Hindustan minstrels at Court. It is said that a fusion between Persian and Indian music was brought about by him, and in the book called *Rag Darpan* many novelties in music are attributed to him.

Music was still to the fore with the Sayyid dynasty, and Mubarak Shah II (d. 837/1433) was deeply attached to the art. On the elevation of the Lodhi Sultans to the throne in 855/1451 there was a change of attitude towards music. Yet Sikandar II (d. 923/1517) employed four exceptional performers on the harp (*chang*), psaltery (*qanun*), pandore (*tanbur*) and gourd-lute (*bin*), only the last named instrument being of indigenous origin. In the extreme north the kings of Kashmir were ruling a famed "land of song" since 735/1334. Among the most cultured of them was Zain al-'Abidin (d. 872/1467), during whose reign music schools were established by Persian and Turanian teachers, which won some celebrity.

In the Deccan, one of the kings of Gulbargah named Taj al-Din Firuz Shah (d. 825/1422) had 700 damsels who were skilled musicians and dancers. His brother, however, was never absent from the *darwish* ceremonials, where the religious chant gave him contentment of a different kind. Both Ahmad Shah I (d. 839/1435) and Ahmad Shah II (d. 862/1457) were captivated by their Court minstrelsy, and the wife of the latter, says Firishtah, was without equal in her musical accomplishments. The singers and dancers of Muhammad Shah II (d. 887/1482) came from Georgia, Circassia, and Albyssinia. So indulgent was his successor Mahmud Shah II (d. 924/1518) in his passion for music that minstrels were attracted to his Court not only from Delhi and Lahore, but also from distant Persia and Khurasan. Truly, Muslim India was in the forefront in music among her sister nations.[103]

Persia was reawakened culturally under the beneficent Muzaffarids. The renowned Shah Shuja' of Shiraz (d. 786/1384) patronized the minstrel Yusuf Shah and the music theorist al-Jurjani (d. 816/1413). The art was particularly conserved by the Jalairid Sultans of Iraq. Hussain (d. 784/1382) actually neglected his realm through his abiding love for music, whilst the greatest living musicians, Ridwan Shah and 'Abd al-Qadir ibn Ghaibi (d. 840/1435), were the chief Court minstrels of Sultan Ahmad (d. 813/1410).[104] When Timur (d. 807/1405) had accomplished his world-wide conquests, most of the above kingdoms passed into the night, and Samarqand became the artistic as well as the political centre of the Timurid Empire.

During the reign of Shah Rukh, (d. 850/1447) the Court minstrelsy rose to perfection, and the *fetes* have been eloquently described by 'Abd al-Razzaq.[105] Yusuf-i Andakani was his favoured minstrel for he "had no equal ... in the seven climes."[106] Miran Shah (d. 810/1408), the brother of Shah Rukh, was also infatuated with music as discoursed by al-Khatib al-Mausili and Ardashir-i Changi. Baisunghur (d. 836/1433), the son of Shah Rukh, was devoted to Amir Shahi (d. 857/1453), possessed of three-fold talents as minstrel, poet, and painter. Under the guidance of the vizier Mir 'Ali Shir (d. 907/1501) the rule of the last of the great Timurid rulers Hussain Mirza Baiqara (d. 911/1506) became the byword of the cultured world of Islam, and the names of his minstrels – Qui-i Muhammad, Shaikhi Nayi and Hussain 'Udi – became a part of history.[107]

In Muslim Spain, in spite of the increasing re-conquests by the Spaniards in the seventh/13th century,

the Moors still held that part of the land known as Granada. Here they were hemmed in from all sides, and in 897/1492, they were forced to capitulate. Then followed the most despicable persecutions and ruthless destruction of Arabic literature which had been treasured for centuries. Moorish music and instruments were declared *anathema*, although that did not prevent the Moors from finding solace from their woes in their music. All that the Spanish priesthood could do was to issue edicts forbidding their congregations to listen to those *mouriscas* and *aravias* of the Moors.[108] In the mid-tenth/16th century, they were not only denied their national costume, language, and customs, but forbidden the *zumrah* and *lailah*, i.e. the musical gatherings.[109]

The whole of the Maghrib – from Morocco to Tunis – had been deeply influenced by the culture of Andalus, and both the Marinid rulers of Morocco and the Hafsid rulers of Tunis had encouraged music at their Courts. Yet more bountiful was the revivification of the art due to the exodus of the Muslim exiles from Spain. The first of these arrived at Tlemcen after the fall of Cordova in 633/1236, followed by another to Tunis at the capture of Seville in 646/1248. Then came refugees to Tetuan after the submission of Granada in 897/1492, which was succeeded by an emigration to Fez from Valencia in 943/1526, and finally the wholesale expulsion of 1018/1609.

These newcomers brought a cultural benefit to the Maghrib, and the Moriscos became the artistic and literary aristocracy of the land. In music, one can actually trace the regional variations in classical Granati or Andalusi art to those immigrants. The Cordovan interpretation belongs to Algiers and Tlemcen, the Sevillan style is that of Tunis, while the Granadan and Valencian modes are to be fund in Fez and Tetuan.[110]

The Ottoman Turks now became a power in the world of Islam to be reckoned with. Having settled originally in Anatolia, they soon extended their power in every direction, and by the year 857/1453 Constantinople and the whole of the Byzantine Empire were in their hands. After defeating the Shah of Persia, they took Kurdistan and Mesopotamia into their hegemony, finally to overrun Syria, Egypt, and Arabia after crushing the Bahri Mamluks in 922/1517. From that date Turkish music began to assert itself gradually in Arabic-speaking lands and beyond, even as far as Tunis and Algiers where Turkish *beys* and *deys* were masters.

From remote times to *ozan* or bard of the Turkish tribes, with *chogur* or *qopuz* in hand – they were lute-like instruments – entertained the people with the *turku* or folk-song. That had not changed, but a new era had dawned since Constantinople had become – by edict only – the pivot of Islam, and it was no wonder that artists, musicians, poets, and literary men should have sought fame and fortune in the new capital, as well as in the *pashaliks* of Cairo, Damascus, Mosul and Baghdad. Instrumental music had ever delighted the Turks, and the overture (*pishrau*) and the decorative "divisions" (*taqasim*), which had been constituent parts of the old Perso-Arabian *naubah*, were in great demand.

The poets sang eloquently of the joy of instrumental music in the ninth/15th century, notably Nizami of Quniayh and Ahmad Pasha, and Sultan Murad II (d. 855/1451) enticed the finest minstrels to his Court.

Nor should we allow the influence of the *maulawiyyah* or Jalaliyyah dervish communities, founded by Jalal al-Din Rumi (d. 672/1273), to escape our notice, since they hymns (*ilahis*) had a great spiritual influence. In the next century, the poets Fighani, Fusuli, and Rewani still continued to rhapsodize on music's spell. The instruments praised were mostly of Arabian or Persian origin, although the Turkish *qopuz* had its share of appreciation.[111] New instruments came on view.

Quduz Farhadi invented the *qaraduzan*, a lute of three strings, and a son of Hamdi Chelebi (d. 915/1509) introduced two new pandores called the *yonqar* and *yaltmah*.[112] During the 11th/17th century music took a prominent part in the general cultural improvement, as we know from a manuscript of Cairo by Mulla Muhammad ibn As'ad, of the time of Sultan Ahmad (d. 1026/1617), which contains the lives of the famous Turkish musicians.[113] Ewliya Chelebi was famed in those days. His teacher was 'Umar Gulshani, who was taught by Ibrahim Gulshani of Cairo (d. 940/1533). The description of the musical life of Constantinople is contained in the "Travels of Ewliya Efendi" (*Siyahat Nameh*); much of it, based as it is on the *Ausaf-i Qustantiniyyah* (Praises of Constantinople) composed in the year 1048/1638, gives precise details of musicians and instruments, guilds and makers, in the great emporium of the Near East.[114]

In that century there arose the poet-minstrels (*saz sha'yrleri*) who were honoured not only in military but also in religious circles. One direct influence from outside came after the capture of Baghdad in 1048/1638 by Murad IV, who took back with him to Constantinople the Court minstrel of the Persian Shah 'Abbas I, named Shah Quli, whose performances on the *shashtar* had pleased him.[115] The late Ra'uf Yekta thought that the advent of Shah Quli "opened a new era in the history of Turkish music."[116]

In the Muslim east the 'Adil Shahs of Bijapur, the first of whom was Yusuf 'Adil Shah (d. 916/1511), were revealing themselves as munificent patrons of musicians. Yusuf 'Adil Shah had a skill in music almost equal to that of a professional and even essayed composition. Isma'il (d. 941/1534) rather favoured Turanian and Persian music at his Court. *Per contra*, Ibrahim I (d. 965/1557) preferred the arts of the Deccan. Ibrahim II (d. 1035/1626) is claimed to have written a work on music called *Nauras* with an introduction penned by Zuhuri, the Persian poet (d. 1027/1618).

The Qutbi Kings of Golkunda were no less enthralled by minstrelsy. Sultan Quli (d. 940/1543) brought Persian customs to his Court – which lasted 40 years – and his military *naubah* sounded at the five hours of prayer. In those days the Gwlior School of Music was the subject of conversation. Its renown was due chiefly to Rajah Man Singh (d. 932/1517), and the most famous of its students was Tan Sin, who had been taught by Muhammad Ghauth. Another of the same circle was Bakhshu, whose *dhurpads* became the repertory of the best minstrels. When Babur (d. 936/1530) became the first of the Mughul Emperors of Hindustan (India), most of the preceding dynasties were absorbed. He had been reared in Courts where music prevailed.[117]

From the statements in the *Babur Nameh* it would seem that the Emperor was even a composer, and it is believed that his compositions once existed.[118] His son Humayun (d. 963/1556) also encouraged

music, and sincerely believed that the Sufi dance was the complete expression of the *hikmat-i ilahi*. At Court, musicians had their special days for audition, and some of them – ‘Abd Allah Qanuni, Muhammad Surna’i, and the vocalists of Hafiz Dost Muhammad Khwafi and Ustad Yusuf Maudud – are registered in the *Akbar Nameh*. The Court of the renowned Akbar (d. 1014/1605), as described in the *A’in-i Akbari* of Abu al-Fadl, shows how important music was both to the policy and the taste of the Emperor.

The musicians were formed into seven groups, 36 of whom are named in Abu al-Fadl’s work. He was catholic in his choice for not only were minstrels selected from famed Kashmir and Gwalior, but the best of them came from Herat and Khurasan, and they were singers, chanters, and instrumentalists. More than half of these had Muslim names. The Emperor is said to have himself composed 200 items of music. Among the art treasures of his day there is one depicting the arrival of Tan Sin at his Court. Abu al-Fadl tells us of the widely spread net that was cast to capture the best of vocal music – the *dhurpad* of Gwalior, the *chind* of the Deccan, the *qual* and *taranah* of Delhi, the *kajri* or *zikri* of Gujrat, the *bangula* of Bengal, and the *chutkalah* of Jaunpur.

Jahangir (d. 1037/1627) followed his father in his love of music, has favoured minstrel being Shauqi, who sang Hindi and Persian songs in way that “cleared the rust from human hearts.” There is a portrait of him in Fox Strangway’s *Music of Hindustan*.[119] Many other musicians of Jahangir’s Court are mentioned in the *Tuzuk-i Jahangiri* and the *Iqbal Nameh*. In the first named work is described the military band of this Emperor. Shah Jahan (d. 1068/1658) made the Court music one of the glories of his reign. It was he who collected the *dhurpads* of the Gwalior composer Bakhashu, which numbered one thousand items. On the wedding of his son, Aurangzib (d. 1119/1707), he expended a small fortune on music alone.

Alas, when Aurangzib ascended the throne he dispensed with his Court minstrelsy, to the dismay of the people at large. Fortunately, Bahadur Shah (d. 1124/1713) reinstated the musicians and raised them to *mansab* ranks. By this time, owing to internecine strife, the great Mughul Empire began its political and cultural decline.

Of the state of music in Persia during the 11th/17th century, we know but little save what the pictorial art reveals, although at the brilliant Court of ‘Abbas I (d. 1038/1629) the older instrumental art still held its own.[120] Four European travellers – Raphael du Mans, Chardin, Poullet, and later Kaempfer – supply many important details. A picture of the Court minstrels of Safi I (d. 1052/1642) – actually portraits – has been preserved.[121] Persia seems to have been less troubled by the objections of the legists to *al-sama‘* than was the case elsewhere. Perhaps they still remembered Hafiz who once said, “When the harp is sounding who cares about the objector?”

Yet there were some Persians, for example, Muhammad ibn Jalal Ridwi (d. 1028/1619) and ‘Abd al-Jalil ibn ‘Abd al-Rahman (d. 1061/1651), who replied at length to the legists.[122] Incidentally, Chardin shows that the Indian *vina* was used in Persia as the *kingira*,[123] and even Mersanne (1046/1636) delineated it in Europe.[124] Strangely enough, it is mentioned by the Arabic writer al-Jahiz (d. 255/869), who writes it – probably a scribal error – as *kinkila*, and it is also specified by al-Jurjani (d. 816/1413).[125] By the

12th/18th century, when Nadir Shah (d. 1160/1747) brought a brief resurgence to Persia's greatness, many had disappeared, although the dulcimer (*santir*) found a place.

Iraq and Mesopotomia, now in the hand of the Turks, favoured only the Turanian art. Baghdad was the centre of this imported culture, and it spread to Hillah and Basrah. To the north, Kurdish tastes prevailed. The most artistic centres were those where the Mamluk pashas had control, and where Georgians and other Caucasians were given preferment, which meant that quite a new Oriental type of music gained ground.[126] Karsten Niebuhr, after visiting Baghdad in that century, gave a fair description of its music. He noted the use of what he called a *base continue* by accompanying instruments, although he seems to have meant a *point d'orgue* or pedal point.[127] He mentions and delineates three types of pandore, and the rectangular and spiked viols.

Syria was little better off, as we know from the books of Alexander and Patrick Russell written the 12th/18th century.[128] They aver that the Allepans were "fond of music," and in their performances the instruments generally were well in tune, and...kept excellent time.

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12. Koshf al-Mahjub tr. R. A. Nicholson, Brill,m Leiden, 1911, p. 403.
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Chapter 58: Music (continued)

C. The Music Theorists

"There is one and the same principle which, if prevailing in the at tempered particles of the elements, is equipoise of temperament, *if produced in tones in pure and delightfully interval*, if apparent in gesture is grace, if observable in languages in rhetoric and eloquence, if created in the limbs is beauty, if the mental faculties is equity."
Jalal al-Din Dawwani: *Akhlaq-i Jalali*.

In addition to those who conceived music to be "like a fan" on a sultry day were those to whom it was "like medicine," as we have heard in the opening fanfare to this chapter. That was precisely how the Pythogoreans viewed music, and it was from them that the notions of the "theory of numbers," the "harmony of the spheres," and the "doctrines of the ethos (*tathir*)" were handed down to Muslim peoples as methodical systems, although the history of the Semitic and Aryan races in pre-Islamic days teems with those beliefs. In fact, the Greeks derived their theses on those matters from the ancient Semites of Babylonia-Assyria, as shown elsewhere.1

Iamblichus affirms that Pythagoras learned those secrets from the *Chaldaei* of Babylon,2 and books on music and arithmetic by Pythagoras were known in Arabic,3 as were the works of his disciples Iamblichus, Porphyry, Proclus and Nicomeachus.4 Perhaps the first impact came through the pseudo-Aristotelian production known as the "Book of Government" (*Kitab al-Siyasah*), said to have been translated into Arabic, *via* Syriac, by Yuhanna ibn Batriq (d. c. 200/815),5 and this is what we read therein on the influence of music and the harmony of the spheres. Mental diseases are amenable to cure by means of musical instruments which convey to the soul the harmonious sounds which are (ultimately) due to the motions of the spheres in their natural movements.

When those harmonious sounds are interpreted through human agencies, they produce music which is enjoyed by the human soul, because the harmony of the spheres is mirrored in the harmony of man's nature, which is fundamental to life. That work was translated from Arabic into Latin as the *Secretum Secretorum* about the year 530/1135, and won considerable popularity during the European Middle

Ages.[6]

Following Pythagoras, the cosmic order of things was explained under the proposition that “everything is number,” and since mundane music was among the ectypes of numerical proportion, the harmonious order of things covered both melody and rhythm, the various *genres* of which could banish depression, assuage grief, halt passion and cure sickness. The theory of numbers fascinated Muslim peoples because, unlike geometry, which depended on visual appreciation, it was purely mental sciences. The Pythagorean scale in music, which was based on the “theory of numbers,” was known quite early to the Persians and the Arabs, and the Khurasanians even improved on it.

Islam, having no racial boundaries, the special musical characteristics of the Persian, Arab, Syrian, and Turkoman found open acceptance in the capitals and cities of the Caliphate. Because of these national peculiarities it soon became evident that some sort of fixation of method and system was urgent, and this expediency was brought to fruition by an Arab named ibn Misjah (d. c. 97/715) who, having travelled in Syria and Persia and taken lessons from practitioners and theorists, conceived a system of music theory and a method of practice which were adaptable to existing conditions in Arabic-speaking lands. These, we are told, were adopted generally.[7]

Thus were the eight Arabian melodic modes (*asabi‘*) classified in two groups of four each: the first in the course (*majra*) of the *binsir*, i.e. using the major third (408 cents), and the second in the course of *wusta*, i.e. using the minor third (294 cents).[8] At the same time eight rhythmic modes (*iqa‘at*) were formulated, also in two groups of four each, those numbers being in accordance with cosmic theories. All the song books of the period, from Yunus al-Katib (d. c. 148/765) to al-Isfahani (d. 356/967), specify the melodic and rhythmic modes of each song.[9] Meanwhile, a neutral third (355 cents), i.e. an interval half-way between the major and minor third. It was introduced by a certain lutanist named Zalzal (d. 175/791),[10] although a somewhat similar three-quarter tone had existed in the pre-Islamic measured pandore (*tanbur mizani*).[11]

Another wayward interval was the Persian minor third (303 cents) which was sharper than the Pythagorean interval (298 cents),[12] and it was these alien intervals which both al-Isfahani and ibn ‘Abdi Rabbihi blames for the decadence of the pure Arabian music in the third/ninth century. There are many earlier theorists of music, notably Yunus al-Kativ (d. c. 148/765) who wrote a “Book of Melody” (*Kitab al-Naghm*). That was also the title of the book by al-Khalil (d. 175/791), who also compiled a “Book on Rhythm” (*Kitab al-Iqa‘*). He was the “father of prosody”[13] A more important treatise appears to have been the “Book of Melody and Rhythm” by Ishaq al-Mausili (d. 236/850), and that was accomplished, says al-Isfahani, without the author’s knowing an iota of the work of Eucklid.[14] None of these works has come down to us, but we know precisely what al-Mausili’s theoretical principles were from the *Risalah* of his disciple ibn al-Munajjim (d. 300/912).

In the mid-third/ninth century a new world dawned for those interested in that group of the sciences known as the quadrivium, i.e. the *‘ulum riyadiyyah*, which included the theory of music. At “House of

Learning" (*Bait al-Kikmar*) in Baghdad were scholars who had translated the great Greek writers on Music into Arabic, including Aristotle, Aristoxenus, Nicomachus, Euclid, Ptolmy, and probably Aristides Quintillanus.[15] The first to avail himself of the new earning was al-Kindi (d. c. 260/873), and three or four – out of a dozen – of his works on the subject have been preserved. The entire gamut of the science of music is covered by him in his several extant works, two of which have been translated or extracted.[16] He not only appreciated music as a science for mathematicians and joy to auditors, but as a prescription for physicians to administer to the afflicted mind and body.

As de Boer says, al-Kindi applied mathematics to medicine in his theory of compound remedies, like the effect of music on geometrical proportions.[17] Everything within the entire macrocosm was linked together. Each note on a lute was connected with melodic mode (*tariqah*), rhythm, and sentiment. These, in turn, were conjoined with the planets, seasons, elements, humours, colours, and perfumes. In his minute description of the lute – the earliest which we posses – "the four gold things" dominated all else. There are four strings, tunes in fourths, and four frets. The strings from the lowest to the highest were four-ply, three-ply, two-ply and one-ply.[18]

His disciples, the Ikhwan al-Safa (fourth/tenth century), followed him in most things, but made the strings compounded of 64, 48, 36, and 27 strands respectively.[19] They assigned to every melodic and rhythmic mode a specific influence (*tathir*), a doctrine which held sway in Islamic lands up to the 14th/20th century. His most illustrious student was al-Sarakhsi (d. 288/899), but this five books on music have not survived.[20] Thabit ibn Qurrah (d. 288/901) is credited with eight treatises on music, yet not a page has come down to us.[21] Other theorists were Mansur ibn Talhah (d. c. 299/910), a follower of al-Kindi, ibn Tahir al-Khuza'i (d. 300/913), one of the most learned in the philosophy of music,[22] ibn al-Munajjim (d. 300/912) whose "Treatise on Music" (*Risalah fi al-Musiqi*) still exists,[23] Qusta ibn Luqa (d. c. 300/912),[24] and Abu Bakr al-Razi (d. 313/925) who penned a "Book of Summings-up of Music" (*Kitab fi Jumal al-Musiqi*).[25] The fame of all these was swept aside on the emergence of the "Second Master" (i.e. second only to Aristotle) whose name became known in Europe as Alpharabius.

Al-Farabi (Alpharabius) was a Turkoman, although educated in Iraq. Celebrated chiefly as a philosopher, he also takes front rank as a music theorist, being known especially for his "Major Book on Music" (*Kitab al-Musiqi al-Kabir*) which was the greatest contribution to the subject up to his time. He tells us that almost all the Greek works on music had been translated into Arabic. Most of these he studied, although he mentions no one by name, save Themistius. Unlike the latter, who was not a practitioner in music, al-Farabi was an instrumental performer,[26] and whilst most of his theoretical discussion was based on Greek authors, on the practical side he supplied original material not to be found elsewhere, especially in his description of the exiting instruments of music among the Arabs.

Being a good mathematician and physicist, he was fully equipped to deal with speculative theory (*'ilm al-nazari*). Although he indebted to the Greeks, he avoided their errors in that he did not agree that sound is heard in water in less degree than in air, nor that wool when struck produces no sound, as Aristotle

tells us.[27] Neither did al-Farabi repeat the blunder of Nicomachus that Pythagoras discovered the consonances by comparing the weight of the hammers in the blacksmith's shop,[28] a legend repeated by Gaudentius of Boethius.[29] His treatment of the influence (*tathir*) of music leaves the Greeks and al-Kindi far behind, as one would readily expect from a naturalistic philosopher.

Further east was Muhammad ibn Ahmad al-Khwarizmi (d. c. 370/980) who was in the service of the vizier of the Samanid Prince, Nuh II. He compiled an encyclopedic "Keys to the Sciences" (*Mafatih al-'ulum*), one key of which unlocked the door of music.[30] Another scientist, Abu al-Wafa' (d. 388/998), penned a "Compendium on the Science of Rhythm" (*Mukhhtasar fi Fann al-Iqa'*),[31] while in distant Muslim Spain a "Treatise on the Composition of Melodies" (*Risalah fi tallif al-Alhan*) was produced by 'Ali ibn Sa'id al-Andalusi (fourth/tenth century).[32] The contemporary Ikhwan al-Safa has been signalized already, especially in their spiritual approach to music. Yet they were well versed in the science of acoustics. One recalls how the famous German physicist Helmholtz argued that musical tones are distinguished by their force, pitch, and quality, and that the force of a musical tone increases and diminishes with the amplitude of the oscillations of the particles of the sounding body.[33]

Preece and Stroh questioned the definition saying that loudness does not result from amplitude of vibration only, but that it also depends upon the quantity of air in vibration.[34] The Ikhwan al-Safa had proclaimed that view over 800 years earlier when they said, "Hollow bodies, like vessels...will resound for a long time after they are struck, because the air within them reverberates time after time until it becomes still. Consequently, the wider the vessels are, the greater the sound, because more air is put into vibration.

Those encyclopedic philosophers are also recognized the spherical propagation of sound,[35] whilst the Aristotelian *De Audibilibus* (802a) had stated that "the direction of sound follows a straight line."[36] Meanwhile, the tractates of the Ikhwan al-Safa were being introduced into Muslim Spain by Maslamah al-Majriti (d. 398/1007), and so widespread was their circulation that the name of al-Majriti was attached to them in that land.[37]

From Turkestan there came the world-renowned ibn Sina (d. 428/1037), better known in Europe as Avicenna, and it was in his widely read book entitled "The Cure (*al-Shifa'*) that a chapter (*fann*) was devoted to music. Like al-Farabi, he passed over the Pythagorean dreams of the "harmony of the spheres," being content to deal with the art *per se* which, as he knew from personal experience, was often a cure from mortal woes. His treatment of the theory of music is different from that of al-Farabi because what was practiced in Bukhara, Hamadan, and Isfahan was alien to that in Syrian. The fretting of the lute was certainly dissimilar, the first semi-tonal fret (*mujannab*) being the diatonic interval (112 cents), whereas elsewhere the semi-tone was the *limma* (90 cents), whilst the Zalzalian neutral third was slightly flatter (343 cents).[38]

He gives the notation of a few of the melodic modes, and from that one sees the Persians were retaining their fanciful names of them, such as *Salmaki, Nawa,* etc. These Persians terms crept into Arabian

music in the third/ninth century, at first there scales agreed with those of the old Arab “Finger modes” (*asabi‘*), but later indiscriminately. All the old Arabian instruments are mentioned together with a few strangers, viz. the *‘anqa’*, evidently a long-necked instrument, the *salbaq*, probably the Greek *symbyke* (the Aramaic *sabbeka*), and the *sanj jinni* or *sini*, seemingly the Chinese metalophone.[39] Ibn Sina also introduced a chapter on music in a shorter work entitled “The Deliver” (*al-Najat*) which was translated into Persian – as the *Danish Nameh-i ‘Ala’i* – by his student Abu ‘Ubaid al-Juzajani.[40]

Another of his disciples was Abu Mansur ibn Zailah (d. 440/1048), whose “Book of Sufficiency of Music” (*Kitab al-Kafi fi al-Musiqi*) is even more valuable than the above treatises of ibn Sina. Although Baron d’Erlanger thought otherwise, it contains much material not to be found elsewhere, especially on the practical art of music, and also passages from a treatise by al-Kindi which has not been known hitherto.[41]

Strange to say, al-Kindi had written a work entitled “The Book on the Division of Canon” (*Risalah fi Qismat al-Qanun*), which might have been a commentary on Euclid’s *Sectio Canonis* since we know that he was acquainted with the book.[42] Yet it was not until the emergence of a scientist of the eminence of ibn al-Haitham (d. 430/1039) that we do find a “Commentary on the Canon of Euclid” (*Sharh Qanun Uqlaids*), together with “Discourse on the Commentary on the Harmonics” (*Maqalah fi Sharh al-*[*A*]*rmuniqi*), the latter being probably the *Introctio Harmonica* of Cleonides.[43] A far more remarkable book was ibn al-Haitham’s “Treatise on the Influence of Melodies on the Souls of Animals” (*Risalah fi Tathirat al-Luhun al-Musiqiyyah fi al-Nafus al-Hayawaniyyah*).[44]

Unfortunately, we do not know its scope of inquiry because the ruthless hand of time seems to have erased it. Yet it dealt with a set of phenomena which had long enticed the minds of Muslim peoples – the phenomena that the camel’s pace could be hastened or retarded by music’s power, that horses could be persuaded to drink by its urge, which reptiles could be charmed and stilled, and that birds could be lured by its potency.[45] Nor should we forget the Andalusian lexicographer ibn Sidah (d. 458/1066) whose *Kitab al-Mukhassas* contains several sections on music and musical instruments.[46] There are other famous men of Muslim Spain who “hit the mark” – as the Arabs say – in the science of music, although some of them, owing to the intolerance of the Berber legists, sought other lands where their gifts were appreciated.

One of these was Abu al-Salt Umayyah al-Andalusi (d. 529/1134) who went to Egypt. He not only excelled as a music theorist but as a practical musician as well.[47] His “Treatise on Music” (*Risalah fi al-Musiqi*)[48] must have been an important work since it was translated into Hebrew,[49] and quoted by Profist Duran.[50] An outline of its contents has been given in English.[51] His compositions appear to have had some influence in North Africa.[52] The learned philosopher ibn Bajjah (d. 533/1138) compiled a “Book of Music”(*Kitab al-Musiqi*)[53] which, says ibn Sa‘id al-Maghribi, was famed in Western Islamic lands as was al-Farabi’s book on Eastern Islamic lands.[54] He also contributed a “Book of the Soul” (*Kitab al-Nafs*), doubtless a commentary on Aristotle’s *De Anima*, which deals with the sense of hearing

(*al-sam'*) and the physical bases of sound (*sout*).[55]

Another Andalusian savant was ibn al-Haddad (d. 562/1165). He wrote a work, entitled by Casiri as *Musices Discipline*, without giving the Arabic equivalent.[56] Better known was ibn Rashd (d. 593/1198) famed in European books as a philosopher and commentator. In his "Commentary on Aristotle's *De Anima"* (*Sharh fi al-Nafs li Aristatalis*)[57] he naturally treats of the spherical propagation of sound, which was not touched upon the European writers until Michael Scot translated into Latin which version was printed in 877/1472.

In the Near and Middle East, the names of theorists of music crop up in the pages of cultural history. Abu al-Hakam al-Bahili (d. 550/1155) was highly esteemed as a mathematician and scientist at Baghdad and Damascus. His work on music was "well known."[58] More renowned was ibn al-Naqqash al-Baghdadi (d. 574/1178).[59]. In *'ilm al-musiqi* he was the tutor of Yahya al-Bayasi who was in the service of the Ayyubid Sultan Salah al-Din (d. 591/1193).[60] Muhammad ibn Abi al-Hakam (d. 576/1180), a son of Bahili, too "had knowledge of the science of music," in addition to being a good practitioner in it.[61] At the Nizamiyyah College at Baghdad was Kamal al-Din ibn Man'ah (d. 551/1156); he was "without a rival" in astronomy, conics, music, and mensuration.[62]

Then there was 'Alam al-Din Qaisar (d. 649/1251), the "great master of the age in all the mathematical sciences," a student of Kamal al-Din. Hassan ibn 'Umar says that 'Alam al-Din was particularly distinguished for his profound knowledge of music.[63] Further East there arose Fakhr al-Din Razi (d. 606/1209), whose "Assembling of the Sciences" (*Jami'al-'Ulum*), an extremely useful encyclopedia, contains chapters in nine sections on the theory of Music. In some respects, he was quite an original thinker.[64] There is also a small tract on music by Nasir al-Din al-Tusi (d. 672/1274) preserved at Paris, which, however, contains only the elements of the theory of music.[65]

A really important work is one by al-Hassan ibn Ahmad ibn 'Ali al-Katib (fl. 626/1228) entitled "The Perfection of Knowledge of Music" (*Kamal al-Adab al-Ghina'*), the solitary manuscript copy of which is to be found in Constantinople. It contains 40 sections (*abwab*) and covers the entire field of music.[66] Finally, came the famous Safi al-Din 'Abd al-Mu'mun al-Urmawa al-Baghdadi (d. 693/1294). He was the author of "The Book of Musical Modes" (*Kitab al-Adwar*) and "The Sharafian Treatise on Musical Proportion" (*Risalah al-Sharafiyyah fi al-Nasab al-Talifiyyah*), which revolutionized the science of music in the Near and Middle East.[67] He took the scale of the old Khurasanian pandore (*tanbur Khurasani*) and used its intervallic progression of *limman, limman, comma,* i.e., 90, 90, 180 cents, as the basis for what came to be called the "Systematist" theory.

The German savant Kiesewetter called him the "Zarlino of the Orient,"[68] whilst the English musicologist Sir Hubert Parry considered the new scale to be "the most perfect ever devised."[69] Riemann, the music historian,[70] shows that it gives consonances purer than those of the European tempered scale, whilst Helmholts, the physicist, considered that the theories were "noteworthy in the history of the development of music."[71] It spread far and wide, and was accepted by Qutb al-Din al-Shirazi (d. 710/1310), the

author of the Persian encyclopedia known as “The Jewel of the Crown” (*Durrat al-Taj*),[72] and Mahmud al-Amuli of the same century, who compiled “The Precious Things of the Sciences” (*Nafa’is al-Funun*), also in Persian.[73]

The theories of Safi al-Din ‘Abd al-Mu’min are to be seen the “Treasure-House of Rarities” (*Kanz al-Tuhaf*) written in the mid-eighth/14th century, although we read in the section on musical instruments in that book that some performers were using older system, i.e., the earlier Person-Arabian Phythogrean scale of al-Farabi’s days.[74] The books just mentioned were all in Persian, since the Persian renaissance had spread far beyond its frontiers.

Still, Arabic literature held its own in Spain, Egypt, and Iraq, and in the domain of music theory we have many exponents: ibn al-‘Ala’i al-Baghdadi (eighth/14th century) in his “Reading of Time in the Art of Melodies” (*Qir’at al-Zaman fi’Ilm al-Alhan*),[75] al-Khatib al-Irbili (fl. 731/1329) in “The Jewels of Arrangement in the Knowledge of the Notes: (*Jawahir al-Nizam fi Ma‘rifat al-Angham*),[76] Muhammad ibn ‘Isa ibn Kara (d. 759/1358) in “The Goal of Inquiry in the Science of Melodies and Rhythm” (*Ghayat alpMatlun fi Fann al-Angham w-al-Durub*),[77] ‘Amr ibn Khidr al-Kurdi (d. 800/1397) in “The Treasury of the Desideratum in the Melodies and Rhythms” (*Kanz al-Matlub fe ‘Ilm al-Dawa’ir w-al-Durub*);[78] but more important still was ibn al-Tahhan (eighth/14th century), whose “Collector of the Sciences” (*Hawa al-Funun*) is of extreme value, especially on the construction of instruments of music.[79]

The Persian renaissance had greatly influenced Turkey. This evocation was due chiefly to ‘Abd al-Qadir ibn Ghaibi (d. 840/1435), a tremendous personality who had been the chief minstrel at many Courts from Baghdad to Samarqand, and was better known as the author of the “Collector of Melodies” (*Jami‘ al-Alhan*) and other works which, with those of Safi al-Din ‘Abd al-Mu’min, became the accepted textbooks. The former were somewhat critical of a few axioms of the latter.[80] Indeed other authors, writing in Arabic, were just as contentious, including the author – probably al-Jurjani (d. 816/1413)[81] – of the “Maulana Mubarak Shah Commentary” and the “Muhammad ibn Murad Treatise” in the British Museum.[82]

All this reflects the keen critical attitude of these Muslim theorists on music. Although the Persian renaissance had greatly influenced Turkey, which was by this time beginning its political domination of the Near East, Arabic culture still held literary sway in Syria, Egypt, and Iraq. A Turkish writer, Khidr ibn ‘Abd Allah, had written a treatise on the “Musical Modes” (*Adwar-i Musiqi*) for Sultan Murad II, in which he mentions al-Farabi, ‘Abd al-Mu’min, Ptolemy, Nicomachus and a certain ‘Abd al-‘Aziz al-Kirmani as his authorities,[83] while another Turkish author, Ahmad Oghlu Shakhr Allah compiled a book based on the Persian “Treasure House of Rarities” (*Kanz al-tuhaf*) written in the previous century.[84]

Al-Ladhiqi (d. 900/1494) dedicated his Arabic “Treatise of the Conquest of Music” (*Risalat al-Fatihiyyah fi alpMusiqi*) to the Turkish Sultan Rayazid II.[85] Meanwhile, ibn Khaldun (d. 808/1406) had written in the famous “Introduction” (*Muqaddimah*) to his universal history the “Book of Examples” (*Kitab al-‘Ibar*)[86] with its chapter on music. More important, to the theory and practice of music, was a treatise by al-

Maridini (d. 809/1406) called the “Introduction to the Theory and Canons of Melodies”” (*Muqaddiman fi ‘Ilm Qawanin al-Agham*). The same writer published a “Commentary in *Rajaz* verse on the Melodic Modes” (*Urjuzah fi Sharah al-Naghamat*).87

In fact, verse had become a popular, although not a perspicuous – medium for that subject. More satisfying was an anonymous treatise entitled “The Advantage in the Arrangement of the Melodies upon the Times and the Zodiac” (*Fi’ideah fi Tartib al-Angham ‘ala al-Ayyam w-al-Buruj*), which reveals that the old conceit in the influence (*tathir*) of the heavenly spheres was still as strong as ever.88 This is also most apparent from the “Treatise Concerning the Knowledge of Melodies” (*Risalah fi ‘Ilm al-Angham*) by Shihab al-Din al-‘Anjami (ninth/15th century).89 On the purely instrumental side is a “Survey of the Conerns and Anxieties in the Explanation of the Instruments of Music” (*Kashf al-Humum w-al-Kurub fi Sharh Alat al-Tarab*), a most important treatise on music and instruments in the ninth/15th century Egypt, quoting many unknown authorities – Taqi al-Din Muhammad ibn Hassan al-Farabi (or Faryabi), Ahmad ibn Muhammad ibn Ayyub al-Khwarizmi, and others.

The only MS available of this book is in Constantinople.90 The names quoted reveal men of Turkoman origin. Two others of that stirps who were music theorists were Sa‘d al-Din Kammari (ninth/15th century) who wrote a book on the harp (*chang*) in the form of a dialogue between master and student, and a Fakhr al-Din al-Khujandi (tenth/16th century) who penned a clever criticism (*hashiyah*) of Safi al-Din ‘Abd al-Mu’min.

With the dawn of the tenth/16th century came the domination of the Ottoman Turks from Kurdistan to Algeria, and within those boundaries the theory and science of music fell into desuetude. The compendiums of the sciences, which almost always include music, were current – the older *Irshad al-Qasid* of al-Akfani (d. 749/1348), the *Maqalid al-‘Ulum* of Jurjani (d. 816/1413), the *Unmuzaj al-‘Ulum* of al-Fanari (d. 839/1435), and the later *Miftah al-Sa‘adah* of Tashkoprizade (d. 968/1560) dealt with the subject, but in his last work most of it was borrowed from older compendiums.91

A certain Shams al-Din al-Saidawi al-Dimashqi wrote a treatise called “The Book Concerning the Acquisition of the Melodies” (*Kitab fi ma‘rifat al-Angham*). Like several other such treatises of the period, it was in verse, but it revealed a neoteric device for notation by means of a stave of eight or so lines.92 Another tract in *rajaz* verse was by Nasir al-Din al-‘Ajami.93 Two others in rhymed prose have come down to us.94 A really solid work of that century was “The Treatise of the Discoverer in the Science of the Melodies” (*Risalt al-Kashif fi ‘Ilm al-Angham*) by Muzaffar ibn al-Hussain ibn al-Muzaffar al Haskafi,95 while in Morocco, ibn al-Wansharisi (d. 956/1549) contributed a valuable work on “The Natures, Elements and Modes” (*Taba’i‘, Tubu‘, wa Usul*).96

In the 11th/17th century there lived a certain bu ‘Isami (d. c. 1103/1690) who was the teacher of another music theorist Muhammad ibn Tayyib al-‘Alami (d. 1136/1722), the author of “The Companion of the Performer” (*al-Anis al Mutrib*), also of Moroccan origin.97 Then there was a “Book of the Combinations in the Science of Music and the (*Kitab al-Jumu‘ fi ‘Ilm al-Musiqi w-al-Tubu‘*) by ‘Abd al-Rahman al-

Fasi (d. 1098/1685).[98] It must be remembered that Morocco, like Muslim Spain, ignored the scale of the Systematists," and followed the old Arabian musical system based on the Pythagorean scale with the occasional intrusion of Zalzalian neutral third (355 cents).

In Persian the scale of the "Systematists" was used in the 11th/7th century, the chief authority being Abu al-Wafa' ibn Sa'id.[99] Here, treatises on music abounded, although some of them were trivial in comparison with those of the glorious past. One is named "The Teaching of the Modes" (*Ta'lim al-Naghamat*), another is the Treatise on the Science of Music" (*Risalah 'Uklum Musiqi*),[100] and lastly "The Exquisite Pearl in the Art of Music" (*Durr al-naqi fi Fann al-Musiqi*). The last was by Ahmad al-Muslim al-Mausili (fl. 1150/1737), but it was in Arabic, having been derived from the Persian work of 'Abd al-Mu'min al-Balkhi.[101]

In Muslim India where Persian, Khurasanian, and Turkomanian musicians were favoured side by side with those of India, it is obvious that the former musicians, trained in an art that was in many respects different from that of the Aryan peoples of India, took direction from such books on the theory of music as were known in Persian, just as the Indian musicians turned to Sanskrit sources of information. We know of two Persian books on music theory that were dedicated to the Emperor Akbar (d. 1014/1605). They were the "Excellent of the Modes" (*Tahfat al-Adwar*) by 'Inayat Allah ibn Mir Hajj al-Harawi, and the "Treatise on the Science of Music" (*Risalah dar 'Ilm al-Musiqi*) by Qasim ibn Dost 'Ali al-Bakhari.[102]

An Amir of the Court of Aurangzib named Shah Qubad ibn 'Abd al-Jalil al-Harithi, called Diyanat Khan, caused a collection to be made of Arabic and Persian treatises on music of such authors as al-Kindi, ibn al-Munajjim, al-Farabi, ibn Sina, ibn Zailah, Safi al-Din 'Abd al-Mu'min, and also of many later writers,[103] whose works he himself had collated. Two Persians writers appear to have made translations of or adaptations from Sanskrit treatises. One was entitled *Rag Darpan* issued by a certain Faqir Allah in about the year 1073/1662. Another was *Kitab Parjat Sangit* written by Mirza Rauzan Zamir (d. c. 1080/1669), praised by Shir Khan Lodhi. A third book was "The Excellent Thing of Hindustan" (*Tuhfat al-Hind*) by Mirza Khan Muhammad ibn Fakhr al-Din and was dated 1086/1675. 'Iwad Muhammad Kamil wrote about playing the *bin* in his *Risalah dar 'Amal Bin wa Thath-i Ragha'i*, while Abu al-Hassan Qaisar contributed a book called "The Knowledge of the Melodies" (*Ma'rifat al-Nagham*).[104]

D. Influence

"Thy neighbour is thy teacher."
An Arabic Proverb

As mentioned elsewhere,[105] the ancient Near and Middle East had been influencing Greece and Rome from time immemorial. With the dawn of Islam, this stimulation from the Orient increased by leaps and bounds, as the Muslims were on European soil from the second/eighth century in the Iberian Peninsula, and from the ninth/15th century in the Balkans. Culturally, the former impact was a widespread blessing, not only to Spain and Portugal but also to the rest of Europe. The Arabs and Moors comprised some

one-tenth of the population of the Iberian Peninsula, and its leisured classes were *facile princeps* in all the concerned art, literature, and science.

It is not all surprising that this newly imposed civilization from the East should have captivated all eyes, ears, and minds. What we owe to Arabic authors in literature, science, and philosophy, and to Islamic artisans in architecture and the minor arts have been detailed at some length elsewhere in the present work.[106] Europe's indebtedness in music in Muslim Spain and Portugal has been the favourite theme of the present writer for many years.[107] Of its more general diffusion, a further endeavour should be made to indicate the *primum mobile* which induced other lands to take this exotic art to their hearts.

To the peoples of Islam, music was not merely a diversion of the privileged classes, but the heritage of all, and was, therefore, part and parcel of the social life of the whole community, as the Ikhwan al-Safa had thought.[108] That was what the peoples of the Iberian Peninsula found to be the case with the Moors. Of the music of this land before the Muslim invasion in 91 – 93/710 – 712 we know very little. It is true that we read of Isidore of Seville (d. 15/636) whose influence on medieval culture has been lauded to the skies,[109] but what Isidore tells us about music in his *Originum sive Etymologiarum* does not enlighten us on the contemporary music, since almost everything that he has collected under the heading is derived from alien and earlier sources, as Migne has shown.[110]

In the "Codex Toletanus" (second/eighth century) of Isidore's *Etymologiae*, we have marginalia in Arabic. One may ask why? The answer is that the educated classes in Christian Spain found that the acquisition of that language opened up a new world to them in the arts, sciences, and literature, and the year 188/804, Arabic was in official use in charters and canonical decrees.[111] The Bishop Alvarus of Cordova (third/ninth century) was lamenting the spread of Arabic culture and learning to the detriment of the Christian Scriptures, shows which way the wind was blowing.[112] It is in iconography, perhaps, that the earliest Moorish influence in music may be espied as, for example, in the S. Medard *Evangeliarum* (second/eighth century), the *Psalterium Aureum* (third/ninth century),[113] and in the miniatures (fourth/tenth century) reproduced by M. Serrano Fatigati,[114] all of which show long-necked pandores and other instruments, including large and small rebecks.[115]

Some of these necked instruments, such as the lute and pandore, had frets (*dasatin*) on the finger board, which fixed the Arabo-Pythagorean scale with absolute precision. Prior to that, European musicians had to depend on their ears alone while tuning strings and "stopping" notes. Here is a list of Spanish instruments with their Moorish originals named in parentheses: atambor (*al-tanbur*), laud (*al-'ud*), rabe (*rabab*), canon (*qanun*), axabeba (*al-shababah*), albogon (*al-buq*), annafil (*al-nafir*), sonajas de azofar (*sunuj al-sufr*), and atambal (*al-tabl*). All of these instruments may be seen in the miniatures of the *Cantigas de Santa Maria* of Alfonso el Sabio (d. 683/1284),[116] whilst the *Libro de Buen Amor* of Juan Ruiz (d. c. 751/1350) makes distinction between Spanish and Moorish instruments such as in the *gitarra morisca* and the *guitarra latina*.[117] One is, therefore, not surprised to find Rafael Mitjana, the historian of Spanish music, lauding "this Oriental civilization, so rich and so exuberant...imprinting an

indelible mark on so many examples of Spanish art, and more especially upon music."[118]

The Spanish population, seeing how universal and attractive Moorish music and song were among its people, soon became as ardent auditors and practitioners as the Muslims themselves, and gathered to the "leila" (Ar: *lailah*) and "zambra" (Ar. *zumrah*) of the latter to hear their "cana" *ghaniyyah*), "huda" (Ar. *huda*), and "anaxir" (Ar. *nashid*), since Moorish "aravia" fascinated their ears, and the "mourisca" tempted their feet. So ravished by enthusiasm were the Spaniards with such displays that they were led in excitement to cry "algzara" or "alarido" in admiration. These words are the Arabic *al-ghazara* (copious) and *al-'arid* (amplitude).

One may still hear cries of "Ole, Ole" (Allah, Allah), punctuating the performance of a "cante hondo" in modern Spain, when the audience is carried away by the clever ornamentation (Ar. *tahsin*) or the melody by a singer or a player.[119] As Professor J, B. Trend says, "this tendency to profuse ornamentation is seen in every form of art, whether cultivated or popular, and it…undoubtedly goes back to the time of the Moors."[120] Among the dances the "mourisca" was much fancied by the Spaniards and the Portuguese, and in the sports and pastimes of the latter the Moorish influence is quite patent.[121] Joy as well as thanksgiving was at its height during the Great Muslim festivals, and that the dance was given recognition on such occasions seems very probable because the Portuguese had a dance called the "muchachim," which may be the Arabic *muwasim*, the name of the six Muslim festivals, as we know from the ibn Battutah[122] and al-Maqqari.[123]

On the other hand, Pedro de Alcala (911/1505)[124] gives word *muwajjah* the plural of which is *muwajjahin* (mascarado con caratula), which Dozy and Engelmann link up with "los matachines," a troop of four, six, or eight persons who performed a clownish dance.[125] This word is claimed to be derived from the Arabic *mutawajjahin* (masked people). That leads us to the Spanish words "mascara" (actor) and "zaharron" (merry andrew), which are the Arabic *maskharah* (cause of laughter) and *sakharah* (scoffer). Another figure of entertainment was the Spanish "moharrahe," who was no other than the Moorish *muharraj* (buffoon).[126] It was the arts of these people which captivated the Moors and the Iberians alike,[127] and their influence spread abroad at the hands of the wondering minstrels.

It was these minstrels who were the real disseminators of music during the Middle Ages, for, as Naumann, says they were carrying new themes from one people to another, as well as many "an original and singular rhythm."[128] This latter would have far-reaching effect, as we shall see presently. Even the Arcipreste de Hita (eighth/14th century) realized that it was not the bowed instruments which typified the exotic Moorish rhythms, but the plectrum-struck lute and pandore.[129] The other feature of that Oriental art was the mellisma or embroidery of the melody by Muslim singers and players which Professor Trend has well compared with the arabesque in Mudejar art.[130] The Spanish Courts were well supplied with Muslim players, singers, as the official records, even their names have been registered.[131]

That the wandering minstrel class contained a fair sprinkling of Moors, there is some evidence. It is probable that the long hair, painted faces, and gaudy raiment were prompted by Oriental minstrels,[132]

and the Spanish “mourisca,” already mentioned, with *grelots* on the dancers’ legs, and the “hobby horse,” both borrowed from the Moors, inveigled the ears and eyes of audiences. The *kurraj* or hobby horse of the Moors and its impedimenta of bells (*jalajil*) are mentioned as far back as Jarir (d. c. 110/728) and have also been described by ibn Khaldun. Let us turn to the diffusion of these arts.

Some of the external features of the music of the Basques reveal a Moorish tinge. Their “mutchikoa,” which was danced by young men armed with batons, immediately suggests that the original was the Arabic *muskwikah* (bristling with arms). In Catalonia, there was a dance which specialized the water flagon called “almaratxa,” which was the Moorish *al-mirashshah*. That feature was dropped about 1215/1800. The Basque “zortzico,” also common in Spain, has a time measure of “five-eight” which immediately reminds one of the Moorish *makhuri* rhythm.[133] P. Donostia assures us that the “zortzico” “does not represent the musical basis of the Basque people.”[134]

In other words, it is an exotic plant, reared among the Moors. Among the most popular of the Basque folk instruments are the “alboka” and “atabula,” the originals of which are to be sought in *al-buqi and al-tabl* of the Moors. Clearer still is the Moorish influence in the Basque “zamalzain” to which the people still skip about, little suspecting that it is the Arabic *zamil al-zain* (gala limping horse), the English “hobby horse.”[135]

All of these neoteric devices soon spread over the Spanish and Portuguese borders, as the French, Italian, and English languages and customs reveal, some of them are to be found even today in Pyrenean provinces in something akin to their pristine character. One recalls that the tambourine made its entry into Western Europe as the “tambour de Basque” and “tambour de Biscaye.” Jean Poueigh, in his entrancing book on the *Chansons populairs des Pyrenees francaises*, shows how the popular song of some regions in France has been influenced by the Oriental art, and in his own particular sphere of research he hears and sees quite definitely the Moorish pattern.[136]

Among his numerous examples in the “mouchicou” of Bearn, which is the warlike Basque dance “mutchikoa.’ One of the Pyrenean song dances is a kind of “branle” called the amelet,” which had its origin in Toulouse in the sixth/12th century. There it fell into desuetude, although it may still be heard in the mountains of Foix. Could these binary measured song dances owe their name to the Moorish *ramal*? Yet the inherent wandering propensity of folk music is notorious, and one example of this is the Bulgarian rhythmic “aksak” which is to be found in Basque instrumental tune.[137] Its paternity is traceable to the Turkish *aqsaq*, a 9/8 movement.

In France, iconography supplies the clearest evidence of the Moorish and Saracenic influence in musical instruments,[138] whilst its literature clinches that certainty.[139] The Moorish *‘ud, rababah, quanun* and *tanbur*, appear in the seventh/13th century as the “leus” (luth), “rubebe,” “micanon” and “mandore” – the Spanish “guitarra morisca” of Juan Ruiz (eighth/14th century), the “morache” of Guillaume de Mechaut (c. 743/1342) in France. With these came the Saracenic *naqqarah, tabl,* and *tabl-zan* – the last meaning really “a drummer” – which were Gallicized into “naguarre” (nacaire), “tabor” and “tabolzan.” Later, the

French adopted the Persian *tinbal* as the “tinballe” in 876/1471.[140]

French minstrels were welcomed at the Spanish Courts,[141] and these as well as the peregrinating type were the means by which these Moorish instruments and music were spread abroad. The Spanish “mourisca” was danced in France as the “Moresque,” whilst “los matachines” were “les matassins” of that land, all of whom were “masques,” as did the Moorish *maskharahs*. As late as Thoinot Arbeau (997/1589), the French “Morris dancers,” i.e. Moorish Dancers,” were putting dye on their faces.[142] He calls the “matassins” by the name “les bouffons” (Ar. *muharrajat*).

The troubadour problem, in relation to the Moorish influence, has been the arena of fierce conflict since the days of Heut’s *Origine Fabularum Romanensium* (1105/1693), as the present writer has shown elsewhere.[143] The discovery by Levi–Provencal in 1374/1954 that the fifth song in Jeanroy’s *Les Chansons de Guillaume IX* was not only inaccurately transcribed but that its final lines were actually purely Arabic,[144] was a veritable bombshell to the sceptics. Whether the troubadours actually borrowed their form and material from the Moorish *mutrib* (minstrel) or not, they certainly had the opportunity to do so.[145]

Indeed, it is not improbable that the Provencal word “trobador” was coined from the Arabic *tarrab* (*taraba* = “to rejoice”, *tarraba* = “to sing”).[146] The orthodox explanation of the word is that it issued from the Provencal verb “trobar’ (French “trouvere”) meaning “to find.” If that be so, it was a very lucky “find,” seeing that it gave birth to the verse of the troubadours. Joseph Anglade says[147] that the “trovador” who lived at the princely Courts was known as a “sergrier,” a name which was no more than the Moorish *sakharah*.[148] On the other hand, Menendez Pidal believes that the “segrier” belonged to a class between the “trovador” and the “juglar.”[149]

In Pedro de Alcale (915/1509), the “trobador” equates with the Moorish *sha‘ir* (poet), *nadim* (boon companion), and *adib* (scholar).[150] There can be little doubt that the Moorish *muwashshahah* and *zajal*, which were popular verse forms as old as the fourth/tenth century, were the mould from which much of the poetry of the troubadour sprang, as Ribera has claimed.[151] Even the scenes and *dramatis personae* of that poetry reek with the Orient. If they could borrow those features, why could not the melodies which enhanced that verse also be copied? In truth, they were almost inseparable. Even if the troubadours could not grasp the significance of the Arabic language they could at least seize the prosodical structure, the melody of which would be transfixed in their ears with certainty.

In any case, they had their “juglar” who attended them ostensibly for that purpose. Some of the later works of that early troubadour, Guillaume IX (d. sixth/12th century), “can be explained only by *muwashshahah* and *zajal*,” as Nykl insists, and he says of the later Marcabru that his two *estornel* (Ar. *zurzur*) were, “in all likelihood, made upon an Andalusianbilo” and “stanza” equate precisely with the Moorish *markaz* and *bait*. What is stranger still is the literal identity between the Latin musical term “conductus” and the Arabic *majra*, although we may not at present be able to pin the likeness down to precise identity of usage.[152] What we do know for certainty is that the Spanish “estribillo” and “stanza”

equate precisely with the Moorish *markaz* and *bait*. What is stranger still is the literal identity between the Latin musical term “conductus” and the Arabic *majra*, although we may not at present be able to pin the likeness down to precise identity of usage.[153]

Concerning the famous *Cantigas de Santa Maria* of Alphonso X (d. 683/1284), the miniatures of which present us with the delineations of many Moorish instruments, Julian Ribera has made wide claims for the Moorish influence in both the melodic and in the rhythmic structure of that work.[154] As his interpretation of the latter does not agree with the Arabian rhythms of the third/ninth to the fifth/11th centuries examples known to us,[155] that part of his elucidation is suspect, whilst his transcription of the melodies has been disputed by many.[156]

On the other hand, the literary material which he amassed is extremely valuable to all who are interested in the problem. Yet the failure of Ribera, in the circumstances mentioned, does not validate the sweeping statement of Higini Angles that there is not the slightest trace of an Arabian (Moorish) influence in the melodies of the *Cantigas*.[157] Others of the anti-Moorish influence party are more guarded in their utterances, since they admit that because there is not contemporary Moorish music available there can be no absolute proof either “for” or “against” that thesis. They evidently know the reason why there was no written contemporary Moorish music, seeing that the pious Cardinal Ximenes, according to his biographer Robles, committed a million Arabic manuscripts to the flames,[158] believing, as the late Reynold A. Nicholson has said, that he could “annihilate the record of seven centuries of Muhammadan culture in a single day.”[159]

Spanish composers of the standing of Pedrell and Falla are outstanding opponents of the claims for a Moorish influence. The former asserts that Spanish music “owes nothing essential” to the Moors,[160] but takes care not to define what he means by “essential.” He prefers to acknowledge a Byzantine influence, but does not quote documentary evidence which he and others demand the pro-Moorish advocates should exhibit. In fact, there are no Byzantine documents of the pre-Moorish days that authenticate his contention.

Fella makes a different approach. He acknowledges the Oriental strain in Spanish music, but he attributes that feature of the “gipsies.”[161] In other words, a handful of uncouth gypsies, who entered Spain not earlier than 846/1442, are to be credited with having exerted a more pre-dominant influence on Spanish music than a million Arabs and Moors whose ancestors entered the Iberian peninsula so far back as 94 – 95/712 – 713, without including the countless Mozarabes, Mudejares, and Moriscos, who had adopted the Arabian and Moorish mode of life.

The fact is that Spain is compelled to face the question of the Oriental strain in her national music as exhibited in the “cante hondo” and “flamenco,” but dare not acknowledge the influence of Islamic peoples. Jean Sermet says of the “cante hondo” that it “is certainly of Oriental origin,”[162] while Raoul Leparra states that the “very special *mentalite* of the ‘flamenco’ goes back, according to the hypothesis most justified, to the domination of the Moors.”[163] Fortunately, there have been and are men of the

stature of Menendez Pelayo,[164] Mitjana Gordon,[165] Menendez Pidal,[166] Ribera,[167] and Nykl[168] who recognize clearly the Moorish influence as they would the sun at noonday.

The Moorish influence spread quite naturally to Italy, where such instruments as the "liuto," "rebecca," "canone," "tambura," "taballo," and "nacchera," as well as such terms as "maschera" and "mattaccino" reveal their ancestry.[169] Of course, the definitely Oriental Courts of Frederick II (d. 648/1250) and Manfred (d. 665/1266) at Palermo and Naples had their quota of "Saracen" minstrels and dancing girls.[170] A glance at medieval documents enables one to note the frequent appearance of Italian minstrels at Spanish Courts and *vice verse*,[171] all of which conduced towards the inter-change of alien ideas in music, including that of the Moors, which the poles asunder from that of Europe proper.

The Sicilian instruments of the period are displayed on woodwork screens of the sixth/12th century of Palermo, while those delineated by Fra Angelica, Bellini, and Montagna (ninth/15th century) are quite revealing of the Oriental influence in their ornamentation as well as in their shape.[172] It was here that the mounted men-at-arms of the English condottiere, Sir John Hawkwood (d. 796/1394), were using a nacarino which was, of course, the Arabic naqqarah. Meanwhile, the crusaders had returned from Palestine with fresh ideas of martial music. Previously they only used trumpets (*tubae, litui*) and horns (*corni, bucinae*), whereas the Saracens were equipped not only with trumpets (*anfar, karnat*) and horns (*buqat*), but also with large (*kusat*), medium (*naqqarat*), and small (*qas'at*) kettledrums, together with reed-pipes (*zumar*), shawms (*surnayat*), cymbals (*sunuj*), and bells (*ajras*), which were used not merely for signalling but to create fear and dismay among the Christian array.[173]

It is generally believed that the cylindrical bore "trump" of Richard Coeur de Lion, first heard in 587/1191, was borrowed from the Saracens.[174] With the latter the military band was a distinct unit known as the *tabl khanah* or "Drum House" which was drawn up with the standards away from the actual conflict, where it played unceasingly during the battle for tactical purposes. In times of peace it was the function of the *tabl khanah* to perform the five-fold *naubah* for the Caliph and the three-fold *naubah* for princes or governors. Generals, according to their rank, were allotted a specific number of players, although only the highest of the Amirs were allowed kettledrums.[175] Europe adopted all those customs, and up to the 13th/19th century the various ranks of European generals could be determined by observing the musical honours bestowed on them.[176]
In Britain we observe the Oriental current flowing, presumably *via* France, as one sees in the word "mattachin," the dance in which a duel was fought with wooden swords typifying the struggle between the Christians and the Moors. Here it was dubbed the "Morris dance," but, as Brand points out, "the genuine *morisco* was very different from the European Morris."[177] Each of the performers being a "masker" (Ar. *maskharah*), they painted their faces and wore masks. A folk-song and dance authority of today, Maud Karpeles, dismisses the Moorish origin of the British "Morris Dance" by saying it "is now discredited" – by whom, we are not told.[178]

Such English authorities as Thomas Blount, Joseph Strutt, and John Brand had no doubts about its

Oriental origin, and anyone who has seen the “hobby horse” and knows its history will scarcely be convinced by the latest heresy. “Moor’s garments” are specified in English documents as early as 914/1508 just as “Turk’s garments” for kettle drummers were mentioned a century later, the reason being obvious in both cases. With the general infiltration of Moorish instruments came the “lute,” “rebeck” of “ribible,”[179] “tabor” and “naker,” and they did not necessarily intrude through France, since both English and Scottish minstrels were welcomed at the Spanish Courts, where not only Moorish instruments were in common use, but Moorish minstrels were playing.[180]

In the east there came the Turkish eruption into Europe during the ninth/15th century, when the whole of the Balkan Peninsula was conquered. That the music of the latter was influenced by that of the Turks can scarcely be denied, however much collectors of folk and national music may strive to minimize that persuasion. The Oriental strain exists to the present day, more especially in Bulgaria, Albania, and Yugoslavia. According to Raina Katzarova, the Turkish rule only left “infinitesimal traces in Bulgarian folk music.”[181] Yet among those immeasurably small vistiges are many irregular Oriental rhythms from 5/16 through odd numbers up to 13/16. Further, did not those instruments of a definite Oriental prompting contribute something – if but the merest fraction – to those “infinitesimal traces?”

Those instruments include the “tamboura,” “kemence,” “kaval,” “daara,” and “tarabouka” – all adopted from the Turks.[182] In Yugoslavia the Oriental impress is deeper, since many of their melodies are acknowledged to be of Turkish or Arabian origin.[183] The “tanburica” is common to the Yugoslavs together with its cousins the “saz” and “shargy.” The Arabo–Turkish lute (*‘ud*) is known in Macedonia as the “oot.” Among Balkan wind instruments, the “duduk,” “zurne,” “dzamare,” and “bore,” as well as the percussion group – “daule,” “deff,” “daulbas,” “daire,” “dalbujane,” and “chapara” – all tell the story of their parentage. Albania used a host of Turkish instruments, including pandores of the “yonghar” ad “paraduzen” class.[184]

Even Rumania and Russia were influenced by the Turkish *kopuz* in their “kobsa” and “cobsa,” whilst the latter adopted the Arabian *al–tabl, naugah*, and *tab–li baz* in the tenth/16th century “litavri,” “nabat,” and “tulumbaz” respectively for their military bands.[185]
Perhaps the greatest of all the “borrowings” from the Turks was made by European military bands. It began about 1138/1725 when the Turkish Sultan presented the ruler of Poland with a complete military band instrumented after the Turkish fashion. The craze soon spread to Russia, Austria, Prussia, France and Britain. The pre–dominant feature of this Turkish music was the use of the bass drum, cymbals, triangle, tambourine, and “Janissary bells.” These not only helped precision in marching for the army, but the new tonal colour attracted the attention of the orchestra, and very soon Mozart (1196/1781) and Haydn (1290/1794 were scoring for such instruments in their immortal works, the former using them in his opera *Il Serablio*.[186]

Indeed, the Orient became the scene for countless *libretti*: Beethoven’s *Ruin of Athens*, Rossini’s *Turks in Italy*, Webber’s *Abu Hassan*, Boieldieu’s *Caliph of Baghdad*, David’s *Lalla Roukh*, Bizet’s *Djamileh*,

Massenet's *King of Lahore*, Bantock's *Pearl of Iran*, and so on. What would the annual pantomimic productions in Britain be without *Aladdin, Sindbad*, and *The Forty Thieves*, all from the *Arabian Nights*, although some of us may be amused at the pseudo-Oriental music which accompanies them.

The musical influence of Islamic peoples is not confined to the West. South of the Maghrib and Egypt we find the *tabl, ghaitah, bandair*, and *shaqshaq* in the Sudanese languages as the "tabala," "tamba´or "tumbul," "algaitaru," "bendere," "bendo" or "bentere," "segesege" or "asakasaka."187 The "azamari" or troubadours of Abyssinia may have derived their name from the Arabic *al-zumar*, meaning people who gather together to make music. Their agarit" is clearly the Arabic *naqqarat*. The neighbouring Somalis use the Egyptian *zummarah* as the "zomari," just as they do in Zanzibar, although it becomes the "anjomari" of Madagascar.

The lute-like *qabbus* of the Arabs and Turks became the "kabus'u" of Somaliland and the "qalbus" in Zanzibar. Turning to the west coast of Africa one recognizes the Arabic *al-tabl* and alghaitah, as well as the Turkish *boru* in the "tabulaie" of Senegal and the "a-tabule" of the Gold Coast, the "algaita" of the hausa, and the "buro" of the Gold Coast.188 Returning to the east coast, it should be noted that, in spite of Sanskrit influence on the Malagasy language and the cultural pressure of Indianized Sumatrans, we do not find a solitary musical instrument of Indian or Indonesian origin. That statement takes us to India itself, where the Islamic cultural influences are as patent as the noonday sun.

A recent writer on Indian music avers that "the stories that tell how the various styles of North Indian music were invented by musicians of the Muhammadan period have probably *no basis in reality*."189 So far as the "form," the method of performance, the actual instruments, and the technical nomenclature of that music is concerned, the above statement is a distortion. That some "styles" came via the "musicians of Muhammadan period" must surely be allowed, and among them are the *qual, ghazal, taranah*, and *firu dasht*. One recalls that Amir Khusrau (d. 725/1325) has been actually censured by the purists of the old Indian school of music for *Islmaic innovations*, and one presumes that the above were among them.

The *naqsh*, an ornamental piece of music, was another feature in Amir Khusrau's time, and that and the preceding items would seem to be those specifically Islamic features which Alain Danielou believes that "no one can seriously speak of their having any influence" on the development of Northern Indian music. One asks, would that include the *khiyal*? Surely that deserves some claim to pristine utterance. It certainly lives up to its name, which means "fancy" or "imagination," since the embellishment of its melodic outline becomes perfectly scintillating at the hands of a Muslim *ustad* (*virtuoso*). Fox Strangways said that the *khiyal* received "its highest development" at the hands of the Muslims, having originated with a certain Mahmud Sharqi of Jaunpur (d. 844/1440).190

The names of such modes as *'ushshaq* and *nigar*, together with such technical terms as *basit* and *sarpardah*, are quite alien to Sanskrit. One is prompted to inquire why Sanskrit or Hindi words are not used instead of the Arabic *midrib* for the "plectrum," and *khali* for a "rest" in a rhythmic pattern. Why call the drum "brace" the *diwal* instead of its Sanskrit equivalent? Seemingly there is some "basis in reality"

for the Muslim claims.

When we examine the musical instruments of modern India, we find overwhelming evidence of the influence of Islamic peoples, which is a sufficient rebuttal to Alain Danielou's claim that "outside influences" were only "temporary fashions." Nobody can scan the names and features of those instruments without concluding that Pakistan and parts of Muslim India have been wearing those supposedly "temporary fashions for many centuries. Search as one may in the old Sanskrit treatises, even *Sangita Ratnakara* (seventh/13th century), one will not discover in their pages the *sitar, rabab*, or *tanburi*.

Indeed, the *chargah-sitar* and *tarabdar sitar* bear an unmistakable Persian likeness. Even the *sarod* or *sharod* can be no other than the old Turkoman *shahrud* of the fourth /tenth century. All of these instruments as well as the *dutarah* and *chartarah* bear names which determine their origin. Grosset claims that the *qanun* or psaltery was derived from the old Indian *katyayanavina* or *svara-mandala*:[191] but since the latter is not mentioned in the Sanskrit treatises earlier than the *Sangita Ratnakara*, which is of later date than the Arabic authorities, the claim for Indian priority is far from convincing. Among the bowed types the *kamanchah* is the most obvious of the borrowed Islamic instruments. The insistence of Grosset that the Sanskrit term *kona* stands for both "plectrum" and "bow" cannot be justified, although he claims the *Amara kosha* (first/seventh century) as his authority for the use of the "bow."

Yet Ananda K. Coomaraswamy declares that "no Indian *vina*, whether ancient or modern, was ever played with a bow."[192] The antiquity of the *ravanahasta* as claimed by Fetis, who was foolishly influenced by the mythical *ravanstron* of the Sonnerat, was sheer imagination,[193] as was his indication of a manuscript at Vienna, dating from the days of the first Caliph (first/seventh century, *sic*), supposed to delineate a bow.[194] The Fetis design of a *ravana* and his so-called *ravanastron* and *omerti* are actually of Chinese provenance, as was his Indian *tambourah*.[195] The fact is that the earliest account of the function of the bow is given by al-Farabi.[196] Passing to wind instruments – the *surna, alghuzah, moshuk, nafir*, and *karna* – their very names confirm their origin, as do those of the percussion group – the *tablah, tablik, naghara, duffda*, and *da'irah*, however much some of these names may have been altered.[197]

The music of the peoples of the Malay Archipelago was also influenced by India, especially Muslim India, on the instrumental side. The bowed *rabab*, or spike-footed viol, which spread with the adoption of Islam is known in the various islands as the "regab," "repob," "erbabi," and "arababu." The lute-like Arab *qabus* or *qanbus* and the Turkish *qopuz* appear as the "gambus," "babbus," and "kabosi," whilst the *surna* or *sunray* becomes the "serunai," "sarune," "sruni," and "sralai."[198] Further north, when the Mughuls became masters of China (641 – 770/1213 – 1368), the instruments of Islamic peoples began to influence that land. Kuglai Khan introduced an organ called the *hsing-lung-sheng* into China; it is being expressly mentioned as coming from the "Muslim kingdoms" of the "lands of the West."[199]

The armies of the Yuan rulers comprised large contingents from Turkestan, and a number of their Court

officials were Persians. Was it any wonder that bands and orchestras of Muslim musicians should find favour at Chinese Courts? Here were to be heard such instruments as the “tan–pu–la” (Turki *tanbur*), “sai–t’o–erh (*sitar*), “huo–pu–ssu” (*qopuz*), “la–pa–pu” (*rabab*), “ha–er–cha–k’o” (*ghijjak*), “k’o–erh–nai” (*qanun*), ta–pu–la” (*tabl*), an “ta–pu” (*daf*).200 Thus, we discern how the Islamic arts in music traversed land and sea, covering continents and oceans, bringing to distant shores the indigenous music of several Near and Middle east peoples, which was not only fresh and novel, but had a comeliness and grace, a form and symmetry dissimilar from their own, some of which, wherever possible, were eventually absorbed.

Finally, there is the question of the influence of the music theorists of Islamic peoples – especially that of the Arabic theorists – in the practical and theoretical spheres of music. All historians of art and science have openly acknowledged the debt that we owe to Islamic peoples during the Middle Ages,201 and one can include the science of music in Europe’s indebtedness, however small it may be, in our modern concept of obligation. Greece had always been a borrower from the East in the distant past. Even in the days of Byzantium she was absorbing from the Orient.202 Yet with all the trumpeted fame of the Hellenic world, not a single treatise on the theory of music was produced – or at least has survived – from Anonymus II (fourth/tenth century) at the same time of Psellos (fl. 442/1050).

It was only the Arabic treatises on that subject which had currency from Seville to Samarqand, viz. those of al–Kindi and al–Farabi up to those of ibn Sina and ibn Zailah (d. 440/1048).203 One cannot help noticing the complete absence of genuine music theorists in Christian Europe from the pre–sixth century A.D. to the mid–third/ninth century.204 The reason for the decay has been described by the Muslim historian al–Mas‘udi (d. 345/956). He says, “In the days of the ancient Greeks...and Byzantium, science was developed and scholars were honoured. Natural science was particularly studied...as well as the *quadrivium*, i.e. arithmetic, geometry, astronomy, and music...Then came the Christian religion, which...destroyed and blotted out the teachings of science. All that the ancient Greeks had placed before the world vanished, or was distorted. Among the noble sciences which were thrown aside...was the science of music.”205

This is not a biased picture by a Muslim. The facts can be proved up to the hilt by Christian historians who had the *ipissima verba* of the Fathers of the Church before their very eyes. Tertullian (d. c. 240 A.D.) decried Pagan literature,206 i.e. the literature of Greek and Latin philosophers, which was in strict accord with the authoritative *Apostolic Constitutions* which laid down, “Hold aloof from pagan books entirely.”207 Saint Jerome (d. 440 A.D.) was warned not to dabble in heathen literature,208 although he actually lamented that so few knew of Plato and Aristotle.209 Even Saint Augustine (d. 430 A.D.) pandered to his readers saying, “Heaven is for the ignorant.”210 Cassian (d. 480 A.D.) reveals that the decrees against Pagan literature were still being observed.211 Even 60 years later Saint Benedict (d. c. 544 A.D.) recommends only the Bible and expositions thereon to be read by the Catholic Fathers.212 It has been admitted that “at no time have the general mass of Benedictines has learned.”213

Under such conditions one can readily appreciate the total neglect of the works of the great Greek theorists of music. Europe knew of them only through fragments – often mistranslated as Roger Bacon affirmed – offered by Martinus Capella, Boethius, Cassiodorus and Isidore of Sevile,214 whereas the scholars at the House of Learning" (*Bait al-Hikmah*) at Baghdad had made Arabic translations of the works on music by Aristotle, Aristexenus, Nicomachus, Euclid, Cleonids, and probably Ptolemy and Aristides Quintilliannus by the third/ninth century.215 We have seen how both Euclid's *Canon* and Aristotle's *De Anima* had been the subject of Arabic commentaries (*shuruh*), and all were part of collegiate studies in Islamic lands, since music (*'lim al-musiqi*) was part of the course of mathematics (*riyadiyat*), i.e. the *quadrivium* of the medieval European studies.216

To appreciate the meaning of the impingement of Arabic learning – in the sciences especially – on Western Europe, one has to consider the prevailing cultural conditions there. In Spain, the hub of Islamic culture in Europe, we have Bishop Alvarus (third/ninth century) complaining that whilst his congregations could not pen a letter in their own tongue, they could accomplish mono-rhyme in Arabic,217 while the ignorance of his clergy was deplorable.218 At the centre of Europe's intellectual culture – the Carolingian Empire – learning had so declined that studies had almost ceased, whilst at Cluny the subjects of the *quadrivium* were but little studied.219 The Monk of Angouleme admits that "there existed in Gaul scarcely a trace of the liberal arts" before the days of Charlemagne, and it was no better in Rome, the very centre of Christianity.220

In Muslim Spain the cultural atmosphere was far different. Sa'id ibn Ahmad al-Qartabi (d. 462/1070) writes of that land thus, "The learned of al-Andalus exerted themselves in the cultivation of science, and laboured in it with assiduity."221 Ibn al-Hijari (d. 590/1194) testifies that under the Umayyad regime in al-Andalus (second – fifth/eighth – 11th centuries) "students from all parts of the world flocked...to learn the sciences of which Cordova was the noblest repository, to derive knowledge from the mouths of the doctors and *'ulama'* who swarmed in it."222 What was taught specifically of the theory of music we do not know. The treatises of al-Farabi, the Ikwan al-Safa, ibn Sina, and the later Abu al-Salt Umayyah, ibn Bajjah, and ibn Rushd were available to all, most of these authors being known by their Europeanized names as Alpharabius, Avicena, Avempace, and Averroes. (See H. Albert, *Musikanschauung des Mittlealters*, Halle, 1905, pp. 143, 169).

In spite of the destruction of Arabic manuscripts by Cardinal Zimenes in 898/1492 *et seq*., a few manuscripts on music theory have survived, notably that of al-Farabi, the "Major Book on Music" (*Kitab al-Musiqi al-Kabir*), now preserved at Madrid, being a sixth/12th century copy made for a student of ibn Bajjah (Avempace).223 Al-Farabi's treatment of the physical bases of sound, also dealt with by the Ikhwan al-Safa, was a notable advance in that particular sphere.224 His description of the musical instruments of his day stands unique in the history of music. European theorists seem not to have considered the subject worthwhile. His minute account of the *accordatura* of the necked stringed instruments, the scales of harp-like instruments, and the compass and digit holes of the wood-wind family were subjects unheard of before his time,225 although al-Kindi had dealt with the lute in that

fashion a century earlier.[226]

In a Persian treatise, the "Treasure House of Rarities" (*Kanz al-Tuhaf*), dating from the eighth/14th century, we have another example of the thoroughness of Islamic music theorists. In this we have not merely the musical gamut of an instrument described, but recommendations as to the style of facture, the best types of wood for use, an elaborate account of the manufacture of silk and gut strings, devices for amplifying the tone by means of sympathetic strings – the first account of its kind as well as the sprinkling of powdered glass on a glue covered interior of an instrument so as to improve the tone. The earliest mention of that device in Britain is a patent (No. 7454) taken out in 1253/1837. Ibn Sa'id al-Maghribi (d. c. 680/1280) says that books on "the various instruments and the art of making them are common among us," while in the days of Ibn Rushd and al-Shaqundi (d. 629/1231) Seville was the centre of the manufacture of musical instruments, and had an export trade.

How much of the Arabic material recorded above was translated into Latin we have no record. Yet seeing that Arabic was not only spoken by the Arabs and Moors, but also by the Mudejars and Mozarabes, who were, respectively, the Muslims who remained in the reconquered Christian Spain, and the Spaniards and Portuguese who lived under Muslim rule, much would have been passed on orally. One outstanding man in the former group was Muhammad ibn Ahmad al-Riquti, who, when the Christian armies took Murcia in 640/1242, was retained by the Christian king to teach in his schools, he himself being a famed as a music theorists and mathematician.[227] That some of it was passed on via the Latin tongue or script we know from Anthony a Wood who says that when Roger Bacon lectured at Oxford, using faulty Latin translations, he was ridiculed by Spanish students, who have known the Arabic originals.

According to Bacon, there were few mathematicians among the Latins, and both he and Adelard of Bath strongly advised students abandon European schools and seek the fountain-head in Muslim Spain.[228] Two Arabic tractates on the sciences which contained a section on music were translated into Latin, viz. al-Farabi's "Register of the Sciences" (*Ihsa' al-'Ulum*) and an anonymous "On the rise of the Sciences" (*De ortu scientiarum*), both of which became formal textbooks in European schools. Neither was of much value *per se*, since each merely outlined the bases of the study.[229] Yet they were quoted by Gundisalvus, Magister Lambert (Pseudo-Aristotle), Vincent de Beaufais, Roger Bacon, Jerome of Moravia, Walter of Oddington, and others.[230]

The Islamic impact on musical instruments has already been shown, especially in the stringed variety with their frets. These latter were fixed according to the old Arabian system of ibn Misjah (d. c. 97/715), which was based on Pythagorean tuning, a circumstance which completely dispels the erroneous assumption of the Director of the "Museo-Labordtiorio de Musica Marroqui" at Tetuan, D. P. Patrocinio Garcia Barriuso, that the music of Morocco, Algeria, and Tunis is not "Arabian music.[231] As H. G. Farmer has been demonstrating for many decade, the "musica hispano-musulmana," which he believes originated in Spain, was actually the old Arabian system of ibn Misjah, Ishaq al-Mausili, Ziryab, ibn al-

Munajjim, al-Kindi, and al-Farabi, a "sisteme model distonico y cromatico," as he terms the present Moroccan music.

According to him – and his book has received the "Imprimatur" of the Roman Church – those "eminent musicologists" who have studied Moorish music have approached the subject with "prejudice, lack of knowledge, and impropriety of nomenclature," when they have dubbed "Spanish-Muslim music" as "Arabian music." So as to demonstrate the "superficial affirmation" of those erring musicologists mentioned above, he would enlighten the octave, of which Europe was an *au fait* so early as Sir John Chardin (1123/1711) and about the quasi-Arabian quarter-tone system, really Turkish, which succeeded in the 11th/17th century, the latter being illustrated by Dr. Barriuso, who copies a diagram from a music treatise of Kamil al-Khalu'i (1322/1904), so as to prove that his "Spanish-Muslim" music of a thousand years earlier was not "Arabian music." *O sancta simplicitas!*

So far back as the third/ninth century, when Christian Spain was in its intellectual childhood, the Baghdad scholars had translated from Greek into Arabic the Muristus treatises on the organ and hydraulic. Such works enabled the Arabs to construct similar instruments which led to some interesting results. An organ or hydraulic was being used in the Caliph's palace at Baghdad in the time of Princess 'Ulayyah (d. 210/825),[232] and there is evidence that organ constructors were known in Syria during the sixth/12th century.[233] There is no reference to the hydraulis in the Orient since the time of Isaac of Antioch (fl. 459 A.D.), and in the Occident since the days of Apollinaris Sidonius (c. 483 A.D.),[234] because the Greeks had adopted a weighted blast bag instead of hydraulic pressure.

Could the resurgence of the hydraulic in the third/ninth century have been due to the Arabic translations of Muristus?[235] Amedee Gastoue says that "the makers of the first large organs in the Occident in the third/ninth century were, without doubt, either Greeks or Syrians," and since he shows that the hydraulic had died by that time among the Greeks, the greater probability rests with the Syrians at the revivers.[236]

Returning to the question of the frets on the necks of stringed instruments, the Arab theorists used an alphabetic notation to designate the notes produced as those frets as we see in the "Treatise of Music" (*Risalah fi al-Musiqu*) of ibn al-Munajjim (d. 300/912),[237] which the author specifically stated was based on the system of Ishaq al-Mausili (d. 235/850) who was the teacher of Ziryab (d. c. 238/852), the famous musician of Moorish Spain. Europe, however, possessed no definite and practical notation of that sort. In its church music, neumes were used as a means of registering the melodic outline, but they did not convey any precise intervallic steps. By the time of Hucbald (fourth/tenth century), we find an alphabetic notation on very much the same lines as that of the Arab system, giving a major diatonic scale.[238]

No wonder that the latter has been attributed even to the Arabs,[239] or to the Semitic Orient.[240] It may also be pointed out that the instrumentalists of the minstrel class possessed a practical knowledge of music theory (*ad delectandos audientes artis ratione temperare*), whereas the church singers did not. This was stated by pseudo-Huebald.[241] Later, the Arabic influence on the alphabetic tablature for stringed instruments is openly admitted in a Latin manuscript entitled *Ars de pulsation lambuti*[242]*et*

aliorum similium instrumentorum (902 – 903/1496 – 1497) in which the tablature is said to have been "invented" by a "Moor of the Kingdom of Granada."[243]

Conde de Morphy said that Spanish lute tablature was "probably of Oriental origin," whilst his helper, Gevaert, more positively asserted that the Castilians and Aragonese "elaborated their tablature in imitation of that of the Muslims."[244] Some other strange coincidences crop up in history. In his section on the "Eight Tones," Odo of Cluny (d. 330/942) attached names to the *chordae* which have more than casual interest because three of them are Arabic, viz., "schembs" (*shams*), "caemar" (*qamar*), and "nar" (*nar*).[245] This terminology belongs to the doctrine of the ethos (*tathir*) as related to music, firmly believed in by Islamic peoples up to the present day.[246] The General influence of Islamic culture on Gerbert of Aurillac (d. 394/1003) and Constantine the African (d. 480/1087) is not unworthy of notice. The former studied the mathematical sciences (*matheses*) at Barcelona, and that included music,[247] which had been neglected in France.[248] Indeed, he had been dubbed "Gerbert the Musician."[249]

Constantine was born at Tunis (Carthage), and then held by the Muslim Zairids. He spent 39 years in the East among the Chaldaens, Arabs, Persians, and Egyptians, and studied their sciences, including music. Because of his settling in Sicily and at Monet Cassino in Italy, his writings had considerable influence on European culture.[250] One theorist who used him was Aegidius Zamorensis (seventh/13th century), a *protégé* of the Arabophile Alphonso X el–Sabio,[251] but a recent writer, Gerhard Pietsch, does not perceive any "Arabian influence" in his writings. Aegidius could scarcely have avoided the "Arabian influence" since we read in the *incipit* to his *Ars musica* that he learned "chiefly from Iraqian (Chaldaen) and Egyptian books."[252]

The music practiced by the Arabs and Moors also influenced Western Europe in other directions, notably in the melodic arabesque, organum, and the hocket. The arabesque or free embellishment of the melody (*tahsin*) was the art in which the Moorish *virtuoso* excelled. His "excesses" (*zawa'id*) – as those *melismata* were called – were usually vocalized on such words as *ai* or *laili*, which were introduced even into Spanish songs. (See E. L. Chavarri, *Musica Popular Expanola*,Barcelona, 1927, p. 36.) All sorts of tricks prevailed – the *mabturah* (staccato), *istirahah* (repose), *shadhharah* (short, soft note), and the *nabrah* (a glottal catch like the *coup de glotte*).[253] This last may possibly be the device hinted at by Magister Lambert, which Merchettus of Padua calls a "feigned voice."[254]

On the other hand, it may have been the "embellishment" known to the Arabs and Moors as the *shahajah* (a whining sound), which was accomplished by the singers making a swift *glissando* from a low note to its fourth, fifth, or octave.[255] This latter was in partial accord with the instrumental device known as the *tarkib* illustrated by al–Kindi under the name of *jass*, which meant plucking two lute strings with the thumb and forefinger.[256] Ibn Sina gave the name *tarkib* only to the simultaneously struck fourth or fifth, whilst striking with the octave was called the *tad'if*.[257]

In other words, he recognized the distinction between "organizing" and "magadizing." It was that Arabian and Moorish *tarkib*, which, most likely, prompted the European "organum," although with the Muslims

the *tarkib* was, at that time, simply an “embellishment.” Today, the music of the Turkoman peoples is an “organum simplex” with the “diapente.”

The most significant influence by the Moors on the music of Western Europe was in mensural music. Neither the Greeks nor Romans were particularly interested in other than prose rhythms. With the Arabs, rhythmic modes (*iqa‘at*) in music, six in number, had existed since the first/seventh century, two or more were added later.[258] Up to the third/ninth century the singer and instrumental accompanist observed the same rhythm, but Ibrahim ibn al-Mahdi (d. 224/839) and his Romantic school introduced schemes whereby a singer and the accompanist used different rhythms.[259]

When to that contrariety there was added a further diversity in the prosody (*‘arud*) of the verse, a performance became more than intriguing, and H. G. Farmer has given an illustration of that in an article on *iqa‘at* in the *Urdu Encyclopaedia of Islam* and in *Grove’s Dictionary of Music* (1374/1954).[260] No wonder the Muslims referred to their rhythm as the “heartbeats of Allah,” for its content was infinite and boundless. Islamic music is fundamentally homophonic, and therefore quite different – in that respect – from that of Europe which is harmonic or polyphonic. Yet the Muslim seeks his harmony (*muwafiqah*) in the variegated rhythmical and prosodical structure of song and in the tonal differences of the rhythmic beats (*durub*). At first, such disparate things must have appeared to Christian Europe as a *lucus a non lucendo*.

Yet the time came when the Spanish singer and instrumentalist found themselves imitating the Moorish *mughanni* and *mutrib* in their rhythms. In the very nature of things the beats of the plectrum (*midrib*) on the lute or pandore strings, or the taps on the tambourine or drum, often left intermediate silences (*sukun*), which were the very anti-theses of the sustained notes of the melody. It was because of that circumstance that Europe – after it had adopted mensural music – called the Moorish *iqa‘* by the name of *cantus abscisus*: hence Simon of Tunstede’s chapter called *De truncationibus sive hoketis*.[261]

The latter word, “hocket,” “hoquet,” or “ochetto,” is simply a phonetic reproduction of the Arabic *iqa‘at*, a fact which European scholars only very tardily acknowledge,[262] although H. G. Farmer had claimed that derivation as far back as 1344/1925.[263] Most of them still adhere to the non-sensical – when it is not actually laughable – derivation from the English “hiccough” or “hiccup.”[264] We see the same intrusion of the “h” in “hocket” as in Latin translation of Avicenna’s “Canon” (*Qanun*) where *‘ishq* becomes “hash.” Of course, not all of the Moorish rhythms were borrowed by Europe.

Such an outlandish design as the *makhuri* of al-Kindi or the *khafif al-ramal*, both quintuple, were rejected, although Johannes de Grocheo (c. 700/1300) admitted that the music of the peoples was “not precisely measured,” and that included the Basque “zortzico,” which was also a quintuple rhythm. Curiously enough, the examples which only used two note values of the “longa” and “brevis” in “hockets” were dubbed *musica resecata*, whereas those which used many more note values were classed as *hoquetus vulgaris*, and this may imply that it was more used by the people at large.

The mention of note values and the popular “hocket” raises two vital points which deserve consideration. We are told by one of our leading musicologists, R. Thurston dart, that in Europe “the first steps towards a convention establishing the duration of a note were made in the late sixth/12th century,”265 and there were only two or three duration values to notes in those days. Yet the Arabs recognized five different mensural types of sound at least, although they had no definite “notion” for the latter, save a cumbersome tablature and onomatopoeia,266 up until the seventh/13th century, when an alphabetic (*abjadi*) and numeric (*‘adadi*) notation or tablature was introduced.267

Concerning the *hoquetus vulgaris*, it is worth recalling what Jerome of Morvia seventh/13th century) quotes on the authority of Franco of Cologne (fifth – sixth/11th – 12th centuries) who was the earliest of the mensural theorists. He affirms that the “hocket” was applied to songs which had *already been composed*, whether in Latin or in the Vulgar tongue, which means that the “hocket,” that is to say the Moorish *iaq‘at*, was a new device which was being applied to older material, notably the music of the people. Lastly we should remember that the approach of the Arabs and Moors in their *iqa‘at* and that of Ehristian Europe in their borrowed “hocket” were different; the former, because they viewed music horizontally, using rhythmic contrariety between the vocal line (prosodic) and the accompaniment (rhythmic), the latter, because they visualized music vertically and introduced those mensural features into three or four melodic parts.

European notation may also have received novel outlook from Arabian or Mozarabian sources, as H. G. Farmer pointed out in 1344/1925.268 One of the Latin mensural theorists, known as “Anonymous IV” of Coussemaker, mentions in the work entitled *De mensuris et discantu* (c. 674/1276) two technical terms, “elmuarifa” and “elmuahym,” as the names of notation symbols.269 The words are Arabic, although the first of them appears in the fifth/11th century *Glossarium Latin–Arabicum*, under the term *al–ma‘rufah* which equates with “nots.”270 It may be identified with the form *al–ma‘rifah* (cognition).271 It is explained in “Anonymous IV” as having “a stroke on the left side in descending, just as the English depict it.”272

As for “elmauhym,” that word looks suspiciously like *al–mubhim* (shutting) or rather *al–mubham* (locked, closed).273 In the Latin translation of the Arabic of Euclid’s *Elements* the word “elmauhym” stood for the “rhomb.” We are told that some music scribes penned that note with a square head, whilst others made it rectangular. In one form it was a “plica” with an ascending and/or descending stroke (*tractus*). When it was written as an obliquely protracted line it was one of the “currentes” running notes), in which character it could be a “double, triple, or a quadruple ‘elmuahym’” – and could even be extended to sevenfold.274

The problem raised by this Arabic technical nomenclature is not easy to solve. One naturally asks, “Why were Arabic words used in a Latin work if there were technical equivalents in that language?” The author of “Anonymous IV” was certainly well acquainted with Pamplona and other Spanish works on the subject, and that Arabic terminology may have come through a Mozarabic scribe who would, in southern Spain, be acquainted with that language. Could we not assume that “elmuarifa” and “elmuahym”

represented some new mensural devices in notation? Incidentally, “Anonymous IV” features both Leonin of Paris (sixth/12th century) and Perotin, his successor (seventh/13th century).

Gustave Freese sees in the “Currentes” of Leonin a synonymity with the “elmauhym” and “elmuarifa,”275 i.e. that it “may owe something to Arabian sources, by way of the troubadour influence,”276 whilst in Perotin, “the quick–moving upper parts would seem to suggest some troubadour and folk influence.”277 One of the last tributes to the music of Islamic peoples by A. H. Fox Strangways, the author of *The Music of Hindustan*, was to say this, “The Arabs, who taught to Europe their mathematics and medicine, have influenced our music in ways that we are only now finding out.”278

Yet whatever the “pros” and “cons” in the subject may be, both East and West agree fully in their praise of music, and Walter do Odington (eighth/14th century) quotes Avicenna (ibn Sina) side by side with St. Gregory, St. Bernard, and the Psalmist, saying, “Inter omnia exercitia sanitatis cantare melius est.”279

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Chapter 59: Minor Arts

A

Anyone embarking on the study of Muslim arts would, during the course of his investigation and research, have to answer three fundamental questions satisfactorily.

(1) What is the reason for the surprising unity of style which we observe in works of art throughout the Muslim countries during a certain period?

(2) Why is it that a period of almost hectic artistic activity is followed, sometimes almost immediately, by qualitative decline and technical decadence?

(3) What is the reason for the remarkable success achieved by the Muslims in the domain of minor arts?

The answers to the first two questions rest on an appreciation of the relationship which existed between the artists of the Muslim countries and the rulers thereof.

The development of Muslim arts–major or minor–is related inalienably to the rise and fall of powerful dynasties of rulers. Every dynasty invited to its Court craftsmen and artists from all over the land under its sway. If an invitation was not enough, force was sometimes employed to compel their appearance. Under the Umayyads, the 'Abbasids, and the Fatimids, therefore, artists flocked to Damascus, Baghdad, and Cairo which alternately became centers of artistic activity, learning, and letters. Artistic traditions were developed and techniques perfected under the patronage of the rulers and the aristocrats. The middle class, obviously, had no say in the matter, and the artists kept themselves aloof from the masses.

As a particular dynasty fell from power and another emerged as its successor all the artists flocked to the new center of patronage, and overnight, as it were, the new dynasty "at one stroke inherited an artistic tradition that had been matured elsewhere." The transport of works of art themselves over great distances also helped to spread style and technique.

This answers more or less the first question. The second question is, perhaps, easier to answer. Since the development of arts was linked primarily with the fortunes of ruling dynasties, as soon as political conditions were disturbed at their center of activity, the artists deserted it and proceeded to other centers to put their fortunes to the stake. If a new dynasty arose which was capable of patronizing the artists and

maintaining the artistic tradition, the artists' activity continued unabated, but if there was a period of chaos or political disturbance spread over a considerably wide area, artistic traditions had a tendency to evaporate into thin air. The artists deprived of royal patronage could not produce great works of art and, thus, in a few years the tradition built up by conditions of stability and prosperity would lose force, and products of art suffer qualitatively. It may be observed that just as the decline of artistic traditions was amazingly swift, the stabilizing of artistic activity was also correspondingly quick. Now for the third question.

The line of demarcation between arts and crafts is admittedly fine. It necessarily follows that it is finer still between major and minor arts.

In the case of Muslim minor arts there is another factor which has to be taken into account, if we are to assess correctly the value and worth of the contribution made by the Muslims in this domain.

On account of certain restrictions imposed upon Fine Arts even where State patronage was available, there existed a lurking suspicion in the mind of the artist that he was working contrary to the precepts of religion. Since religion has always been a living force and a vital factor governing human activity, especially in the East, artists in Muslim countries were forced to adapt themselves to the conditions created by theological restrictions on Fine Arts and to devote themselves to the minor arts, such as calligraphy, carpet-making, wood-carving, etc. This is why we find that the Muslim peoples have achieved such remarkable success in the minor arts. The inspiration which would have molded works of Fine Arts was diverted into other channels. The Muslims, therefore, developed crafts indicative of such exquisite skill, superb craftsmanship, and artistic sensibility as is not to be found among the artists of any other nation, race, or country.

As a matter of fact, arabesque–a minor art of great importance–derives its name from those who originated and practiced it with great skill–the Arabs. Before we proceed to discuss in detail the phases of the various minor arts it would perhaps be expedient to take note of another remarkable phenomenon related to artistic activity in Muslim countries.

It is generally believed that the fall of the 'Abbasids and the destruction of the Caliphate as a symbol of authority and a pivot of political sanction led almost immediately to qualitative decadence in the realm of major and minor arts. This is not the whole truth. As a matter of fact, the fall of the 'Abbasids did lead–as was usual in Muslim countries with the fall of a powerful dynasty–to qualitative decadence in the realm of art for some time immediately after the destruction of the Caliphate.

However, the opening up of the trade routes by the Mongols, the diffusion of cultural and artistic traditions generally, and the establishment of powerful dynasties which inherited, as it were, the cultural and the artistic legacy of the 'Abbasid Caliphate, resulted after a century or so in the creation of conditions which were favorable to the birth of new ideas in the domain of art and were also responsible for the continuity of new artistic traditions which had come into being due to the diffusion of cultures and

the admixture of civilizations as a direct result of the Mongol invasion.

This remarkable phenomenon of the development of artistic traditions can be observed to be occurring almost simultaneously under the Mughul rulers of India (933–1119/1526–1707), under the Safawids in Persia (908–1052/1502–1642), and the Ottoman Kings in Turkey during their most glorious period (768–1058/1360–1648).

B

Of the leading minor arts we shall consider one by one the following: (1) calligraphy and illumination, (2) book–binding, (3) pottery, (4) textiles and rugs, (5) wood–carving, ivory and bone–carving, and (6) metal–work, glass, and crystal.

1. Calligraphy and Illumination

The art of calligraphy or artistic writing can be divided into two principal types: (a) the Kufic, deriving its name from Kiifah where it was probably first used and (b) the naskh.

The Muslims have shown themselves to be worthy practitioners of both types. The earliest copy of the Qur'an which has come down to us is in Kufic characters. This style of calligraphy with angular letters remained popular for many centuries amongst the Islamic peoples.

After the fifth/eleventh century the Kufic script gave place everywhere almost invariably to naskh with rounded letters in sharp contrast to the angularities of the Kufic script.

The Muslim genius in Spain, having come in contact with Western influence, gave birth to another distinctive school of calligraphy known as Maghribi (western). This school is also known as Cordovan.

In Iran, after the Islamic conquest, the indigenous artists cultivated the scripts adopted by the Arabs and also the methods of illuminations which were then popular in other Muslim countries. The Iranian calligraphers, under the Great Saljugs, however, generally emphasized in their calligraphy the vertical as distinguished from the horizontal. The type of illumination and calligraphy found under the Saljugs is varied, rich, and extremely beautiful since the Iranian genius could fall back upon the tradition of Mani. Maui (third century A.D.) himself was reputed as an excellent painter, but his disciples were also well known for beautiful illumination and charming calligraphy. Specimens of the works of Mani's followers have been unearthed in Central Asia in the Turfan basin and it has become abundantly clear that the Iranian calligraphists and artists gave free reign to their indigenous genius while adapting the Arabic script and method of calligraphy.

The most beautifully illuminated copy of the Qur'an of this period was prepared by Abu al–Qasim in the fifth/eleventh century. It is preserved in the British Museum.

It was perhaps during the sixth/thirteenth century that a new school of writing was developed in Iran which was to be known as ta'liq: the characters in this type of writing tend to slope downward from right to left. Ta'liq flourished but naskh also remained in use especially in religious texts.

It is the irony of fate that the descendants of Hulagu, who was responsible for massacring millions of Muslims and killing the last 'Abbasid Caliph, became the patrons of calligraphy when they embraced Islam.

These convert kings known as 11-Khans of Persia had many fine works executed under their patronage. Uljaitu Khuda Bandah Muhammad was one of the most celebrated patrons of this art.

It was perhaps during the regime of 11-Khans (654-750/1256-1349) that illuminated pages of books were for the first time decorated with abstract ornamental designs. This may have been due to Chinese influence which permeated painting, and since calligraphy was considered to be a branch of painting, it was bound to be affected thereby. The illuminated manuscripts of this period show geometrical compositions of great beauty and charm, the favorite colors being gold and blue. It may be remembered that the use of gold-dust was a peculiar feature of the book-illuminations produced by Mani's followers. There is no doubt that the Iranian artists never forgot their national heritage and used the background colors-mainly gold and blue-in sharp contrast to other colors in the foreground with great dexterity and sensibility.

It was during the rule of Timilrids in Iran that calligraphy really came into its own. The princes of the House of Timur were polished diplomats, skillful administrators, and celebrated devotees of Fine Arts. Their possessions were vast and the talent which mustered to their courts was correspondingly impressive. It was during their regime that the art of calligraphy underwent a revolutionary change and the Nasta'liq was invented which is a highly developed type of writing combining the elegance, vigor, and charm of both Naskh and Ta'liq.

It is generally stated that Mir'Ali of Tabriz was the inventor of this type of writing, but most probably his calligraphy was the culmination of the fusion of the two types, namely, Naskh and Ta'liq-a process which must have been going on for a very long time. One of the princes of the House of Timor, namely, Sultan Husain, is justly celebrated for being one of the greatest .patrons of arts and learning. Sultan 'Ali Meshedi, the famous calligraphist, was a prot6ge of his. Other celebrated calligraphers of the period were Ja'far of Tabriz, 'Abd al-Karim, and Sultan Ibrahim (son of 4h rah Rukh). The story goes that Sultan Ibrahirn was capable of writing in six different styles. A copy of the Qur'an written by him in 828(1424 is preserved in the shrine of Imam Rida' (Meshed, Iran).

In the domain of illumination also certain changes occurred after the Mongol invasion. Arabesque was interlaced with figures of grotesque Chinese dragons and fantastic imaginary plants. The use of gold-a remnant of the Sassanian tradition-however, remained a constant feature.

Calligraphy and illumination as developed under the patronage of the Timarids continued to flourish also

under the Safawids, who were contemporaries of the Great Mughuls and who gave to India the gift of miniature painting. One of the most famous calligraphers of the Safawid period was Mir 'Ali of Herat who prepared a manuscript of one of Jami's famous Mathnawis.

The art of the book–calligraphy and illumination–found its most worthy and celebrated exponent in Mir 'Imad Katib whose name for all practical purposes is even today synonymous with elegance, charm, and beauty of writing. He settled in Ispahan in 1008/1599 and copied for Shah 'Abbas many manuscripts revealing superb skill and unique craftsmanship. His rival 'Ali Rida' 'Abbasi–not to be confused with a painter of the same name, well known for his devotion to the Chinese technique of painting–also executed many works of beauty and elegance.

Illumination painted in gold also came into its own under the Safawids and reached the culminating point of the development of the Sassanian tradition. Mahmud, a celebrated painter and calligraphist of Bukhara, appended to his signature the cognomen Mudhahhib. Sikandar Munshi, the celebrated historian of the Safawid princes, opines that “Hasan Baghdadi was unmatchable, unsurpassed, and unique in his time in the art of gilding. In short, he brought the art of gilding almost to a miracle ... and the gilding of Bari cannot bear comparison with his minute and fine work.”

Several other techniques practiced by Safawid artists may here be named: stenciling in which the design emerges in the form of light or dark silhouette, de coupe work in which the design is cut out and then pasted on colored ground, generally blue.

Turkish calligraphists also achieved distinction but, as compared with the Iranians, their contribution does not appear to be very significant.

2. Book–binding

It is obvious that book–binder had played a very important role in the preservation of valuable manuscripts before the press made it possible to produce mass duplicates of valuable works. It is quite possible that the bookseller was also the book–binder because it was one of his duties to ensure that valuable manuscripts are not destroyed or damaged by the passage of time. This view is strengthened by the fact that the word warraq means both a book–binder and a bookseller.

The earliest known book–covers of the Muslim period were made by Egyptian artists and we may safely assert that they may be dated from the second/eighth to the fifth/eleventh century.

Book–binding also reached its zenith under the Timurids. The artists of the Herat Academy executed leather work of great beauty and distinction, leather being the ideal material for book–binding.

The exterior of the cover generally shows stamped decoration with Iranian landscape, Chinese motifs, and arabesque interlacing.

Under the Safawids the book-covers were more decorative, and gold was used more abundantly. Gilded arabesque was interlaced with very fine and beautifully executed floral scrolls and Chinese cloud bands. Birds and animals were also represented, but, generally speaking, it was arabesque interlacing which was more emphasized.

Under the Safawids painted and lacquered book-binding also became the rage of the day. The process was as follows. The covers which were to be painted were given a coat of very fine plaster or gesso and then a thin layer of lacquer. This constituted the background for watercolor painting. Again, the watercolor was given several layers of lacquer so that climatic changes may not prove damaging to a fine work of art.

Ustad Muhammad was one of the most notable book-binders who painted lacquer covers. The Cartier Collection in Paris and the Royal Asiatic Society, London, possess some very beautiful examples of lacquered book-binding.

The Turkish artists, as usual, followed in the footsteps of their Persian brethren in book-binding, but, though their work was beautiful, it bore no comparison with the original and polished products of Iranian craftsmen.

In concluding this short note on calligraphy and book-binding, it is necessary to point out that book-binding and illumination in the West is indebted to the East. The Italian painters, book-binders, and artists, especially in Venice in the late ninth/fifteenth and tenth/sixteenth centuries, imitated Eastern technique especially that of the Iranian craftsmen, and through them many Oriental motifs and decorative features were introduced in the West, the book-binding of which today is the envy of the East.

3. Pottery

There seems to be no doubt that Mesopotamia or the “Land lying between the two rivers” was the most important center of the potter's art even in the most ancient times. In the ancient kingdoms of Assyria and Babylon the potters were at their best, especially when using what is commonly termed as the “naturalistic style.” The Parthians (249 B. C. to 226 A. D.) whose language is known as Pahlawi, the forerunner of modern Persian, and the Sassanians (226-641 A. D.) who were justly celebrated for the grandeur of their architecture and the splendor of their monuments and inscriptions, liked their artists to express themselves in abstract patterns. Mr. Arthur Lane in his monograph, Early Islamic Pottery, would have it that the Assyrian and Babylonian traditions almost died out after the Sassanian times and that Islamic pottery developed in accordance with the technique current in the Mediterranean area and not with that in the Asiatic hinterland. It is difficult to agree completely with this assessment of the Near Eastern influences as they contributed to the development of pottery in Muslim countries because when pottery came into its own in the third/ninth century it was in Mesopotamia that it found its most skillful exponents and designers.

Pottery fragments found in Samarra show signs of great skill and craftsmanship. Not only the variety of the different specimens of the potter's art found at Samarra is interesting and significant but it so appears that there were certain secrets pertaining to the manufacture of luster pottery which were known only to the Mesopotamian potters. These closely guarded secrets, however, became common property when the Mesopotamian potters migrated to the Courts of the Fatimid Sultans. By a curious anomaly of fate the descendants of these immigrant artists again came to Persia after the collapse of the Fatimids and brought to this country a skill which had been vastly improved in the congenial atmosphere of Egypt under the Fatimids from 359–567969–1171.

The conquest of the Near East by the Arabs was responsible for the evolution of a new technique of the potter's art. In the beginning the Muslim potters followed in the footsteps of the local artists but, in due course of time, they became the originators of new and far more elegant and beautiful varieties of pottery.

Under the 'Abbasids, Iranian potters from the second/eighth to the fourth/ tenth century achieved astounding success in their art and their products revealed such richness of pattern, warmth of color, and beauty of design as were never seen earlier. Usually designs were painted under a transparent glaze or over an opaque one. In the former case, the painting was usually over white or dark slips. Nishapor was a great center of this branch of art and excavations made reveal that even before the advent of the Saljfigs, the potter's art had achieved maturity if not that consummate elegance which was to characterize the products of the Saljaq period.

The greatest contribution of the Muslim potters is the luster technique. It would appear that the Muslim potters were infatuated with the patterns created by light–"light mysteriously refracted by their luster pigment; light playing over a carved or subtly modelled surface; light gleaming through the glazed windows pierced in the walls of a vessel or through the translucent material itself," as Arthur Lane would have it.[1]

Almost all historians suggest that it was the Chinese porcelain or pottery which inspired the Muslim artists, but it may be pointed out that, whereas the art of China is a little stilted and stiff, the pottery of the Muslims is at once "easy, harmonious and well bred."[2]

After Nishapour it was Kashan which became the center of the activity of the potters of the Saljiiq period. It was here that the potters gradually learnt the art of manufacturing wall–tiles painted in luster. The origin of luster painting is uncertain, but it would appear that it was first used in Egypt in decorating glass. Even if we concede that the Iranian artists of Kashan are indebted to Egyptian artists it does not detract from the originality and brilliance of their technique in manufacturing glazed tiles. If we compare the specimens of Egyptian pottery found in Fustat (it was at the same time a city of some importance under the Fatimid rulers) with Iranian pottery and glazed tiles, we arrive at the conclusion that the Iranian artists showed grater skill in execution and mature sense of color.

The glazed tiles of Persia, especially of Kashan, became so celebrated that the word Kashi is now a synonym for a glazed tile. The most beautiful works were executed by the members of one single family (602–735/1205–1334). Apart from tiles the Kashan luster-ware is justifiably praised for technical perfection. The decoration is typically Persian–flowers and birds on the wings and interlaced arabesque. After the Mongol invasion, Mongol hats, Chinese dragons and lotus flowers also appear as a natural consequence of the fusion of the traditions of Chinese and Iranian arts. The three mihrabs in the sanctuary of Imam Rida' at Meshed are perhaps the most elegant examples of the Iranian artists' skill so far as glazed tiles are concerned. These were made by Muhammad abi Tahir.

During the Mongol period lustered tiles were commonly used for the decoration of public buildings, mosques, tombs, and the houses of the great and the rich. Some of these tiles are cross-shaped, some rectangular, and some in the form of stars. It was during this period that another technique was evolved, viz., and the faience mosaic, which became very popular.

The technique of the Mongol era was followed by the artists of the Timurid period, but it may be observed that almost all types of pottery had suffered qualitatively. It may be due to the fact that the Chinese influence being predominant during this period, the artists, instead of reviving the indigenous traditions, tried to imitate specimens of art imported into Iran.

During the Safawid period Iranian artists continued to imitate the Chinese ware and the imitation was sometimes so skillful that the copy was mistaken for the original. Even the decorations consisted of Chinese landscape with typical birds, animals, and foliage, especially legendary dragons and serpents.

In the time of Shah 'Abbas the Great the art of lustre-painting, however, was revived by the potters of Isfahan. Typically Iranian decoration came into vogue. Iranian landscape with birds, animals, and foliage came into its own. The products of these Isfahani potters show great originality and can be clearly distinguished from the imitations of Chinese pottery, especially in porcelain.

Turkish and Egyptian potters also continued to execute beautiful works of art, but there is no doubt that supremacy rested with the Iranian artists.

Gradually, industrialized Europe excelled the East even in the field of pottery, and the Persian market was flooded with white earthenware from Staffordshire.

4. Textiles and Rugs

(a) Textiles under the `Abbasids, Tulunids, and the Fatimids of Egypt (second/ eighth to sixth/twelfth century).–When the Arabs conquered Egypt in 21/ 641, the weaver's art began to undergo a change of great artistic significance. In the early stages, the Copts, who were really very skillful technicians and weavers, were pressed into the service of the Arab Caliphs and noblemen. They taught and practiced the weaver's art in royal factories, known technically as Tiraz factories. It is necessary to point out at this juncture that the term “Tiraz” was used for (i) bands containing woven or embroidered

inscriptions, (ii) embroidered garments and clothes, and (iii) institutions where such garments were manufactured. Unless this three-fold significance of the word “Tiraz” is kept in view, one is liable to get confused.

The importance of the Tiraz factories may be gauged from the fact that many of these were situated in the very homes of the Caliphs-palaces and State mansions.

The Tiraz factories, having been established in Egypt and working under the skillful guidance of the Copts, produced linens and silks of very fine quality. The city Tinnis near Port Said bad 5,000 looms and was justly celebrated for producing fabrics of great excellence, such as Kasab, Bukalimun: the former was used generally for turbans and the latter with amazingly changing colors for saddle cloth and for covering the litters for the Caliphs. Every year the 'Abbasid Caliphs sent a covering for the Ka'bah at Mecca known technically as Aiswah manufactured by the craftsmen of the Royal factories established in Tuna. Another city famous for its silks was Dabiqi; the term “Dabiqi” is mentioned very often in Persian lyrics and Arabic odes. Fustat or old Cairo was also a celebrated center of the weaver's art.

During the regime of the Fatimids, the Egyptian craftsmen surpassed their Coptic masters. The linens and silks of the Fatimid period became so elegant and fine that they were exported to all parts of the civilized world. Generally speaking, the Fatimid artists followed the artists of the `Abbasid regime in the sense that they used either geometrical patterns or figures of animals for decorative purposes, although the Kilfic writing was also observed flanking the decorated pattern. When naskh replaced the Kilfic script, the linen and silk fabrics were decorated with arabesque motifs and the cursive writing of the naskh.

The linen textiles on which decorations and inscriptions were painted or stamped were even more skillfully manufactured. These inscriptions were occasionally in liquid gold, again reminding us that the Sassanian traditions were very strong even under the Fatimids. The technique of stamping and printing decorations on fabrics was developed to such an extent by the Fatimid artists that it spread to Europe, and the Germans showed great skill in imitating the artistic patterns and motifs of the Egyptian Muslims.

(**b**) **Textiles of the Ayyubid and Mamluk Dynasties**.-From the sixth/twelfth to the eighth/fourteenth century, the weaver's art continued to flourish but signs of decline were occasionally noticed. As a matter of fact, the decorations of this period are simple as compared with the superbly executed Fatimid, embroideries in polychrome silk or gold thread.

Stamping and printing were also practiced in accordance with the traditions inherited by the artists. There was a departure in the manufacture of silk which deserves mention. During this period the silk fabric was usually woven with a shuttle on a draw-loom in sharp contradistinction to garments and fabrics with tapestry-woven decorations wherein the weft threads of the designs were introduced with a bobbin or a needle. With the advent of the Mongols and even earlier, the Chinese technique began to influence the weaver's art. It would appear that the Mamluk Sultans of Egypt especially favored the Chinese style of decoration.

(**c**) **Iranian Textiles**–When Tiraz factories were established throughout the territorial possessions of the Caliphs, Iran was no exception. As a matter of fact, the Iranian craftsmen who had inherited the traditional skill of the Sassanian craftsmen very soon adapted themselves to the new conditions and began to produce incomparable works of art. During the earlier period Merv and Nishapour housed famous Tiraz factories.

The Iranian artists of these cities produced silk textiles which appear to have been influenced by the fusion of many artistic traditions–the Sassanian, the Coptic, and the Egyptian. The use of the gold thread is certainly reminiscent of the Sassanian traditions, while the decorative patterns bespeak of Coptic influences. History is curiously silent about the place occupied by Samarqand so far as textiles are concerned, but in literary works we find many allusions to the beautiful fabrics, silks and linens, woven in this great city which witnessed the emergence of the Persian renaissance and which under the princes of the House of Saman became a great center of intellectual activity, learning, and cultural movements.

Under the Great Saljuqs, the Iranian artists proceeded from strength to strength. There was a revival of almost all crafts and minor arts, and Rayy during this period became the most celebrated weaving center. The Sassanian tradition lost its hold, and, slowly but steadily, arabesque motifs of Islamic origin with finely executed scrolls came into their own.

It would appear that Baghdad also was a famous center of the weaver's art during this period, since Marco Polo (seventh/thirteenth century) praises the silks, linens, and gold brocades of Baghdad and Mosul. Allusions in works of literature would tend to show that weavers in this period had spread all over the territorial possessions of the Saljuqs: it has been proved beyond any shadow of doubt that many fine brocades, silk fabrics, and linens preserved in European museums were manufactured in Asia Minor, especially at Quniyah.

It is an admitted fact that the Mongol invaders of Persia patronized the craftsmen and the artisans and massacred the learned and the erudite, considering the latter as useless appendages of civilized life. Amazingly, however, very few Iranian textiles can be assigned with any amount of certainty to the Mongol or Timfirid period. M. S. Dimand has pointed out that many brocades attributed to Iran by Falke are most likely of Spanish origin. The matter, however, is not free from doubt. All that we can assert safely is that the weavers continued to flourish under the Mongols and Timfirids; unfortunately, however, very few genuine fabrics manufactured by them have been preserved.

As with other branches of art, Iranian weaving blossomed forth into its full splendor under the Safawids who had become infatuated with craftsmanship of all types except that of words since poetry excluding the elegy was looked at askance by them. Safawid silks were primarily of three types: (i) plain silks, (ii) silk brocades, and (iii) silk velvets. All the three types were most elegant and were used commonly for the garments of the rich, as hangings and curtains of palaces, and as gifts from the Safawid princes to those who deserved them or who had the good fortune of being present when the kings and princes were in their high spirits during festivities or celebrations.

The decoration of these fabrics is almost typically Iranian–animals moving about gracefully, birds on the wings or perched on branches and foliage moving or still as in breathless suspense. The Iranian artists painted even scenes taken from the famous Persian romances or the epic of epics, the Shahnameh. Nizami seems to have been one of the most favorite authors; incidents from the stories that he weaves have been interwoven by the weavers into silks and fabrics manufactured for their royal patrons and generous nobles. Linens, brocades, and velvets of this period are to be found in many museums all over the world and appear amazingly fresh, spick and span, glowing with life, with warm and soft colors.

Under Shah `Abbas the Great who was a generous patron of all Fine Arts, artists manufactured textiles of great beauty in Yazd and Kashan. Some of these fabrics have come down to us and we know also the names of some artists, for example, Ghiyath and his son. All critics and historians of art agree–and it is very refreshing to observe this agreement–that the velvets and the brocades manufactured under the Safawids, especially during the reign of Shah `Abbas, constituted the most glorious fabrics ever produced in any part of the world.

Under the Safawids the Iranian artists also developed the art of embroidering and printing cottons. Many specimens of block–printed cotton hangings known technically as galamkar have come down to us and it appears that they were made most probably in Isfahan, Hamadan, and Yazd.

(**d**) **Turkish Textiles and Embroideries**.–The fabrics of the Ottoman period consisted mainly of finely made brocades and velvets, but it may be observed that the decoration of these fabrics is far less skillful and varied than of those manufactured by the Iranian or Egyptian artists. The Turkish artists almost invariably confined themselves to floral and geometrical patterns. However, Turkish textiles are important in the sense that the artists of Venice imitated the Turkish craftsmen and, slowly but steadily, this art spread to Europe via Italy.

Turkish artists were very fond of embroidering handkerchiefs and towels, and it is obvious that they were used merely for decoration or ceremonial purposes. Most of them belong to the twelfth/eighteenth and thirteenth/ nineteenth centuries.

(**e**) **Indian Textiles**.–The Indian artists of antiquity were justly celebrated for manufacturing cotton muslin so fine as to be considered miraculous.

When the weaver's art came into its own under the Moghuls, both Iranian and Hindu motifs became clearly discernible in fabrics manufactured in India. During the period of Shah Jahan very fine velvet was produced. The decoration consisted primarily of floral scrolls.

Silk brocades were the specialty of the Indian artists under the Moghuls. We know on undisputable authority of Abu al–Fall and others that Lahore, Aurangabad, Benares, and Ahmedabad were great weaving centers. Silk brocades were very skillfully designed with vivid colors and abundant use of gold. The elegant saris and head–dresses and sashes (shash) manufactured during the Moghul period have been justifiably claimed to be specimens of the finest weaving in the world: some of them are to this day

preserved in museums.

Europe knows Indian textiles most probably through Kashmir shawls, some of them embroidered and others woven.

The art of block-printing and resist-dyeing reached its zenith under the Moghuls. Specimens of printed cotton known to Europe as palampores and pintados were beautifully designed and executed with great skill and ingenuity.

(f) Rugs-Although fragments of rugs have been excavated at Fustat in Egypt which would show that rug-making was very well known to the Egyptian artists, yet there is no doubt that it was only with the advent of the Saljugs that fine rugs were manufactured for the first time. Marco Polo, who passed through Asia Minor in 669/1270, informs us that the most elegant rugs in the world were made by Greek and Armenian artists under royal patronage. It is surprising, indeed, that the Saljugs Turks, barbarian by origin, were responsible for reviving many major and minor arts throughout their territorial possessions. The Saljug rugs have simple decorative patterns-interlacing arabesque, geometrical figures, and medallions.

As is the case with textiles, very few rugs of the Timurid and Mongol periods have come down to us, but if we closely observe the rugs as represented in miniature paintings and as described by poets, we have to concede that the art of rug-making had achieved considerable maturity under the Timirids. As a matter of fact, spring with all its beauty, colors, and abundance of flowers and foliage is described by the poets as inferior to the decorated rugs found in royal palaces.

The finest Iranian rugs were manufactured admittedly under the Safawids. Tabriz was the center of Iranian arts and crafts and it was here that the weavers of Kashan, Hamadan and Herat would learn the craft of rug making and go back to their homes to spread this artistic activity throughout the possessions of the Safawids.

The most celebrated types of rugs manufactured under the Safawids may be grouped as follows: (i) medallion and animal rugs with arabesque and floral designs, (ii) woolen rugs with animal figures drawn, with the greatest skill, realistically and not in stilted conventional manner, (iii) silk rugs, (iv) rugs with floral designs, and (v) vase rugs.

Under the Moghuls rug-making or carpet-making in India became very favorite with kings and princes and Abu al-Fadl, eulogizing Akbar, writes that “all kinds of carpet weavers have settled here and drive a flourishing trade. These are found in every town, especially in Agra, Fatehpur, and Lahore.”

Some of the Moghul rugs have been preserved, particularly those in the collection of the Maharajah of Jaipur. Dimand is of opinion that “in technical perfection the Indian weavers of the time of Shah Jehan often surpassed their Iranian Masters.”

Turkish rugs are mainly of two kinds, (a) manufactured by royal factories with all facilities attendant thereupon, (b) made by ordinary villagers and peasants who occasionally grouped themselves with industrial ends in view. The design of the Turkish rug is mainly geometrical and this characteristic can be traced even in the peasants' productions right from the tenth/sixteenth to the thirteenth/nineteenth century.

Some time back a series of beautifully designed rugs of different sizes with floral patterns was wrongly attributed to the skill of Damascus craftsmen, but recent research has established beyond any shadow of doubt that these rugs are the products of Turkish looms; many technical specimens of these are to be found in the Metropolitan Museum. Rugs bearing floral patterns and designs may safely be assigned to Court manufactories, especially those established by Sulaiman (906–974/1500–1566) in Constantinople or Brusa (Asia Minor). Obviously, the rugs made by the peasants are comparatively coarse and their patterns and designs clearly show that the sensibility of the designers was not fully developed.

There is no doubt that these Turkish rugs, whether manufactured by artists attached to the Court or by peasants, are, on the whole, inferior to the Persian rugs of the Safawid period which were brilliantly conceived and superbly executed as works of art.

5. Wood-carving, and Ivory and Bone-carving

(**a**) **Wood-carving**.–There is no doubt that the Muslim artists during the early centuries of Islam developed the art of wood-carving under Hellenistic and Sassanian influence.

The most celebrated specimen of wood-carving produced during the early 'Abbasid regime is the prayer pulpit in the mosque of Qairawan situated in North Africa which, it would appear, was brought from Baghdad during the third/ninth century along with some lustered tiles by some notables of the Aghlabid dynasty. This pulpit contains panels decorated with geometrical patterns and designs. It is regarded as a masterpiece of wood-carving of the Baghdad School and was most probably executed under the patronage of Harun, the `Abbasid Caliph. The abstract art of modern times would benefit to a great extent if its exponents study carefully the fine patterns and designs executed during the early 'Abbasid period.

Gradually, the `Abbasid artists developed a style of their own and freed themselves from the fetters imposed upon them by the Sassanian and Hellenistic conventions. The 'Abbasid style of decoration was imitated by the Egyptian artists under the Tulunids (324–359/935–969) and it became very popular in all parts of Egypt, especially in Cairo.

The craftsmen of Egypt, however, gradually improved upon the `Abbasid technique and evolved out a style of their own in the fourth/tenth century. The motifs “were more deeply undercut and there was a tendency towards roundness.”

It is extremely difficult to estimate the part played by the ancient crafts and arts of Egypt in the

development of wood-carving by the Egyptian artists. After all Egypt had inherited artistic traditions of great significance and value and it would perhaps be safe to assert that the artists must have benefited from the heritage of ancient Egypt.

With the passage of time geometrical patterns gave way to other types of decoration, namely, the carving of animal figures and arabesque scrolls; the devotion to detail in these works is amazing and is indicative both of the skill of the artist and of his painstaking labor.

Some of the panels of wood made during the Fatimid regime are magnificently carved and depict typically Egyptian scenes; the figures of birds or animals are emphasized and this is but natural because the ancient Egyptians worshipped certain birds and animals as gods and goddesses.

During the Ayyubid period the Fatimid tradition continued to influence wood-carving with the difference that arabesque scrolls became more delicate, fine, and complicated, and nasj h replaced Kiific inscriptions. With the passage of time the devotion to detail which has already been noticed was emphasized still further. It was in this period that various valuable types of wood including ebony came into use.

The art of carving in Egypt declined in the ninth/fifteenth century.

The wood-carver's art in Iran showed signs of considerable maturity even during the regime of Mahmnd of Ghaznah; a door from his tomb has been preserved, ironically enough, in the Museum at Agra. This door reveals that the Iranian artists evolved a style of their own and arranged the deep undercutting of the ornament in several planes. This characteristic feature is undoubtedly of Iranian origin.

Wood-carvings of the Saljug period have, unfortunately, not come down to us in sufficient quantity to enable us to evaluate their artistic worth but it may be safely asserted that the artists of Asia Minor during the sixth/twelfth and seventh/thirteenth centuries produced works of very high quality the decoration of which compared favorably with that of the Egyptian and the Syrian artists.

Wood-carvings pertaining to the early Mongol period are also very rare but there is no doubt that in the second half of the eighth/fourteenth century the Iranian artists, especially in Western Turkestan, achieved a technical perfection which leaves nothing to be desired.

The art flourished for some time under the Safawids but in the eleventh/ seventeenth and the twelfth/eighteenth centuries signs of decline were noticeable: during this period the panels were painted and lacquered, not carved.

(**b**) **Ivory and Bone-carving**.-Ivory and bone-carving of the early Islamic period has been found at various places in Egypt, especially in old Cairo, and shows that Coptic traditions influenced the work of the earlier artists to a large extent. Artists flourished under the Fatimid, Ayyubid, and Mamliik dynasties. Decoration during this period was very elaborate and finely executed.

Sicilian ivory-work has also been preserved in certain museums and it reveals a fusion of the Eastern and Western styles. The decorative motifs are mainly arabesque, human figures, animals, birds on the wings and perched on the branches of trees with dark somber and sober outlines and occasional flashes of vivid red, bright violet, blue, and dazzling gold.

6. Metal-work, Glass and Crystal

(**a**) **Metal-work**.-The Sassanian tradition in Iran was so strong that the earlier products of Muslims, particularly silver and gold vessels, have been attributed mistakenly to the artists of the Sassanian era. However, it is easy enough to distinguish earlier Islamic metal-work from the Sassanian because vessels which are decorated with Kiiflic inscriptions, birds, interlaced arabesque, and medallions are definitely of Islamic origin. It has been conjectured and there seems to be merit in this conjecture-that the earliest products of the art of metal-work pertain to the period of the Samanids who were responsible for heralding the Persian renaissance in letters, learning, and Fine Arts.

Early Islamic vessels consist mostly of trays and ewers fashioned in the shape of animals and birds.

With the advent of the Saljuq Turks in 429/1037 Muslim metal-work came into its own. The bronze, gold, and silver utensils which have been preserved in different museums reveal patterns and decorations which are extremely original and seem to have been developed by the artists of the Saljuq period. Enamel-work was also known, although it was not of very high quality. Gold jewelry of a considerably high standard consisting mainly of ear-rings and pendants, fashioned again in the shape of animals and birds, has come down to us. During this period both Iran and Mesopotamia became centers of the art of casting bronze objects with relief decorations-mirrors, plaques, and animal figures. Two mirrors which have come down to us (preserved in the Harari Collection in Cairo) reveal that the artists devoted great care in the execution of their work and paid painstaking attention to details.

Metal-work during the Fatimid period consists mainly of jewelry and is relatively very rare. Some specimens are to be found in the Harari Collection mentioned above.

It is interesting to note that some of the metal-work under the Ayyubid Sultans is decorated with Christian motifs.

Although artists in metal-work continued to flourish during the Mongol period and after, signs of qualitative decline were apparent.

Under the Safawids, however, the metal-workers achieved great distinction in moulding iron and steel and produced works of art which are technically perfect and in no way inferior to the earlier masterpieces. Unfortunately, very few specimens of Safawid metal-works have survived, but in the tenth/sixteenthcentury miniature paintings we can observe the elegance and charm of some of the metal-works represented therein.

The artists of other Muslim countries did not achieve any great distinction in this art as compared with the Iranian artists.

(**b**) **Glass and Crystal**.–During the Roman period the artists of the Near East, particularly Syria and Egypt, were justly celebrated for their skillfully executed glass–ware. The Muslim artists learnt the various techniques of decorating glass from the local artists.

Excavations made at Susa, Rayy, and Sava have given to us specimens of glass–work which prove that the Iranian artists continued to walk in the footsteps of their Sassanian masters and even copied the Sassanian forms and decorative features.

The glass–work of the earlier Islamic period consists mainly of bottles, flasks, cups, and receptacles for oil and perfume. The earlier works were undecorated but with the passage of time the artists learnt the art of decoration and produced works which were exquisitely beautiful. Especially charming were the small thick prismatic perfume bottles.

Under the Fatimids the glass industry reached its zenith. Excavations at Fustat and Alexandria have revealed that the artists had achieved great skill in this art and developed technical perfection. The greatest distinction achieved by the artists of the Fatimid period was the decoration of glass with luster–painting and enamel. It is unfortunate indeed that this type of work has come down to us only in fragments.

Some pieces, incomplete as they are, in the Arab Museum in Cairo, the British Museum, and the Berlin Museum, each decorated with beautiful scroll work and abstract geometrical patterns of Kafic inscriptions, sometimes painted in brown luster and sometimes in silver, reveal great skill.

The cut decoration was also perfected by the Fatimid artists.

There were signs of deterioration of this art under the Mongols and the Tienfirids and it was under Shah Abbas the Great (996–1039/1587–1629) that glass–making again reached technical perfection most probably due to the impact of the West, especially the influence of the Italian art. It would appear that Shiraz and Isfahan were the greatest centers of the glass–maker's art.

After the Safawids, industrialized Europe gave the quietus to this branch of artistic activity in the East.

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2. z Ibid.

Part 3: Social Studies

Chapter 60: Historiography

The debt that history owes to the efforts of Muslim writers is generally recognized by Orientalists, but the consciousness of the value and significance of the Muslim contribution is rare among Western historians. Every known sizable collection of Islamic manuscripts includes a good proportion of historical works[1] which in itself is a fair indication of the importance attached by Muslim scholarship to history. A comparison between the outputs of historical literature by the Muslims before decay set in and the Islamic civilization began to decline and the histories written during or before that period by other peoples will show what great interest was taken by the followers of Islam in history. A similar comparison in the standards achieved will be equally illuminating. It would be no exaggeration to say that in the Middle Ages, history was very much a Muslim science. Their contribution is even more remarkable in view of the fact that the Muslims had inherited very meagre traditions on which they raised so glorious

an edifice.

For several decades the Orientalists were not impressed with the Muslim traditions regarding the magnitude of ignorance in pre-Islamic Arabia. They saw in them an endeavor to exaggerate the achievement of Islam by belittling pre-Islamic Arab effort; even the silence of Muslim writers was suspect. Partly for this reason and partly with the desire to belittle the success of Islam in uplifting the Arabs, the Orientalists made strenuous efforts to find proofs of pre-Muslim attainments, but they did not discover much. In the words of a recent authority, "the cultural and economic level of the nomad population was, as it has always been, too low to support any literary effort.2 The Arabs did produce some poetry, a fact mentioned and recognized by Muslim authorities, but they had little conception of other branches of literature. They do not seem even to have a word for history. Some of the earlier writers have used the term akhbdr for history; the singular form, khabar, is used even today for a report or information.

This has been the meaning of the word in Muslim times; the earlier meaning of this word is obscure. As the name implies, akhbdr is generally understood to mean a string, a collection, or, at best, a connected sequence of reports, and only in the last form does it achieve the form of a historical narration of events. The origin of the word tdrikh, which is now generally used for history, is even more difficult to trace. Its root form perhaps came to be used in the Yaman in the preIslamic days, but, in all probability, it referred to time, not to history.33 This significance of the word has not yet been lost; indeed, the word tdrikh is used more often in the meaning of a date than of history.

It is obvious that without even a proper word for it, the Arabs could have little conception of history before the advent of Islam. They had a few stories of what they had considered to have been important or interesting events and vague, probably untrue, legends of the peoples who had inhabited the old ruins that were scattered in some parts of the peninsula. They lacked even a proper epic; indeed, they were a people with no consciousness of history. The Muslims, therefore, could not have drawn any inspiration for the development of a tradition of historiography from the pre-Islamic Arabs.

The Greek sciences made a most significant contribution to Islamic culture, but in the field of history, the Greek influence is difficult to trace. No classical Greek history ever reached the Arabs; the Greek and the Latin annalistic literature has been lost and is not available even to the modem scholar.4 History, however, was a much less important sector of Greek and Latin scholar ship; it was not considered of sufficient merit to be included in the curriculum of regular studies. The Muslims adopted the branches of learning that were considered to possess sufficient importance in the eyes of the Greeks themselves; the Greek tradition was kept alive in these subjects. One of the reasons for the loss of classical Greek historical literature may be the fact that the Arabs showed no interest in its preservation.

The Byzantines had traditions of historiography and it is not beyond the range of possibility that some of their works came into the hands of the Arabs through Syrian Christians and converts to Islam. They might have contributed some techniques, but these techniques could not have been important.5 In any

case, the Arabs could not have derived their historical sense from the Byzantines.

The other two great civilizations with which the Arabs came into close contact were those of the Iranians and the Hindus. The Hindus never developed an interest in history. There is little indication of the Iranians possessing any notable historical literature at the time of the Muslim conquest.[6]

It is, therefore, more likely that the Arabs developed a sense of history as a result of the Prophet Muhammad's mission. Indeed, all indications point in this direction; hence they need exploration. It should be remembered that Islam itself claims to work in the context of history. It fulfils the previous missions of the prophets who had come before Muhammad.[7] It seeks to abrogate the excrescences that came to disfigure truth in the course of time, because the generations that had gone before had failed to preserve the earlier revelations.[8] Prophets had come in various societies at different times and had preached the same essential truth, but there had grown up errors and misunderstandings, some deliberate and perverse and others as the result of folly, and divine revelation had become clouded. Now this basic belief shows a consciousness of history. It is concerned with the past, the present, and even the future.

The future comes in because Muhammad being the last of the prophets[9] and the bearer of a message of transcendent importance, his mission will remain effective throughout the future. This conception of religion is not concerned with the present only. It does not look upon the present as merely transient, nor upon the past as the sum total of merely so many transient and insignificant presents. This is borne out by the fact that the Qur'an draws attention repeatedly to the misdeeds of previous peoples and their destruction as the result of these misdoings.[10] The warning is implicit in the narrative itself, but it is also given explicitly on many occasions. If the past produced all those disastrous results, or if, conversely, virtuous deeds in the past were fruitful in producing good results, there is a relationship between the past, the present, and the future which is significant in fashioning human life. History, in this manner, achieves great importance in understanding life.

There is another aspect of Islam that has an important bearing upon history. Muhammad has 4 unique place in history. According to the Muslim belief, Muhammad stands, as if it were, on the watershed of time. The progress that had been vouchsafed to humanity before him was to find fulfilment in his mission. The previous messages were limited to particular peoples and their environments and conditions. They had the special circumstances of these people in view; hence they had contained, in addition to an emphasis upon the universal nature of the absolute values, certain teachings that were valid only in the circumstances in which they were revealed.

The succession of the previous prophets had worked for the completion of religious belief, for a perfection in the unveiling of the great truths, and for giving humanity the essence of religious truth, untrammeled by the need to circumscribe it by a consideration of the transient environment. Muhammad, thus, represents the culmination of one divine plan and the beginning of another. The first plan was designed to meet the differing needs of various segments of the human race, the second plan for the

entire humanity. The very pattern of religious progress changes after Muhammad, because now there is a universal message to follow, the essence indeed of all that has gone before.

With this belief about the position of the Prophet in time, it was natural that the Muslims should cultivate the historic sense. Christianity also believes in a divine plan of history; indeed, the Church, encouraged by the power and expansion of the Christian nations, came to believe strongly that it was the will of God that Christianity should prosper in the world and in this manner the Kingdom of God should be ultimately established on earth. Only recently with the growth of communist States has this belief somewhat weakened. However, even when the Church held a strong conviction regarding the ultimate triumph of Christianity and looked upon history as the gradual revelation of the divine plan, its conception of the importance of the unfolding of the historical processes was not the same as that of the Muslims.

According to the Christian dogma, Christ is the man–god; he did come at a particular time in history, but that time has no special significance because, as God, Christ is eternal, timeless, and infinite. Only for the time that he was in this world, did he put upon himself the limitations of a finite human existence. He came to redeem the world and he did it by paying for it with his own life. In a sense this redemption is the culmination of religious evolution. It was for this reason that the earlier Christians saw in every disaster the approach of the end of the world. Having been redeemed, the world had achieved the goal; there was nothing beyond it. The further unfolding of history was irrelevant.

The Muslim position was basically different. The Qur'an enjoined that there should be a body among the Muslims dedicated to the task of preaching the truth[11]; indeed, the Muslims themselves were to form a nation to invite others to accept the truth and to set an example for the world.[12] Muhammad was the last of the prophets, but his mission was to be carried on by the learned among his people. It was for this reason that he had said that these learned people were to be like the prophets of Israel; in other words, what had hitherto been achieved through a succession of prophets was to be accomplished through the agency of learned men.

This sharp contrast between the destiny of Islam and the earlier religions was bound to set people thinking about the elements responsible for this change in the divine plan. How had the world changed to need a new dispensation so radically different, in its purpose from what had gone before? This question was even more pertinent since it was not the nature of the truth that had changed; for did not Islam claim to be all revealed truth, whether it had come before Muhammad or through him? And what was the truth that had come before? How far did it conform to the message of the Qur'an?

How much of the truth claimed by the previous religions was interpolation, and how much of it incidental to the circumstances of those days and the peoples who; had been its recipients? These were the questions that arose naturally, and all of them are either directly historical or have historical overtones. They were rooted not only in natural curiosity, but, as we shall see later, also in theology itself.

In its exhortations for belief and righteousness, the Qur'an does not depend entirely upon appeal to

emotions. It argues and appeals to reason at innumerable places. Phenomena of nature, legends contained in older Scriptures, the impact of ruined cities and buildings upon the imagination of a sensitive people, and historical events are all pressed into service. Indeed, there are considerable historical data in the Qur'an.[13] The inclusion of these allusions in large numbers led the critics of the Prophet to question the relevance of human experience in the past. They dismissed them as being merely the records of peoples who had gone before.[14] The unbelievers implied that what had happened in the past was of little importance to them. They certainly did not believe that history had any lessons for them.

The Qur'an, on the other hand, considers the experience of the past generations and of other peoples to be of vital importance. The underlying argument is that similar actions and circumstances produce similar results. The Qur'an thus lays down one of the first principles that guided the Muslims in their study of history. They wanted to learn from the experience of others. Besides, human activity is not an isolated phenomenon; it is linked with the past as much as with the future. Being implicit in the very conception of Muhammad as one of the prophets and the last of them, it found confirmation in the insistence of the Qur'an on the importance of historical phenomena in the determination of right and wrong.

If any human action has brought disaster, that action could not be right except as the vindication of the principle of righteousness itself. And in judging the results of human activity, the Qur'an does not take into consideration the individual. It is the sum total of communal activity which cannot be right if it produces disasters.[15]

A good man working for the common good in a bad community may suffer, but he has his other rewards. A bad man in a good community may not suffer, but he has his other punishments. This is the reason why prophets and martyrs seemingly failed in bad communities which hurled themselves into disasters; from a purely worldly point of view they even suffered grievously, but actually they were saved and the evil–doers really suffered. And in the stories of the bad communities and the suffering prophets, there is another implication. The good that the prophets had sought to achieve might not have been established in their own times or communities but it ultimately did prevail, and this shows a continuity of the historical process in which righteousness ultimately wins.

Apart from their moral and philosophical implications, which helped in creating a historical sense in the Muslims, the historical allusions in the Qur'an presented a challenge to the Muslim mind. The Muslims wanted to learn more about them, and thus began a search for more detailed information. It is true that with their limited resources and the condition of human knowledge in their days, the information collected by the early Muslims was not always accurate. Considerable legendary material, folklore, and mythology entered into their understanding of the historical facts mentioned in the Qur’an. A fertile source of legendary material was the Jewish tradition. The net gain was that historical curiosity had been aroused. Some of the earlier mistakes were never corrected, but others were discarded when critical faculties got

sharpened by greater experience and knowledge.[16]

There was yet another aspect of religion that directly led to the cultivation of history. Muhammad is a historical figure; he lived in the limelight of history. His biography has always been considered to be a cornerstone of Muslim theology[17] and, therefore, the events of his life were eagerly sought and collected. So long as his immediate disciples and Companions were alive, this was a simple matter, but as time elapsed, it was considered increasingly necessary to collect all information about him. Where the believers could not find clear guidance from the Qur'an, or where there was dispute in the interpretation of its text, the best authority could be the Prophet's actions and sayings.

Thus, there grew up the tradition of collecting the ahadith, and after some time when the original narrators had died and there had intervened several generations so that for every hadith there were several narrators in succession, it was necessary to submit the reports to searching criticism. The scholars developed canons of criticism that have not only endured but have earned the respect of the succeeding generations for their soundness[18]

Modern scholarship can find fault with some of the traditions that have been judged to be sound, but the canons of criticism and of testing the validity of reports are trustworthy even today. This was no mean achievement and shows not only a keen sense of responsibility but also a high perception of the criteria which should be applied to any narration. After all this is the kernel of all methods of historical research.

A by-product of this search was the compilation of working biographies of all the better known narrators. In this process those considered unreliable were branded as such. The biographers made the most careful and impartial scrutiny, and if they found any trace of deceit or even a charge of lying in any respect, they exposed the narrator so that the traditions, in the chain of the narrators in which he appeared, might at least be treated with extreme caution. As it was a theological and religious matter and concerned the beliefs of all Muslims, the critics developed the highest sense of intellectual honesty. Despite these efforts and precautions, some unreliable traditions have found their way into the “authentic collections,” but when it is remembered that the collectors discarded many more traditions than were considered sufficiently sound to be accepted, it would be clear how well the criteria were applied.

A remarkable testimony to the historical sense of the Muslims is their success in preserving the text of the Qur'an. It really arose from two of the teachings of the Book itself. The first of these is the doctrine of the corruption of the previous Scriptures through changes or interpolations. The other is the promise that the Qur'an shall be preserved.[19] According to the Muslim belief, the corruption of the previous Scriptures resulted in the misguidance of the people to the extent that the shape of the original faith was changed beyond recognition. The Muslims had been given the Qur'an, which they were to cherish and preserve in the original form. They believe in the verbal sanctity of the Qur'an. This led them to preserve the text. Taking into consideration the differences in languages in the Muslim world and the rise of various sects in Islam, this is quite an achievement. The preservation of the text of the Qur'an could not but have engendered a respect for the texts of documents of any importance.

It would be seen from this discussion that historiography in the Muslim world had religious beginnings. It was religion that gave the Muslims their historical sense, and the requirements of developing a theology made it imperative for the Muslim theologians to undertake historical research and to lay down canons of evaluating historical data for eliminating doubt and error so far as it was humanly possible. It led them to explore the traditions of religions allied to their own which had preceded the mission of the Prophet in point of time. Indeed, historical studies started in Islam as a necessary adjunct of theological development[20]. It was necessary, therefore, for the Muslims to cultivate a religious attitude towards history, which could not be discarded easily. Indeed, even when history ventured out into the courts of worldly monarchs, it was not able to overcome some of the conceptions developed in the cloisters of the mosques and the colleges of theology.

The theologians looked upon their work as an act of worship; hence it was to be approached with the utmost sincerity. In such work all merit was lost if any selfish motives were permitted to interfere with its objectivity. The scholar considered himself to be accountable to God for every fact that he reported or any opinion that he expressed.[21] Indeed in the beginning he was doubtful whether he was justified in expressing an adverse opinion about anyone.[22] However, he was strengthened by the Prophet's example of not hesitating from censuring a person in the public interest, or from expressing an opinion that would save others from trouble and hardship.[23]

In the reporting of facts and the expression of opinions, therefore, the writer felt himself bound by the ethics of a witness or a judge. He would not report anything about which he was not certain; he would weigh all the evidence at his disposal and try to adjudicate fairly upon the merits of the report and the character of the narrator. He would not be a party to the perpetuation of a false report. In reporting a tradition of the Prophet he was conscious of the Muslim belief that the Prophet had strongly forbidden his followers to ascribe a saying or a tradition to him falsely. Therefore, he wanted to avoid at all costs any participation in such an act. The secular historians unhesitatingly imbibed these ideas and adopted the same attitude in their fields.[24]

This attitude created high standards of objectivity. Indeed, quite often objectivity was carried to ridiculous extremes. Not a few books written by Muslim authors are dry and jejune chronicles of events without any comments or value-judgments. The authors felt that it was their duty to narrate the events and that it was the business of the reader to arrive at his own conclusions. They did not believe that the historian's function was to narrate the facts as well as to interpret them. Such an attitude was crippling for a proper development of history as a social science. There was, however, a brighter side to this objectivity, a scrupulous regard for the truth. Even when history was written with a political objective in view, the facts were not mutilated.

The best examples are furnished by two Muslim historians of the Indo-Pakistan sub-continent. Abu al-Fadl wrote the Akbarnameh with the blatantly clear object of extolling his patron, Akbar.[25] Mulla 'Abd al-Qadir Badayuni, on the other hand, wrote his Muntakhab al-Tawarikh, it seems, to prove to the world

that Akbar had strayed away from the right path. Shorn of the propaganda against Akbar, Badayiini's book is merely an avowed redaction of Nizam al-Din Ahmad's Tabagati Akbari. Badaynni has added information about Akbar's lapses from his personal observation and also from hearsay.

The general effect is pretty damning from the orthodox Muslim point of view. On closer analysis, however, it appears that Badayuni has suggested more than his words really convey, and, being a master of studied ambiguity and innuendo, he is able to create impressions without taking responsibility for some of the events that he reports. Wherever he is reporting an incident or a fact that is obviously not correct, he prefaces it by a vague remark like “It is reported that....” Sometimes he writes sentences that can be translated in more than one way.[26] Such ambiguity, however, occurs only where the author deliberately seeks to suggest what he does not want to say. This was not done for any fear of the monarch, because Badayuni's book was kept secret during Akbar's reign.[27]

It was Badayuni's regard for the verbal and the literal truth that led him into these devious paths. He was perhaps not bothered about the general effect because he was probably convinced, as were several other men of high repute, of Akbar's heterodoxy. Badayuni left the path of historical rectitude only in heightening an effect that he considered to be true. Abu al-Fadl, who approached his task with an entirely different purpose, is hard put to it where he finds it difficult to justify or explain away some measure or action of the monarch. He adopts the method not of ignoring it, but of making a veiled reference to it that a discerning reader can well understand. Abu al-Fadl, his general panegyrics apart, shows a high regard for truth in reporting events. He was probably also convinced of the truth of the general theme of his work, namely, that Akbar was a monarch of unusual ability and that he was inclined to show remarkable benevolence towards his subjects.

Whatever axes the two authors had to grind are, however, quite apparent to the reader, but he cannot help being impressed by the pathetic regard for truth that is so apparent in these works and that is so difficult to maintain because of the patently partial approaches of the authors. These are perhaps extreme examples, but they are by no means unique in the history of Muslim historiography. Nizam al-Din Ahmad, whose work has been mentioned above, provides a good example of the extreme objectivity observed by some Muslim historians, because, living in the midst of such acute controversy regarding the monarch's religious policies and attitudes and himself being orthodox in his own religious beliefs, he does not even as much as mention the topic. He could not have considered it unimportant, being an observer of good sensitivity, but he left it out because he did not want to pass value-judgments on matters which he disliked.

The Muslim monarchs were extremely sensitive regarding the verdict of the posterity on their deeds. They had the common human weakness of being desirous of leaving a good name behind them. Historians were, therefore, courted and patronized. A number of histories have been written by men who in varying degrees can be called “Court historians.” In some European circles their works are treated with suspicion, which is not justified in all cases. We have seen how men of probity have not twisted

facts even when they seemed to mar their own thesis; at worst, they may have been guilty in some instances of the suppression of some unpalatable truth or the suggestion of virtues that did not exist. They could not have invented events.

Their faults can mostly be remedied easily–any hyperbolic praise of a patron is understood to be merely a matter of form; the pure and unabashed panegyric can be easily dismissed as being out of context.[28]

When a weakling is called a world–conquering hero by a writer, it is understood that the epithet is only an expression of courtesy conveying nothing, but a Muslim historian does not invent imaginary victories to adorn sober history. If a historian misses some event, he knows that others are likely to mention it and that he will be held guilty by posterity; therefore, there are few instances of deliberate misrepresentation by Muslim historians, and these have often been corrected by subsequent writers or even their own contemporaries.

The historians who had access to monarchs and their ministers were well informed and to that extent are more reliable. In an age when the printing press had not made the daily newspaper possible and governments were not publicity–conscious in the modern sense of the term, the isolated scholar was hard put to it to collect the necessary data for an informative book relating the events of a reign. One has only to compare the bazaar gossip related by European travelers to India with the sober histories of the period to see how distorted the reports of events did become once they had left the precincts of the Court and the circles of persons in contact with the high officials.

A Court historian was in no less desperate a position than a historian of today who is overwhelmed by the information material issuing from the publicity departments of modern governments, especially when his own emotions are also deeply involved, e.g., in a crisis in which his own nation is concerned. The Court historian had his own reputation at stake because he intended to write for posterity. The professional code established by historians could not be transgressed with impunity.

However, not all historians who were otherwise attached to a Court can be called Court historians. There have existed men of the highest probity who were attached to Courts and wrote historical works, but they cannot be termed Court historians. Amir Khusrau enjoyed the patronage of several monarchs but he was not employed as a historian. Badayuni, while attached to Akbar's Court, wrote against him. Nizam al–Din Ahmad held a high office in the government, but the recording of history was not one of his duties. It is doubtful whether even abu al–Fadl can be called a Court historian in spite of his great partiality for Akbar, because his official assignments were of an administrative or military nature.

The famous Abmad bin Yabya al–Baladhuri was a nadim of the Caliph al–Mutawakkil; 'Ata bin Muhammad al–Juwaini was a wazir; other government officials who were also historians of some eminence include Muhammad Yabya al–Siili, Sinan bin habit, Abu 'Ali Abmad bin Muhammad Miskawaih, and Salah al–Din Khalil bin Aibak al–Safadi, to name only a few. The great ibn Khaldun was a Qadi, but this was not considered so much of a government office as a religious obligation to be

discharged by those qualified for it if they were called upon by the monarch to assume the responsibility.

There were some princes and rulers who took an interest in history and wrote works of considerable merit. An outstanding example is Isma'il bin 'Ali Abu al–Fide' who, in the midst of the busy life of a statesman and soldier, found time to write authoritative history. The 'Abbasid prince Abu Hashim Yosuf bin Muhammad al–Zahir wrote a history of the reign of his brother, al–Mustansir bi–Allah. Some of the rulers of the Yaman, like Jaiyas bin Najah (d. 501/1107), al–Afdal al–'Abbas bin 'Ali (d. 779/1377), and al––Ashraf Isma'il bin 'Abbas (d. 805/1402) were responsible for historical works.[29] None of these can be called Court historians, nor are their works prejudiced because of their high offices.

Diaries and memoirs are a fruitful source for historical studies. Indeed, some memoirs are our mainstay so far as the historical information regarding some areas at certain times is concerned. In this category come the memoirs of Zahir al–Din Muhammad Babur, whose stormy life presents not only one of the most exciting studies in history, but also gives us an insight into the political conditions of Central Asia after Timur's Empire had collapsed. He is rightly known as the prince of all diarists because of his frank narration of events, in which he also discloses his own humane personality, telling us in a most charming manner his weaknesses and recording his triumphs without any bragging. He hides neither his elation at success, nor sorrow at his defeat.

This chiaroscuro of victory and defeat, of weakness and strength, of lapses and piety, and of ambition and frustration reveals a sensitive and lovable personality possessed of artistic sensibilities, all of which makes the Tuzuk extremely readable in addition to being informative. To take another example, his great grandson, Nur al–Din Muhammad Jahangir, also wrote his memoirs. Jahangir had known no adversity; his tale could not be so thrilling as that of Babur;' besides, he wrote not as an ambitious adventurer, albeit crowned and of imperial descent, as Babur did, but as an established ruler of a great empire. And yet, Jahangir's memoirs do not show any lack of sensitivity. He is as keen an observer of human character as his illustrious ancestor was, as artistic in his own manner, being one of the greatest patrons of art, and an excellent critic and connoisseur. In spite of the inherent pomposity in the writing of an emperor who knows that his book will be read by his subjects even in his own lifetime, the book does not lack obvious sincerity.

These examples can be multiplied from other periods and other lands in the context of Muslim historiography. The main point is that the suspicion in which certain Western writers uncritically hold any writer associated with a Court is not justified. Those who transgressed the requirements of historical objectivity were forgotten and subsequent scholars and historians did not fail to criticize or even condemn them for their lapses. In the words of Diya' al–Din Barani, “it is necessary that the historian be ... known and famous for his truth and just dealing” and when “he writes of the excellences, the good deeds, the justice and equity of the ruler or of a great man, he must also not conceal his vices and evil deeds. ..; the attention of the truthful, pious, and sincere historian should be directed towards writing the truth. He should be in fear of answering on the Day of Judgment.... In sum, history is a rare and useful

form of knowledge and its writing is a great obligation.[30]

As the writing of history was looked upon as a religious duty, the highest objectivity and impartiality were its criteria in the mind of the Muslim historian. There were black sheep as well and sometimes the desire for gain or the fear of a tyrant overcame the sense of responsibility of the writer, but he generally was relegated to oblivion.

Muslim historiography took several forms. The pre-Islamic Arabs took great pride in their genealogies. Like other primitive peoples, they generally kept verbal records which on some occasions were even publicly recited. Of course this often resulted in bragging and was a fruitful source of tribal warfare and vendetta. The practice of maintaining genealogies was kept up under Islam as well, and many non-Arab families seem to have adopted the habit. It is unlikely that in the pre-Islamic period the Arabs bothered to remember the main events connected with the life of every ancestor. Some famous anecdotes or events might have been associated with some outstanding names, but an idea of a connected family history or biography, however sketchy, of even the better known men in the family tree was unknown. It is even more improbable that any of these genealogies were committed to writing in the pre-Islamic period. The main features of these genealogies were fairly well known even outside the group of those to whom a genealogy belonged and any fraudulent claim was soon countered. In a way this was the early Arab way of remembering their tribal origin, but it had little to do with real history.

When the Muslims took up historiography, genealogies proved helpful in understanding the part played by the Arab tribes in Islamic history. With the growing participation of the non-Arab Muslims in the affairs of the Islamic world the genealogical pattern came to be discarded in the greater part of the Muslim world. The origin of the genealogical works like Zubair bin Bakkar's Nasab-u Quraish was the exaltation of the Quraish; this was feasible because the ruling dynasties of the Umayyads and the `Abbasids were alike Quraish. Baladhuri's Kitab al-Ansab is the classical example of history being dealt with from the angle of genealogy. However, with the inclusion of so many non-Arab peoples in the world of Islam and their rise to power, such treatment became obsolete. It, however, thrived in the Maghrib, especially in Spain, because tribal considerations continued to play an important part in the area and history could be grouped around the activities of some tribes and clans. Private families, particularly some of the 'Alids and Hashimites, were interested in keeping a record of their ancestry.

Family histories have continued to be written up to this day. Most families, however, contented themselves with keeping their genealogies in tabular forms. Shajarahs were quite common in the Muslim world, but they cannot be classified as history. The Arabs, however, were given to tribal fighting which continued for considerable time and had the tendency to be rekindled at the slightest pretext. The memory of a spectacular or significant victory was kept alive. The battle day tradition occupied an important place in the folklore of early Arabia. Those who had distinguished themselves in a battle or had inflicted a humiliating defeat on their adversary continued to brag about it long after. In fact, scholars are inclined to think that this form of narration was common to the earlier Semites as well. It is present in

the older sections of the Bible.[31]

These traditions did not form a continuous narration like an epic; every anecdote stood by itself and spoke of a single event. In the Bible they have been grouped into a continuous narration, but each event can be read separately. It is improbable that any such anecdotes were committed to writing in pre-Islamic Arabia.[32] They were, however, known to the Arab historians of the Muslim period. They did not find their way into the Muslim historical literature before the seventh/thirteenth century, because the earlier historians were doubtful of their historical worth. They were valuable for philological studies, but not as sources of history, because they partook of fiction, being generally one-sided and meant to glorify one side.

Besides, they were not intended to be sober history; indeed, their original purpose was not the preservation of any historical fact, the conception of which was unknown to the pre-Islamic Arabs, but to be sources for entertainment for the listeners when recited. They were, however, significant in one sense: they created a tradition of recording a single event.

The narration of single events and their reporting is capable of independent and impartial treatment, and thus provides us with the raw material of history. These events can be strung together either chronologically or on the basis of a period, a locality, or even a topic. The treatment, however, tends to differ from continuous narration, because every report is a unit in itself. The line is not easy to draw and yet it is not difficult to see where the emphasis upon individual events is, even though they may be connected. This form of historiography came into vogue among the Muslims fairly early and is referred to by the name of akhbar. In its singular form, khabar, the word means a report, an item of news. In the oldest form of Muslim historiography one comes across small pamphlets written to describe a single event, like the pre-Islamic narration of single battles.

The simple narration soon gave place to the description of the event followed by a discussion of the causes which were responsible for its happening. Even though such a description related to only a single event, it came closer to the present method of discussing the genesis of a happening. The single khabar gave place gradually to akhbar, a collection of several or many khabars. Theoretically, this could be quite disconnected, but the events or anecdotes came to have a focal point regarding a place or a subject and in their arrangement showed a consciousness of chronological sequence. Even in this form the method had serious handicaps.

A khabar was a well-rounded narrative, but the continuity of a historical process is difficult to convey in this manner. Any deep interpretation of facts also is ruled out, because the tendency is to look upon life as a series of separate incidents without much anxiety to discover their interaction. Every khabar was told like a vivid short story, hence it tended to sacrifice clarity and factualism for the creation of effect. This was sometimes achieved by the insertion of a few verses to drive a point home or to give it a dramatic quality. Indeed, it was not uncommon for the historian to retreat into the background and let the chief characters speak for themselves, very much like a dramatic dialogue.

In this form the facts were lost in the midst of the emotions of the speakers, who, to ring true, had to be shown saying what, in the opinion of the historian, they would have felt in the circumstances. Being the earliest form of historiography among the Arabs, the khabar was naturally integrated into other forms and was rarely found in its original and pure shape. It occurs in other works as well and can be spotted by its vivid style and the insertion of faked or actual conversations.[33]

Its most developed form was the monograph on some single historical event. A well-known historian in this style was 'Ali bin al-Mada'ini (752-830/1351-1417), known only through quotations from his works in other histories. A list of the books written by him is preserved in al-Fihrist. In the sub-continent of India and Pakistan, perhaps Amir Khusran's Khaza'in al-Futuh furnishes the best example. His Tughluq--namah, though written in verse, which is not usual with Khabar histories, has many of their characteristics.

It would, however, be a mistake to think of all books written on single reigns as falling into the category of the khabar literature. Its beginnings were, as has been mentioned, religious because it developed out of the desire to collect all the information about the life of the Prophet. The biographies of the narrators of hadith were a by-product. The biographies of religious and political persons followed naturally. Some biographies were written for sectarian purposes, for instance, the earlier works on the descendants and sons of the Caliph 'Ali; several biographies of Husain, Zaid bin 'Ali, and others fall in this category. Sometimes biographies were written at the request of a noble or a monarch.

Thabit bin Qurrah wrote a biography of al-Mu'tadid, which was completed by his son Sinan; this was supervised by the patron himself. Shams-i Siraj 'Afif's Tarikh-i Firuzshahi is a typical biography of a monarch; the Sirat-i Firuzshahi partakes of memoirs because it was supervised by the monarch. Sometimes the biography of a patron was also a record of the author's own times and it is not always easy to draw the line between biography and memoirs. An excellent example is the Nawadir al-Sultaniyyah w-al-Mahasin al- Yusufiyyah, being the biography of Sultan Salak al-Din by ibn Shaddad. It achieves a high standard in depicting the character of the great monarch. Abu al-Fadl's Akbarnameh can be looked upon as a highly successful biography of a remarkable man in spite of the author's obvious endeavor to paint the monarch in as favorable a light as possible.

The success of the book lies in a faithful record of the events of the reign, which find confirmation in other authorities as well. The character of the monarch stands out clearly and in spite of the profusion of the adjectives in praise of Akbar, the panegyrics can be separated quite easily from what is the sub-stance of the narration, because these are introduced as much to deliver formal homilies of praise as to show off the capacity of the author as a master of ornate style. They are not spun into the texture of the narrative in a manner to confuse the reader.

A biography sometimes includes accounts of some of the ancestors of the subject, but their lives occupy a minor place in the book and are introduced more often to trace the exalted line of descent of the main character. Sometimes, however, the biography is extended to include others. In this category would fall

the histories of dynasties or families. There are good examples of dynastic histories; the Tarikh al-f~hazdni by Fadl Allah Raid al-Din (d. 718/1318) being a history of Chingiz Khan and his family[34] may be cited as one.

Another form of the collected biographies was the tadhkirah. Some of the tadhkirahs dealt with poets, others with Sufis, yet others with scholars, but they all had the common characteristic of being collections of short biographies of a number of persons. As a matter of fact, like other forms of biography, they differed considerably not only in their subject-matter, but also in the standards achieved. The tadhkirahs of poets always incorporated some critical material; the best of these were highly instructive as essays in literary criticism. The tadhkirahs of the Sufis were extremely popular, partly because of the growing popularity of the Sufi silsilahs and the great esteem in which some of the saintly Sufis were held by the populace, and also because of the Muslim tradition of teaching religious truths through the biographies of learned and pious personages.[35]

This was based on the fundamental Muslim thinking that the best way of understanding Islam was through the study of the life of the Prophet. It was for this reason that biographies of jurists and scholars also were not neglected. Apart from monographs on biographies, it became the fashion to include sections on the biographies of important people in general histories.[36] These would include the lives of theologians, Sufis, physicians, poets, and nobles. The disciples of famous Sufis sometimes collected their sayings into maljuzat; these consisted of the more significant utterances of the shaikh with a record of the circumstances in which they were made.[37]

In a way this may be considered to be a form of the kabar literature; it is, however, different in spirit, because the intention here is not to entertain but to instruct. Some tadhkirahs of the Sufis suffer from the admixture of supernatural fictions with truth. The defect is generally found in books written long after the subject of the tadhkirah had died and legends had grown about his supernatural powers. The writers of the tadhkirahs were seldom guilty of deliberately inventing tales; they only uncritically incorporated what they had heard. The tadhkirahs are very valuable because they generally give a picture of the social conditions of an age in which the general histories seldom devoted sufficient space to non-political topics.

The chronological order of the development of Muslim historiography has been transgressed in tracing the growth of the khabar form of historiography. Long before some of the developments narrated above, there had grown the annalistic form, in which the events were grouped around years. The historian took up the years in succession and then narrated the important happenings of each year. This was an excellent device for fixing the chronological sequence of events; and in all probability it gave to history the name of tarikh. It has been mentioned above that the word tarikh seems to have come into use in the pre-Islamic Yaman in the sense of fixing a deed in time; in other words, giving a date to a transaction. The earliest Islamic use is in connection with the establishment of the era of the Hijrah.[38]

Thus, apart from the narration pure and simple, which was khabar, tarikh was properly the assigning of a

date to an event and, conversely, the fixing of an event in time by giving it a definite date. The annalistic form, therefore, seems to have played an important role in giving the name of tarikh to history. The greatest name in this form of history is the well–known Abu Ja'far al–Tabari, whose famous history was written in the early fourth/tenth century. This is the first history in the annalistic form written by a Muslim that has come down to us. Tabari's greatness is recognized now in all quarters because of his accuracy and great diligence in collecting data and giving them the form of authentic history by sifting evidence, which he must have done to achieve the result.

There are indications that others may have preceded him in using this form; indeed one 'Umarah bin Wathimah has been mentioned to have written a history in the annalistic form in the third/ninth century, but we know very little about the book.39 It is, however, reasonable to believe that Tabari was not the first to use the form, but he is undoubtedly the greatest among those who have used this method both before and after him. The tradition, however, was continued and 'Ali bin Yusuf al–Qifti has mentioned a succession of trustworthy authors beginning with Tabari and ending with the year 61611219.40 The best example in the Indo–Pakistan sub–continent is the Tarikh–i Alfi composed by a commission appointed by Akbar.

The annalistic form had serious limitations; for this reason it was not imitated on a large scale. It made an absolutely reliable chronology indispensable but where dates could not be determined with absolute certainty it was useless. Besides, this treatment tends to become merely a catalogue of facts in the hands of an unimaginative historian. Even at its best, it leaves little scope for philosophical synthesis or analysis. Even the inclusion of cultural and administrative data becomes difficult; the tracing of the growth of cultural, social, and administrative institutions is ruled out. The understanding of social or even political processes is not aided by this form of history.

When this form was combined with the idea that the highest expression of objectivity lay in a bare statement of the naked fact unadorned by any illuminating comment or opinion, it became little better than a chronology in tabular form that many historians found useful to append to their works. The sub–sequent arrangement of information in decades, generations (qarun), or centuries, may have been derived from annalistic historiography. In any case, the grouping of biographical information in accordance with periods of time seems to have been affected as much by annalist traditions as by other considerations like the convenience of grouping people together by the years of their death.

An outgrowth of these forms was the genre of tabaqat. A tabaqah means a layer; it generally refers to a generation. The word Barn meaning a generation preceded the word (tabaqah, but later (tabaqah came to be used more often until works were called by the names of tabaqah. The term was originally applied to different generations of the narrators of Hadith; then it began to be applied more loosely, until it embraced the succeeding generations of all kinds of men. A history which was named by its author as tabaqat was meant to give information about various classes of people; however, the author seldom used the term in this wide sense and, therefore, only the classes that mattered in the opinion of the

author were included.

Quite often a tabaqat work could limit itself to a single reign. Some of these are more like tadhkirahs, as, for example, ibn abi Usaibi'ah's history of physicians or abu Ishaq al-Shirazi's history of the jurists. Tadhkirahs and tabaqat of this nature alike gradually adopted an alphabetical arrangement to make reference easy, so that some of them came to be biographical dictionaries, often concise and limited to the barest facts. There were notable exceptions and, as has been mentioned earlier, many books dealing with poets incorporated critical reviews of their main works.

The Muslim historians developed many useful mechanical techniques. They were not averse to putting statistical and other factual information in the form of tables.41 They appended in many places their authority for a statement.42 Indeed, with the more careful historians, the sources of their information are almost invariably revealed. They attached bibliographies to their works, utilized official documents and correspondence, and when they thought that it was necessary to do so, they quoted the document verbatim. Consequently, some important documents have thus been preserved for us.43 They utilized all official material that was available to them including the more important decisions of the courts. The Muslim governments kept good records; the courts also had records of all the cases that came before them. The historians, therefore, had no dearth of official material and they used it whenever they found it relevant to their subject. They were aware of the importance of numismatic and epigraphical evidence and used both frequently.

It has been mentioned that the Muslims look upon themselves as a world community. Muhammad as a successor to all the prophets of the world came to fulfil the missions of all of them. The history of the world was, therefore, a matter of vital concern to the Muslims. A fairly large number of histories were, therefore, planned as world histories. The knowledge about the history of the non-Muslim world was fragmentary and depended upon the accuracy of the local tradition which was not reliable in most instances.

There were large regions which had no history; it is, therefore, obvious that the Muslim histories could not be perfect in the recording of the events of other regions or of the past of the regions where Islam had domination. The science of archaeology had not been developed; the methods of deciphering dead languages had not been invented. Because of these factors some non-Muslim pretenders to knowledge practiced curious frauds upon Muslim rulers and Muslim scholars.44 History based on traditions and legends cannot be satisfactory; hence we find that the Muslim accounts of the ancient history of Mesopotamia or of Egypt are unreliable and fragmentary. The knowledge of the Arabs grew as their geographers succeeded in accumulating knowledge. Yaqut bin 'Abd Allah al-Hamawi's geographical dictionary, Mu'jam al-Buldan, seldom fails to incorporate biographical material of the people of note belonging to a locality. 'Ali ibn al-Husain al-Masudi is the best example of the interaction of geographical and historical knowledge; indeed, he combines the two disciplines in a remarkable manner. Today the works of the Arab geographers form a good source of history and are indispensable; even to their

contemporary historians they were of extreme importance.

So far as the world of Islam was concerned, it was a real entity. In the earlier period before the rise of the 'Abbasids split the Muslim world into the East and the West, it formed a single polity. Juristically and theologically, the indivisibility of the Muslim world is an axiom, based as it is upon the Qur'anic doctrine of the brotherhood of all Muslims and upon the implied universalism in the conception of the unity of the Muslim community. It is, therefore, a matter of no surprise that it seemed only natural to the Muslim historians that they should look upon the whole of Muslim history as a single entity. Some of the works, thus, became huge compendiums because they had to treat the various regions and States which in spite of the theory came to have separate histories. With the weakening of the 'Abbasid Caliphate, it remained no easy matter to treat the entire Muslim world in one work. The most outstanding work that achieved great success in this respect is ibn Athir's Kamil fi al-Tarikh. It maintains its balance despite the length of the period which it covers and the large number of countries that it deals with. Despite its annalistic arrangement, it is not devoid of philosophical reflections on the happenings of some importance.

However, this trend of writing universal histories could not last long. For one thing, the distances were enormous and it was not easy to keep an eye on the happenings of so many corners of the Muslim world. Ibn Air himself complains; “A man sitting in Mosul cannot but miss some events happening in the remote corners of the East and the West.”45 It must be remembered that ibn Athir was more successful than anyone else. Broken into numerous independent States, even though most of these continued to owe allegiance to nominal Caliphs, the Muslim world could not, despite the doctrine of the unity of the Muslim world, ignore its division. It entered the domain of religious thinking as well and there grew up proponents of legally sovereign States, every monarch exercising the functions of the Caliphate within his own dominions and enjoying the prestige of being the Caliph in his territories. The Moghul Emperors of the Indo-Pakistan sub-continent were an outstanding but not the only example of the dynasties that accepted this theory of divided Caliphate. Even before, there had been written dynastic and local histories, but gradually the new trends brought to an end the tradition of universal histories of the Muslim world. The intermediate stage was that of the historian who would begin with the beginnings of the Islamic history and then trace the developments in the area about which he was writing, thinking that the Islamic traditions in his own land were a continuation of the history of Islam. Abu 'Umar Minhaj al-Din 'Uthman bin Siraj al-Din al-Juzjani's Tabaqati-i Nasiri is a good example. The dynastic and local histories have already been discussed.

The connection between political science and history was generally understood by the historians. As a matter of fact, the knowledge of history was considered essential to the work of statecraft. 46The policies pursued by previous monarchs were put forward as object lessons to illustrate the consequences of foolish as well as wise methods. For this reason many authors included a good deal of information about administrative measures in their books and summed up their success or failure. In the sub-continent of India and Pakistan a considerable amount of space was devoted to the administrative reforms

undertaken by the rulers. Diya' al-Din Barani's Tarikh-i Firuzshahi; Shams-i Siraj 'Afif's Tarikh-i Firuzshahi, the Sirat-i Firuzshahi, and the Futuhat-i Firuzshahi.'Abd al-Qadir Badayuni's Muntakhabat al- Tawarikh;'Abd al-Hamid Lahori's Padishahnameh; 'Ali Muhammad Khan's Mir'at-i Ahmadi, to name but a few, are replete with this kind of information.

The most outstanding work, however, is abu al-Fadl's Akbarnameh, of which the A'in-i Akbari is intended to be an appendix. But what an appendix it is! It is a virtual gazette of the Moghul Empire and contains so much economic and administrative data that scholars have not yet been able to utilize them fully. The administrative institutions, the policies of the State, the divisions of the population, the agricultural produce of the various areas, the crafts and industries in the different parts of the Empire, and a host of other matters have been recorded. In addition, a considerable amount of cultural material is included. Compared to al-Biruni's Kitab al-Hind, there is no medieval book that gives such a sympathetic account of the Hindu faith and philosophy.

The incorporation of the accounts of alien faiths and cultures is an old Muslim tradition of Muslim historiography. The great geographers seldom mentioned an area without giving some account of the religious beliefs and social customs of its inhabitants. For the non-Muslim times, whenever, for want of historical information of a political nature, the Muslim historian felt at a loss to collect much data, he fell back upon the knowledge of the culture of the people.47 The histories quite often incorporate large sections of the biographies of men noted in some fields of culture.

Abu al-Fadl's data are mainly based upon al-Biruni so far as Hinduism is concerned, but his book also contains his own observations and research. In view of the immediate sources of knowledge available to him and because of his voracious thirst for knowledge, it is unlikely that he did not check all that al-Biruni had said, especially when the Emperor himself was taking so great an interest in Hinduism and abu al-Fadl was his constant consultant. The fact that abu al-Fadl had so little reason to differ shows how well al-Biruni had dealt with the subject.

The fact that history had a deep relationship with statecraft was recognized by the monarch's themselves.48 The Caliph Mu'awiyah is reported to have spent some time regularly every night in the study of history; the narrator of this story gives details that show that the Caliph devoted this time to the study of mundane and secular history.49 These examples can be multiplied ad infinitum. Harun al-Rashid, the Moghul Emperors of India, the Iranian rulers, indeed, monarchs of practically every part of the Muslim world and in every age attached the greatest importance to the study of history. Gradually, a literature grew up that emphasized only those aspects of history that had some direct relevance to statecraft. Sadid al-Din Muhammad al-'Aufi's Jawami' al-Hikayat wa Lawami' al-Riwayat contains selections of historical stories and information that illustrate some principles of politics or administration.

This kind of literature gave place to treatises on administrative matters pure and simple and on politics and statecraft. Even the latter were replete with historical anecdotes. Some were written by men of administrative experience like 'Unsur al-Ma'ali Kaika'us bin Sikandar bin Qabus' Qabusnameh or Nizam

al-Mulk Tfisi's Siyasatnameh; others were written by professional historians like Diya' al-Din Barani-Fatawa-i Jahdandari; yet others by saintly Sufis who were interested in securing the welfare of the people through the instruction of monarchs. In this last category falls the Dhakhirat al-Muluk by Sayyid 'Ali bin Shihab Hamadani. The great Ghazali also has a treatise of this nature in his Nasa'ih al-Muluk. Some were written by obscure writers and to give importance to their works, they ascribed them to well-known historical characters, as the Tauqi'at-i Kisra is ascribed to Nushirwan and the Wasaya-i Nizam al-Mulk to the statesman whose name it bears.

History today is related to sociology and endeavors to find the relationship between economic, social, and political factors and course of events. Indeed, history is no longer a mere recording of facts; it seeks to understand the significance of these facts as agents in fashioning the social and political fabric; it explores the impact of the past on the present in a more vital and deeper sense. It would be idle to expect the developments of the fourteenth/twentieth century in classical Muslim historiography because a good many of the sciences that are so important in understanding the full significance of historical processes had not developed until recently. For instance, the science of economics has made such rapid strides that it can hardly be recognized to be in the least related to the medieval economic thinking.

Economic relations were neither so widespread nor were they so complex in a world where rapid means of transport were not known and the impact of world forces was not felt so quickly as in the world of today. Yet the Muslim historians were not unaware of these considerations. It is a truism to repeat that ibn Khaldin's contribution in connecting history with sociology has been outstanding. He has been highly praised by modern authors and he has richly deserved this praise. "In the Prolegomena (Muqaddimah) to his Universal History (Kitab al-'Ibar) he has conceived and formulated a philosophy of history which is undoubtedly the greatest work of its kind that has ever been created by any mind in any time or place."[50] "Ibn Khaldin was a historian, politician, sociologist, economist, a deep student of human affairs, anxious to analyze the past of mankind in order to understand its present and future.[51]"

Ibn Khaldin (732-808/1332-1406), considered simply as an historian, had superiors even among Arabic authors, but as a theorist on history he had no equal in any age or country until Vico appeared, more than three hundred years later."[52] So far as ibn Khaldin's own position and contribution are concerned, it would suffice here to give these quotations, because a fuller discussion of his work is given in Chapters XLVI and XLIX of this work. It is true that ibn Khaldin had no peers in the world of Islam, but it is not correct as has become fashionable to assert that he had neither predecessors nor successors in what he set himself to do.

Muslim historians do, in their search for causes, go into fields that are not merely political and search out causes that are not discernible on the surface. The Muslim writers had tried to understand the working of economic laws and were conversant with the Greek works on the subject.[53] The writers on revenue in particular brought in economics and sound finance within the scope of their work.[54] Of these perhaps Qudamah bin Ja'far deserves special mention, who in one of his chapters presents a systematic

discussion of political and social sciences.[55] He enters into fundamental considerations regarding the social and economic needs of human beings and the steps taken to meet them. Observations on political, economic, and social factors are found scattered throughout the books of ethics, politics, and history.

In the Indo–Pakistan sub–continent, abu al–Fall among others has brought in questions of economics and social organization while commenting upon administrative measures. The most outstanding example is Shah Wall Allah, who based his philosophy on economic and social foundations.[56]

Being confronted with the problem of the decline of the Muslim political power in the sub–continent of India and Pakistan, he analysed the forces at work to diagnose the disease from which the polity as well as the society suffered at that time and came out with his suggestions for curing their ills, in doing which he explored a wide range of economics, sociology, history, and politics. He examined the relations subsisting between the producers and consumers and laid down the dictum that in a balanced society everyone must contribute to its welfare. Then he pointed out how some sections of the society had become parasites and, thus, had upset the balance. This kind of analysis runs right through his discussions, whether he is discussing social conditions or examining political and economic ills. He has a historical mind because he brings in the examples of the great civilizations that had preceded Islam and draws relevant conclusions from their fate.

In conclusion one may say that history has been a favorite discipline with the Muslims. They brought the highest standards of objectivity into their writings; they showed great enthusiasm for the discovery of true facts; they produced a vast literature of considerable merit at a time when even among the civilized peoples there was not much flair for historiography; indeed, there were cultures of a highly developed nature that had no place

Jurisprudence in their learning for historiography. At such a time the Muslims established standards which have not always been improved upon in the modern world. For instance, contemporary nations have to learn a good deal in standards of objectivity and in distinguishing between national glorification and history. The Muslims were able to expand the scope of history from mere recording of facts into a repository of political, administrative, and cultural experiences and made fruitful essays into the analytical field as well. They failed like the political thinkers of Islam in suggesting the evolution of institutions that would have enabled greater and more responsible participation of the people in the affairs of the State, but they did help in making the Islamic governments beneficent and benevolent at a time when other governments tended to be arbitrary and even tyrannical.

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1. I C. Broekelmann, Geschichte der arabischen Litteratur, 2 Vols., Weimar, 1898; Berlin, 1902; ibid., Supplementbande, 3 Vols., Leiden, 1937-42; C. A. Storey, Persian Literature, A Biobibliographical Survey, London, 1935-59; F. Babinger, Die Ge8chithtsschreiber der Osmanen and Are Werke, Leipzig, 1927 (gives good surveys of the literature discussed in this chapter). Details of the works mentioned here have not been given because they are available in these surveys.
2. Franz Rosenthal, a History of Muslim Historiography, Leiden, 1952, p. 16.
3. e A. Jaussen and R. Savignac, Mission Archeologique en Arabia, Vol. II, Paris, 1909-14, Minaen Inscription No. 32.
4. Rosenthal, op. cit., p. 66, n. 5.
5. The main argument in favor of Byzantine influence is that some historical works written before the known Muslim histories show a similarity in arrangement. The annalistic arrangement, thus, could have been taken over from the Byzantines. On the other hand, the annalistic form could be a natural development. The argument against the acceptance of the view that the Byzantines had any influence is that the Muslim historians do not mention Byzantine authors, in spite of the fact that they were fond of mentioning their sources of information.
6. The work that has come down through an Arabic translation is Khuatainamak, which can hardly be called a history. Other sources of Iranian history were translated into Arabic towards the second quarter of the eighth century A.D. None of these was considered important enough to be preserved in spite of the Iranian tendency to glorify their past. Firdausi's dhah Ndmeh written in the fourth/tenth century depended upon legend rather than history. If there had been any sober history available at that time, more of it would have entered the poem.
7. This is inherent in the Muslim belief, based upon the Qur'an, v, 48; vii, 30, etc.
8. Ibid. v; 68ff etc.
9. Ibid. xxxii, 40, where the Prophet has been called “the seal of the prophets.” The seal comes at the end of an epistle. There is also a hadith which says, “There shall be no prophet after me.”
10. Qur'an, e.g., vi, 6; x, 70ff.; xi, 25ff.; xix, 74; xxix, 20ff.; xxx, 9, 42-47; xxxv, 44, 45, etc., etc.
11. Ibid., iii, 104
12. Ibid. iii, 110.
13. Ibid., xi, 100
14. 14 Ibid. VI, 25; viii, 31; xvi, 24, etc., etc.

The Qur'an uses the word “aadtir” which has generally been considered to mean stories, because of its resemblance to the Greek word historia (Golius, Lexicon Arabico-Latinum, Leiden, 1653, column 1171), but this seems to have little sub: stance in fact, except for the coincidental resemblance. Several European authors have followed Golius, but opinion has now changed. Indeed, the Arabs should have been the first to notice the resemblance and to use the word in the sense of history if there were any substance in this identification. It is more likely that the word has been derived from satar (to write); hence asdtir should mean a record. They certainly do not seem to imply that the Prophet was reciting to them merely fables.

15. This is obvious from the references to communities like 'Ad, Thamnd, etc., vide note 10; also Qur'an, xiii, 30; xiv, 36.
16. Many religious thinkers in Islam refer to the Jewish legends adopted by some mufassirin as Isra'iliyat and disapprove of their use.
17. Muhammad bin 'Abd al-Rahman al●Sakhawi, al-Flan bi al-Taubik li man Mamma AN at-Tarikh, translated into English by Rosenthal, op. cit., pp. 246, 247, 263.

18. 18 Muhanunad bin Sulaiman al●Kafiyaji, al–Muk_htarar T 'ltm al●Tdrik_h, selected passages translated into English by Rosenthal, op. cit., pp. 189, 190; al–Sakhawi, op. cit., pp. 205ff.

19. Qur'an, VI, 116; the corruption of previous Scriptures finds mention also at other places, e.g., v, 13.

20. Al–Sakhawi, op. cit., pp. 259, 261.

21. Ibid., p. 299.

22. Ibid., p. 264.

23. Al–Khatib al–Baghdadi, Kifayah, Hyderabad, 1357/1938, pp. 39ff.; also, alBukhari, Sahih, iv, 121, 126, 142 (Krehl).

24. E.g. Diya' al–Din Barani, Tarikh–i Fireczshahi, Calcutta, 1860–62, pp. 16, 17.

25. Jalal al–Din Muhammad Akbar (1556–1605), third in the line of succession among the Moghul Emperors of India.

26. His subtle insinuations have, through faulty translation, caused grave misunderstandings among European writers like Vincent Smith.

27. E.g. passages quoted in Sources of Indian Tradition, ed. William Theodore de Bary, Columbia University Press, New York, pp. 527, 528, show quite clearly that the authors do not intend the readers to take all their adjectives seriously. Akbar was certainly not “the ruler of the world and of all who inhabit it” nor the “origin of the canons of world–government” and “author of universal conquest.”

28. E.g. passages quoted in Sources of Indian Tradition, ed. William Theo¬dore de Bary, Columbia University Press, New York, pp. 527, 528, show quite clearly that the authors do not intend the readers to take all their adjectives seriously. Akbar was certainly not “the ruler of the world and of all who inhabit it” nor the “origin of the canons of world–government” and “author of universal conquest.”

29. O. Lofgren, Arabische Texte zur Kenntnis der Stadt Aden im iliittelalter, LJpsala, 1936, II, pp. 20, 43–47.

30. Barani, op. cit., pp. 16, 17.

31. “Exodus,” xiv, 30; “Samuel,” I, xvii.

32. Some scholars are of the opinion that no written prose literature existed in pre–Islamic Arabia, e.g., William Marcais, “Les Origins de la prose litteraire arabe,” Revue Africaine, LXVIII, 1929, pp. 15–18.

33. A good example is Sultan `Ala' al–Din Khalji's conversation with Qadi Mughith, reported by Barani, op. cit., pp. 293–97.

34. Many of the histories written in the Indo–Pakistan sub–continent do not fall into the category of dynastic histories. They generally take up certain periods of Muslim rule or of a dynasty, but few works are devoted entirely to a dynasty.

35. E.g., Sheftah's Gulshan–i Be–khar, Azad's Ab–i Hayat, and Shibli's ini`r at'Ajam

36. E.g., Badayiuni in his Muntakhab al–Tawarikh, Abu al–Fadl in his A'in–i Akbari, etc.

37. E.g., Hasan'Ali Sajzi's Fawa'id at–Fuwad.

38. Al–Sakhawi, op. cit., p. 310; al–Kafiyaji, op. cit., p. 183.

39. 'Abd al–Rahman bin 'Ali al–Jauzi, Muntazam, Hyderabad, 1357–58/1938–39, p. 37.

40. 'Ali bin Y6sufal–Qif¢i, Tarik_hat–Hukama', ed. A.Muller and J. Lippert, Leipzig, pp. 110ff.

41. A'in–i Akbari abounds in such tables; Barani gives tables of the names of officers in each reign, etc.

42. This was derived from the way ahadith were narrated: “A heard from B who heard from C who heard from D that the Prophet said.....”

43. Some examples are: Baihaqi in Tarikb–i Baihaqi has preserved the oath of allegiance taken by Mas'ud of Ghaznin to the Caliph; Badayani has preserved the text of the mahdar recognizing Akbar's authority to choose an interpretation where the doctors of law disagreed; abu al–Fadl has preserved the letter Akbar wrote to 'Abd Allah Khan Uzbek of Transoxiana, etc.

44. When Asoka's pillar was brought by Firuz Shah from Meerut and erected at Delhi, the Hindu pundits who do not seem to have known Pali said that the inscription on it prophesied the great success of Firuz hah as a ruler; also cf. Rosenthal, op. cit., p. 111.

45. Ibn Aqir, Kamil f al.Tarikh, Cairo, 1301/1883, I, p. 3.

46. This was the reason why historical studies formed an essential part of a prince's education, e.g., Sinan bin Thabit bin Qurrah quoted by ibn al–'Adam, Bugjhyat al–Talab, Cairo, MS. Tarikh, 1566, I, p. 137; ibn Hamdun, Tadhkirah, Bodleian MS. (Ar.) Marsh 316 part 3, 80b, etc., etc.

47. The reason has been given by al–Tha'libi, Qhurar, Paris, MS. (Ar.) 1488, f. 247a, where he says, “The narration of these

matters is like reporting about their kings, because people follow the religion of their kings, especially the Indians who immolate themselves for the glory of their kings and some of them even worship their kings." The author has explained earlier that historical data regarding India are difficult to obtain.

48. Ibn Hamdun, op. cit., says, "Genealogy, history, and elements of jurisprudence, are royal sciences." Compare Yaqut, Irshad, Cairo, I, p. 27, who says, "the knowledge of genealogy and history belong to the sciences of kings ...." bah Jahan made a habit of listening to history every evening ('Abd al-Hamid Lahori, Padishahnameh, Bib. Indic&, Calcutta, I, p. 153).

49. Al-Mas'udi, Murdj al-Dhahab, Cairo, 1346/1927, II, p. 72.

50. Charles Issawi, An Arab Philosophy of History, London, 1950, p. x, quoting Arnold J. Toynbee.

51. Idem, pp. x, xi, quoting George Sarton.

52. Ibid. p. xi, quoting Robert Flint.

53. M. Plessner, Der ouxovouir.6S des Neupythagoreers "Bryson" and sein Einfluss auf die islamische Wissenschaft, Heidelberg, 1928, Orient and Antike, Vol. V.

54. The various books on Kharaj and the A'in-i Akbari of abu al-Fadl are good examples.

55. Rosenthal, op. cit., pp. 462-63, gives a table of contents.

56. Such material is found in several of his books, especially Hujjat Allah al. Balighah; an Urdu translation is available, Lahore, 1953.

Chapter 61: Jurisprudence

In this chapter it is proposed to bring into relief the philosophical significance of certain salient points and aspects of Muslim Law, otherwise known as Fiqh. But before doing so, let us have a tolerably precise idea of what one under stands by law, and in particular what the Muslim jurists have understood by it.

A – The Law

Law roughly means the rules of conduct. But not every rule of conduct forms a part of law. There are things people instinctively do under the dictates of their normal impulses. These do not concern law, nor are the concern of law the modes of behavior regarding things which persons do deliberately but which relate to their private lives, and have no repercussions on other members of the society or are of rare occurrence. Men differ enormously among themselves in their capacity for reasoning and the power of choosing an action out of the various possible alternatives. Even some matters of general occurrence and those affecting other persons besides the agent himself do not come under law. Law does not take cognizance of the behavior of individuals which is infinitely varied, for if it did, it would lead to chaos and conflicts rather than uniformity in behavior.

The cases which fall under law are as follows:

(i) Sometimes certain individuals do things of their own accord and thus their private initiative sets precedents, customs, and usages if experience shows their utility, or in case historical reasons create a halo of prestige and awe around the names of their initiators.

(ii) Sometimes actions are done at the instance of others. For example, a child may do something or abstain from doing something because its mother, father, or some other superior directs it to do so. A young student may behave similarly at the instruction given by his teacher. A grown-up man may do something at the suggestion of his friends in whose sincerity and intelligence he has confidence, on the direction of his spiritual guide, or at the dictates of public opinion. Rules of conduct are also sometimes determined by the orders of a superior to whom we delegate powers out of our own free choice, such as an elected or accepted ruler with or without the power of revoking our decisions. On other occasions a rule of conduct may arise from a superior's order, obedience to which is a lesser evil than its disobedience. Such is the case with prisoners of war, slaves, and the like who must abide by the order of their master under pain of coercion and punishment.

(iii) A rule of conduct may also be considered to be of divine origin. Our forefathers in different parts of the world at various epochs have continuously believed certain individuals possessed of lofty character to be messengers of God and later generations have inherited this belief. It goes without saying that of all the superiors' orders those that proceed from God must remain the most meritorious to obey. God's orders, according to religious beliefs, are received through the agency of certain human beings chosen by Him and called by some prophets and incarnations of God by others. The commandments communicated by such persons are accepted by those who believe them to be the orders of God, the Creator and Master who will judge them all on the Day of Resurrection according to their deeds.

(iv) Lastly, there are deductions from and interpretations of basic laws, such as lead to new laws.

Muslim Law is a collection of all the four types of rules mentioned above, viz., rules of customs, orders of superiors, divinely revealed Laws, and the rules arising from the deliberations of jurists. There is the Qur'an, which is taken as the uncreated Word of God; there is the 1Iadit_h and Sunnah (sayings and doings of the Prophet of Islam) which include not only what the Prophet said or did himself, but also what he tolerated of the existing practices among his Companions, practices coming indeed from pre-Islamic habits and customs. Moreover, there are individual or unanimous opinions of experts and specialists (jurists), there are customs which do not go against express laws, and there are foreign laws acted upon on the basis of treaties, reciprocity, and so on and so forth.

Whether the legislators of Islam abolished some old customs and practices, retained and confirmed some others, intact or in a modified form, or took the initiative of ordaining new rules of conduct–the sole principle that guided their legislative activity in all these cases was to "do what is good, and abstain from doing what is evil." According to al- Ghazali[1], this principle of good and evil (husn wa qubh) was propounded by the Mu'tazilite jurists. Being more rationalist than their contemporary traditionists, it was the Mu'tazilites who were perhaps the first to be struck by the curious and repeated stress which the Qur'an has laid on the rational side of life. To persuade men to abide by the precepts of Islam, the Qur'an again and again appeals to reason (tadabbarun, tatajakkarun, ta'qilun, etc.), and repeatedly refers to ma'ruf and munkar[2] as the bases of Muslim Law.

Now, ma'ruf means a good which is recognized as such on all hands, and a munkar is an evil disapproved as such by everybody. It cannot, therefore, be true that the rules of conduct laid down by the Qur'an and the Sunnah are arbitrary and merely for the purpose of testing the will to submit on the part of the Faithful. Evidently, not every man in the street will be able to understand the underlying principles of each and every Qur'anic order or injunction. That is the domain of the specialists of the philosophy of Law. An anecdote will explain the point. Abu Hanifah, one of the early jurists, had a penetrating mind, and was also endowed with a sense of humor. Not always being able to understand the reasons that led this great jurist to hold certain opinions, stupid people began to accuse him of heresy; according to them, he legislated by his personal opinion in disregard of the sayings or practice of the Holy Prophet. Once somebody had the audacity to tell this to his face.

Abu Hanifah replied: “I never promulgate rules on my personal opinion; on the other hand, I always deduce laws from the sacred texts of the Qur'an and the Hadith. Had I relied on my personal reasoning, I would have ordered that in the act of ablutions, one should pass a wet hand not on the uppers of a shoe (khuff)–as is ordered by the Prophet–but on the sole, for that is the part which requires cleansing more than any other part of the footwear.” In this humorous way, abu Hanifah succeeded in silencing and even calming the apprehensions of his well–meaning critic.

The answer was humorous, because abu Hanifah did not refer to the reasons for not washing the soles of one's shoes for if the sole of the footwear is moistened and then one stands up for the service of worship, it is the more apt to get dirty if one prays on the ground, and to soil the carpet if one prays on one. In other words, a single issue may have several aspects, but it is the duty of the philosopher to give preference to the more important of such aspects.

However, the principle of the Islamic Law is that its rules must be based on the good and prohibitions on the evil inherent in a given act. This was an original contribution of Muslims to the legal science; no other civilization had thought of it before, as has been admitted by Professor Ostrorog in his brilliant essay “Roots of Law,” contained in his book Angora Reform. In fact in expounding the Qur'anic statement, “Do what is ma'ruf (what is good in the eyes of God and man) and abstain from what is munkar (what is evil in the eyes of God and man),” the Muslim philosophers of Law developed an all–embracing system. A brief expose is all that we can take up here in dealing with a subject which fills scores of pages in works on Usul al–Filth (the Principles of Law).

In this world in which everything is infested with relativity, it is often impossible to obtain unmixed goods, and sometimes it is even possible to say that a given act contains neither good nor evil. Therefore, what seems to be unmixed good will be ordained as an obligatory rule (wajib); what is unmixed evil will be declared as an obligatory prohibition (haram); in complex cases, predominance will decide the preference: a matter of predominant good will be recommended (mustahab), and one of predominant evil discouraged (makruh), without going so far as to declare them obligatory to perform or to abstain from. And in matters where good and evil are equal, or where one is unable to see either good or evil,

Law will leave it to the discretion and choice of the individual to act or not to act.

This five-fold division of actions giving rise to five rules of law-order, prohibition, recommendation, discouragement, and indifference-resembles the cardinal directions of the compass. Even as we can subdivide the directions and say North, NE, NNE, and so on, we can also find out intermediary grades between good and evil. The absolute good will be divine order, obligatory on each person in a group (fard'ain) or obligatory on at least a few in the group (fard kifayah); the good with less sure absoluteness will be legal order (wajib), and practice of it will be enjoined with insistence (sunnat mu'akkadah). The act with pronounced inclination towards the good will be recommended or preferred (mandub or mustahab) and the one on the deadline will be supererogatory (nafl). Similarly, the evil may be prohibited (haram), tending to be prohibited (makruh tahrinai), better to shun (makruh tanzihi) and so on.

It is true that the application of these mathematically perfect rules of the legal geometry to concrete cases will be affected as everywhere else by play of the human element, more so in matters of intermediary grades with subtler points to judge. With regard to such matters the judges and jurists differ among themselves. Abu Hanifah would say that to eat prawns is forbidden, but al-Shafi'i would declare it to be perfectly lawful. Certainly this respective relegation of the prawns as food to what is good or bad is only relatively so, and the forbidden character of their consumption has not the same degree of prohibition as, say, that of wine. Jurists call it deduced prohibition (Haram istinbati) as distinct from legal prohibition (haram shar'i).

Narrow minds may fail to see this point and enter into quarrels. Here a case may be cited which seems to be the model to follow in such cases: abu Hanifah and al-Shafi'i are doubtless two of the leaders (imams) of Muslim Law, completely independent of each other in legal judgment. According to al- Shafi'i, the qunut prayer at dawn (fajr) is obligatory, whereas abu Hanifah suppresses it completely. The story goes that once al-Shafi'i went to Baghdad (where abu Hanifah lies buried), and during his stay there he renounced his own view on the qunut prayer. When questioned, he said: “I continue as firmly to cling to my opinion as before, yet in the presence of the great abu Hanifah I feel ashamed to follow my own opinion.” Needless to say that the implication is that such learned differences do not concern the general public who should not only follow their leader (imam) but should also be tolerant of those who are followers of other leaders.

B -Law And Ethics

Islam attaches very great importance to ethical values, yet it makes a distinction between Law and morals. In the books on Filth, one comes across such expressions: “that is the rule of Law (fatwa), though the rule of piety (taqwa) requires just the contrary.” The meaning is clear: the jurist wants to say that there is some difference between human justice and divine justice. Far from being impeccably perfect, what is human must fall short of the divine. The juris consult and the judge decide cases on the basis of facts and evidence produced before them. If certain important facts, with bearings on the nature

of the litigation, are concealed from the arbiter–no matter intentionally or otherwise–the decision may be correct de jure but not de facto, the latter being beyond human possibility, at least in some cases. For this very reason, the Holy Prophet once said: “Some of you are better pleaders, and I decide according to facts submitted to me. If I decide in favor of any of you what is not his due, let him know that I award him only a part of the hell–fire with which he will fill his belly,' 3 if he profits by such a decision based on mistake or the only available material facts.

The law which claims to be based on the good is often hard to distinguish from ethics. Nevertheless, it may be said that there exists a measure for differentiating between them. For, the rules of Law in Islam have a double sanction, namely, the coercive power of the court of justice (a court may enforce its verdict to get the rightful owner his due, or, in case it is impossible, the court may punish the doer of the injustice), and the divine punishment on the Day of Judgment; but the rules of piety, the ethical rules, as distinct from the legal injunctions have only the other–worldly sanction apart from the more or less effective public opinion.

As Islam inculcates belief in Resurrection and the Day of Judgment, a true believer prefers a loss here to the divine wrath in the hereafter.

C– Sanctions

As we have just observed, the Muslim Law is more fortunate than its counterparts in some other civilizations, for it is endowed not only with the material sanctions enjoined by modern secular States but also with a spiritual sanction, and this in addition to persuasions both material and spiritual. The belief in Resurrection and the Day of Judgment, combined with the mere coercive force of a country's court of justice, assures a greater observance of the law by its believing subjects.

It is common knowledge that the Qur'an repeats scores of times the formula, “Establish service of worship and pay the tax (zakat),” pronouncing prayer and tax in the same breath. Even a beginner in the study of Muslim Law knows that zakat has always been included in the section of liturgical rites ('ibadat) in the manuals of Fiqh. With a word of explanation of the meaning of the term zakat, even the most uninitiated may realize the significance of this seemingly curious combination of prayer and tax.

Zakat is not almsgiving or charity. Its proper place is in the books on Law. In the time of the Holy Prophet and his successors, the Muslim subjects of the Islamic State–we exclude the non–Muslim subjects for the present paid no tax to the government other than zakat which covered the entire fiscal system. Zakat al–ard was the land revenue; zakat al–tijarah was tax on commercial capital as well as on import customs; zakat al–mashiyyah was imposed on herds of domesticated animals (ovine and bovine animals and camels) living on public pastures; zakat al–ma'ddin on the sub–soil products; zakat al–'ain was imposed on savings of money, and so on and so forth. Every tax imposed by the government on Muslim subjects was included in the term zakat; this may be corroborated from the sayings of the Prophet on the subject of zakt (as also more or less the equivalent and synonymous term sadaqat).4

Now, reverting to the main point, mention of the service of worship and payment of tax in the same breath and, consequently, inclusion of the taxes in the category of liturgical acts (`ibadat) should not astonish us. It is in fact deliberate. In Islam one must do everything for the sake of God. As al-Ghazali has forcefully put it, if you pray or fast for ostentation, it will be a kind of polytheism, the adoration and worship of your own self; on the other hand, if you eat delicious food (with the sole intention of acquiring energy for the performance of acts pleasing to God), and if you cohabit with your wife thinking that it is the performance of a divinely ordained duty, then these mundane enjoyments constitute real acts of the worship of God ('ibadah). Authors of the works on Muslim jurisprudence (Fiqh) since very early times have affirmed that acts of worship of God can relate both to our body and soul and to our property: if true faith is our spiritual act of worship, and prayer, fasting, and pilgrimage are the physical expressions of the same faith, then zakat is no less than our monetary mode of worshipping God.

A true believer does his spiritual and bodily duties with respect to God, without being forced to them by an organization (such as the government); he also pays his taxes to whomsoever they are due, even when the rightful person ignores his right or finds himself incapable of having it enforced. Which finance minister of the world would resent that the subjects of the State should believe that paying the government taxes is one of his religious duties, such as would bring eternal salvation in the life to come?

D – Law And Religious Affairs

We have already made passing remarks, in the foregoing paragraphs that the subject-matter of Law consists of the practical affairs of men. It deals with affairs from birth to death, and, to a certain extent, even with those after death (such as the questions of funeral, payment to the creditors, execution of the will, distribution of heritage, remarriage of the widow, etc.).

It will be observed that the Fiqh excludes questions of non-practical nature, such as beliefs and dogmas and, as already pointed out, those of piety and charity, which are questions of conscience rather than those relating to practical affairs properly considered so.

All practical affairs of public nature fall within the purview of Islamic Law because it prescribes for each of them the degree of obligation (fard, wajib, mustahab, sunnah, mubah, etc.). Many a question of politics and administration too falls under the subject-matter of the legal science, although some latitude obtains in such matters.

It is perhaps useful to point out a certain resemblance that exists between the Roman fas and jus on the one hand, and that between the Islamic Fiqh and Siyasah Shari`ah on the other. In ancient Rome all laws were religious (and called fas) and as such depended on the decisions of the priests; later, the kings arrogated to themselves the right to decide in certain matters (rules of which were called jus) which the priests reluctantly conceded, but slowly more and more matters entered within the competence of jus or civil law of Rome, on which lay authorities could promulgate rules. The Fiqh is also a religious Law, in-asmuch as its principal source is the divine revelation, yet the same Law left a number of points,

including certain matters of penal law, to the discretion of the ruler and his delegates; this was termed Siyasah Shari'ah. But the nature of relation between Fiqh and Siyasah Shari'ah was such that the latter could not replace the former or encroach upon its privileges. For in Islam the “priestly class” does not exist, at least in the past it was not separate from the class of civil authorities, the Caliph himself being the head at all religious functions.

It is to be pointed out that in other civilizations, human affairs are divided into temporal and spiritual. In Islam the greater part of spiritual affairs is vested in the hands of the same authorities as have the charge of temporal affairs. It seems that the Muslims divide their religious affairs into external and internal. Declaration of faith, service of worship, fasting, and hajj, although closely related to spiritual matters, are yet matters concerning the State, and are, therefore, external affairs. Internal affairs, by which one understands one's relation with God, form the subject-matter of mysticism and are left in the hands of spiritual guides who are also considered successors of the Holy Prophet and, therefore, Caliphs in the spiritual sphere. In this realm, there are no rivalries. Several Caliphs could and did simultaneously exist in the Muslim community. On the death of the Prophet, Abu Bakr and 'Ali could not co-exist as Caliphs for external affairs, yet both were at the same time regarded as Caliphs of the Prophet in internal or spiritual affairs. As a result of this natural division of functions, Islam has been able to avoid the possibility of a tug of war, and the consequent bloodshed, between a king and the chief spiritual authorities.

It must further be pointed out that the division of spiritual and temporal powers is perfectly lawful in Islam, and does not upset its religio-legal system. The Qur'an[5] lays down that the practice of former prophets remains valid in Islam, unless expressly abrogated; and it relates, as a precedent, how in the presence of the Prophet Samuel and with his approval the Israelites could accept the famous Talut as king.[6] The presence of a king and a prophet in the same community necessarily implies the division of powers, temporal affairs falling within the competence of the king. It goes without saying that in Islam the Qur'an is the basis of all rules of conduct, both for the lay authorities and for the religio-spiritual functionaries.

As to the object of Muslim Law, its comprehensive nature admits of no doubt regarding the fact that it aspires the well-being both here and in the hereafter. The Qur'an has condemned those who neglect any of these two, and approves of those who aspire simultaneously after welfare in both.[7]

E – The Chief Sources

The life and longevity of a legal system depends much on its sources; unless these sources are adaptable to changing circumstances, it may not survive foe long. Let us see if the recognized sources of Muslim Law satisfy this requirement of longevity. The chief sources of Muslim Law may be classified as under.

Divine Revelation. This is of three kinds: (a) Recited (matluwww); (b) non-recited (ghair matluwww),

i.e., not employed in the service of worship; and (c) a previous revelation. A few details may not be out of place.

(a) The recited revelation as preserved consists solely of the Qur'an, which the Muslims believe to be the Word of God, a collection of divine messages revealed from time to time to the Prophet Muhammad, and preserved from his very time by the double method of writing and learning by heart. If the written document has some error due to inadvertence of the scribe, or even due to an exterior evil such as effacement, damage to the copy, etc., memory comes to rescue. Similarly, if one who has learnt a passage by heart, but while reciting it cannot recall a word, reference can be made to the written document. From the time of the Prophet down to these days, this double method has everywhere in the Muslim world been employed to preserve the integrity and purity of the sacred text, which in this respect is unique in the world.

(b) The non-recited revelation consists of three distinct things: what the Prophet said (Hadith), what he did himself (Sunnah), and what he approved of and tolerated among his Companions such as an ancient pre-Islamic custom consistent with Islamic norms. For lack of a comprehensive term, Hadith and Sunnah have been used as co-extensive, interchangeable, and synonymous terms to cover all the three aspects of the non-recited revelation. It was quite natural for the community receiving a messenger of God to treat every message given and every act done by him as being in conformity with the will and wish of the sender of that messenger, more so because the Qur'an itself has enjoined that the practice of the Prophet should be treated as the best model to imitate and follow.[8]

The non-recited revelation was both explanatory of and complementary to the recited revelation. As such it helped to clarify the Law and also to interpret it.

A number of the Companions of the Holy Prophet put their memoirs on the subjects of Hadith and Sunnah to writing in the very lifetime of the Prophet. One such compilation, the Sahifah Sadiqah of 'Abd Allah ibn 'Amr ibn al-'As, is reputed to contain one thousand reports.[9] The case of Anas is much more interesting. In later times, when requested by his pupils, he would bring out a box and show them note-books (majallat) saying, “That is what I wrote from the sayings and doings of the Prophet, and also read to him from time to time, so that if there was any mistake be removed it himself.” Many more Companions prepared their memoirs after the death of the Prophet, yet they were all supposed to have been based on first-hand knowledge. Later generations compiled the memoirs of these different authors, always scrupulously mentioning in each case its source. How careful and honest they were may be realized from the following fact.

Al-Bukhari's collection of the Hadith is considered to be one of the most authentic collections. He has cited for each tradition the chain of narrators, i.e., the sources and the sources of the sources up to the Prophet. Supposing he uses the clause: “From ibn Hanbal, who from 'Abd al-Razzaq, who from Ma'mar, who from Hammam, who from Abu Hurairah, who from the Prophet heard. ..,” it would be perfectly legitimate for an objective and impartial student to be skeptical and to start fresh investigation by

assuming that al-Bukhari has forged the chain of the sources and invented the narration. But we possess also his source, the Musnad of ibn Hanbal, and find that this latter author also cites the same narration, on the basis of the same sources, and gives exactly the same wording of the contents of the narration.

Al-Bukhari is acquitted honorably, but perhaps ibn Hanbal had forged. But no, we possess fortunately also the Musannal of 'Abd al-Razzaq (now in press in Hyderabad-Deccan, having been edited by Dr. Yusuf al-Din), and there the remaining chain of sources is given and the hadith is recorded in the same words without the least difference. Now say, perhaps 'Abd al-Razzaq was the falsificator. But we possess his source also, for in the Jami' of Ma 'mar now being edited by Dr. Fu'ad Sezgin of the University of Istanbul, the same hadith is found, with a shorter chain, but with no difference in the wording of its contents. Perhaps Ma'mar was the forger. But no, his source, the Sahifah of Hammam ibn Munabbih dictated by abu Hurairah to his pupil, is there to attest his perfect honesty. We also know that abu Hurairah possessed many books on Hadith. Even in the absence of these books other chains of transmission narrate the same with and attest to its truth and there remains no possibility of its having been falsely attributed to the Holy Prophet.

There is no denying the fact that forgeries in the Hadith have crept in, due to unscrupulous or dishonest authors, yet the double method of riwayah (uninterrupted chain of transmission by reporters known for the integrity of their character) and of dirayah (scrutiny of the contents and internal evidence) has practically eliminated the chances of forgery in the more important collections, such as the "Six Canonical Collections" (Sihah Sittah). If, however, a certain report seems to us to be incompatible with the dignity of the Prophet as envisaged by our modern conception that alone would not justify our declaring it to be a forgery or a falsification. Many a time the context explains what an isolated phrase does not. A subjective approach must be replaced by an objective one, and everyone should try to understand things with reference to their context-not in isolation-and in the light of the whole system of Islamic Law.

The hadith comprises also the taqrir or confirmation of some of the customs and practices of the pre-Islamic days. It shows on the one hand that Islam is a reform of the past and not a complete break with it, nor an entirely new implantation. It also gives an authoritative interpretation of the verses of the Qur'an according to which all that is not expressly forbidden is lawful.[10] The same notion is stressed in two interesting sayings of the Prophet, namely:

(i) "The virtues of the days of ignorance (jahiliyyah) will be acted upon in Islam" (Ibn Hanbal, III, 425).

(ii) "A wise counsel is the lost property of the Faithful (mu'min); wherever he discovers it, he takes hold of it" (al-Tirmidhi, chapter "'Ilm," 19; ibn Majah, chapter "Zuhd," 15).

What is virtuous or vicious in pagan customs is easy to decide by reference to the injunctions and prohibitions expressly given in the Qur'an and the Hadith.

(c) Previous Revelations.–With regard to the earlier prophets the Qur'an has said: “They are those who received God's guidance; follow the guidance they received.” 11But, unfortunately, most of the ancient Scriptures have been lost to us, e.g., that of the Prophet Abraham, of which there is repeated mention in the Qur'an. Some prophets seem never to have transcribed the divine messages they received. The accusation made by the Qur'an of the corruption of the previous Scriptures12 considerably reduces the importance of this source.

F–Other Sources

(a) Private Expert Opinion.–Law in Islam has a divine origin, yet the exercise of judgment on its interpretation, application, and implications is human. The Qur'an and the Hadith have approved this source, and even encouraged it. Individual opinions are termed qiyas, and the collective ones ijma' (consensus). But the opinions of savants and researchers are not infallible; hence these same savants have approved that a qiyas by one could be rejected by another and a better one suggested. Similarly, an earlier collective opinion can be superseded by a later one.13

It goes without saying that a right given by the Qur'an and the Hadith cannot be taken away by any worldly authority.

These private opinions are, however, valid only in so far as they are not against the revealed Law, the principal source. In this connection the Holy Prophet has left a principle for the savants to observe. This principle enjoins that they should aim at facility for the public and not at difficulty. Once he said: “The Islamic religion is easy. Whoever will render it hard, he will be defeated thereby.” 14 The same principle was repeated in the instructions given to governors: “Provide facility, don't create hardship, and do not frighten people away from Islam.” Hence public weal (istislah) is an additional and valid source of Law.

(b) To the same category should be assigned the rules promulgated by the government–be they based on the ijtihad of the ruler, or on expert opinion of the jurists consulted by him–and enforced mostly for administrative purposes. In theory, this may remain in force during the reign of a ruler, until it is abrogated by him or his successor. This kind of legislation is sometimes called al–ahkam al–sultaniyyah. The fundamental principle holds good, viz., that such official directions should not go against the revealed Law.

(c) An allied source is a Muslim ruler's confirmation and retention of pre–Islamic customs of a territory, mostly at the time of the accession of that territory to his State. A typical instance is reported by al–Mas'ndi, who says that after the conquest of Iraq and Iran, the Caliph 'Umar retained the Sassanian law of land–revenue. He found it equitable and conforming to social justice. Not so was the case with the Byzantine laws in force in Syria and Egypt which countries were conquered at the same time. 'Umar thoroughly modified the Byzantine laws.15 The basic source of this attitude was the Qur'an and the Hadith. Such “good customs” of foreign origin may even touch private affairs, such as contractual relations in commerce, industry, etc.

(d) With a small difference, the same source is to be based on the principle of reciprocity. A classical example is the following. Once the governor of the frontier town Manbij (Hierapolis) asked the Caliph 'Umar what tariff should be imposed on traders coming from beyond the frontiers, and the Caliph replied, "Levy as much as their governments levy on Muslim subjects going there for similar purposes."[16]

(e) Certain laws, particularly those concerning international relations, both in peace and war, are often regulated by bilateral or multilateral treaties which were regarded by the Holy Prophet as a valid source of Muslim Law. An example of such laws is the law of extradition based on the Treaty of al-Hudaibiyyah.[17]

(f) Even new customs may gradually take root and add to the body of Muslim Law. To express slight nuances they are called 'urf, addah, ta'amul. They are practices and customs limited to localities or classes of people. Needless to say that society is a living organism, and the interaction of circumstances, inventions, and progress made in the material domain profoundly affect our conceptions and, indeed, our practices. The general principle remains valid: such practices should not go against the revealed Law.

(g) One sole exception to this general principle is admitted by the jurists, and they call it "prevalent custom" ('umum al-balwa), which may abrogate even an existing law. Apparently, the theory of the ijma' (consensus) plays its role therein. In practice this touches only minor points of legal rules, mostly the rules deduced by former jurists. It is unthinkable that such "prevalent customs" could abrogate a law enjoined by the Qur'an.

G – Particular Sections Of The Law

Theologians normally discuss four topics: (i) beliefs ('aqa'id), (ii) acts of worship ('ibadat), (iii) morals (akhlaq), and (iv) social affairs (mu'amalat). The jurists do not concern themselves with beliefs and morals and confine their views only to rules regarding acts of worship and laws regarding social affairs.

Before dealing with Muslim jurisprudence under these two heads, we would like to make it clear that in Islam acts of worship ('ibadat) do not mean acts indicating only the relation between the worshipper and God. In fact, beliefs, acts of worship, morals, and social affairs are all closely related to one another and, therefore, none of them can be considered in isolation. Acts of worship, apart from relating the worshipper to God, directly influence other human beings as well. For example, although zakat is an act of worship in relation to God, yet it is intimately connected with society. It is a State tax collected from and used for the welfare of its members. Similarly, social affairs are not merely matters of relations between man and man but have direct bearing on man's relation with God. In Islam there is no matter which can be considered to be isolated from spiritual values and divinely ordained laws. Every public affair is a means to the achievement of some spiritual value. Therefore, it can be safely said that there is no matter in Islam which is purely an act of worship or a public affair. Every act of worship is a public affair and every public affair is an act of worship.

Jurists generally divide jurisprudence into the laws dealing with (i) acts of worship (`ibadat), (ii) social affairs (muamalat), and (iii) crimes (`uqubat). Under the head "acts of worship" fall prayer, fasting, pilgrimage, and zakat (the State tax). Under "social affairs" come socio-political, economic, and financial matters, e.g., sale and purchase, contract, gift, trust, surety, partnership, and matrimonial affairs. Penal laws deal with such crimes as murder, theft, adultery, drinking, etc. It is not possible to deal with every rule within the space at our disposal, not even with every set of rules. Therefore, we content ourselves with discussing some select topics and these too very briefly.

1. `Ibadat

Under this head we deal only with prayer. A prayer or service of worship in Islam is described by the Prophet as the "pillar of the faith" and "ascension" (mi`raj), i.e., a journeying unto the Almighty. In the words of Shah Wali Allah: "Worship consists essentially of three elements: (i) humility of heart (spirit) consequent on a feeling of the majesty and grandeur of God, (ii) confession of the superiority of God and lowliness of man by means of appropriate words, and (iii) adoption of bodily postures expressing reverence. As a man can reach the top of his spiritual evolution only gradually, it is evident that such an ascension must pass through all the three stages, and a perfect service of worship would have three postures, to wit, standing up, bowing down, and prostrating by laying the head on the ground in the presence of the Almighty–and all this for obtaining the necessary evolution of the spirit so as truly to feel the sublimity of God and the humility of man.[18] At the end, kneeling before the Lord, in the "invocation of the Divine Presence" (tashahhud), the faithful use the very words of the dialogue between the Holy Prophet and God during the mi`raj:

Prophet: "The blessed and purest of greetings to God!"

God: "Peace be with thee, O Prophet, and the mercy and blessings of God!"

Prophet: "Peace be with us and with all the pious servants of God!"

After this a Muslim affirms his submissiveness and attests the formula of the faith, then expresses his thankfulness to God for having sent such messengers as Abraham and Muhammad (both of blessed memory) to guide him. Thereafter, he asks for pardon and well-being in the two worlds. On his "return" from the visit of the threshold of God, he wishes peace to all believers, and with that he terminates his service.

2. Mu`amalat

(a) Polity

Islam has not only united prayer and politics in a greater whole by assigning them both to the same Imam, but it has also dispensed with all prejudices of color, language, race, birth-place, etc., declaring all men equal, basing superiority solely on piety, and taking practical steps to reunify the descendants of

Adam and Eve. Allah is not the God of this or that race, He is the Lord of the worlds, both known and unknown (Rabb al-`Alamin). Nationality as based on race, color, or language is fatal in the long run. It is to be based on the identity of outlook on life (religion) accessible to any and every individual, irrespective of race, caste, or color. The common code of Law (the Qur'an and the Hadith), the common focal point for prayer and hajj (Ka'bah), and the unity of the Faithful under a common Caliph are some of the means employed for the removal of all class and color distinctions.

In politics, sovereignty belongs to God, and man is the lieutenant and vicegerent of God. This notion works powerfully on man. Islam imposes no particular form of government; the Qur'an never speaks of kingship in connection with Muslim polity. There is not a single reference to republic or oligarchy. Yet the first Muslim Government after the Prophet was a "life-long republic." The Head of the State did not come to power by inheritance, but was chosen for life. So the State was neither our modern republic, nor the hereditary despotic kingship. The oath of allegiance (bai'ah) was essential even for the recognition of the Prophet himself; and this automatically excluded hereditary monarchy, though the Shiites do not hold this view.

It is obligatory on a Muslim ruler to have consultations; right of veto seems to be a matter left to time and clime. His fundamental duties are four-fold: cultural (propagation of Islam), administrative-executive, judicial, and legislative. But legislation by government is the least important of its duties. In Islam, legislation has always remained a privilege of private savants, beyond the control of the rulers with their ever-changing whims and fancies and exigencies of the day-to-day politics. And as we have described above, legislation in Islam is only for secondary matters; the primary principles have already been laid down by the Qur'an and the Hadith.

(b) Fiscality

As already pointed out zakat is not at all almsgiving or charity, but the State tax, covering practically the entire fiscal system imposed on Muslim subjects. It is significant that the Qur'an prescribes no details as to the income, but gives very precise directions regarding the expenditure of the State. The implication seems to be that the government may have a free hand in increasing the revenues, but in matters of expenditure it sould noth deviate from the principles of a welfare State. The rates and items of the zakat are mentioned only in the Hadith. That they are not of a static character, is proved by the fact that in the time of the Prophet the import of victuals, effected by caravans of the Nabataeans, coming from beyond the frontiers of the Muslim State, were subjected to ten per cent of duties, but the Caliph 'Umar reduced them only to five per cent. To ibn Hazm the rates current in the Holy Prophet's time are, for all later generations, the necessary minimum and can be increased only in the interest of the community. Other jurists have resorted to more reverential attitudes. They uphold the rates of the time of the Prophet as the norm, but allow under the name of nawa'ib (passing exigencies) enhanced or new taxes.

The expenditure of zakat is much more important. The Prophet of Islam ordained that the income of zakat is religiously forbidden (haram) to him, to his family, to his tribe, and to the allies of his tribe. If the

Head of the State is so scrupulous and does not abuse public confidence in money matters entrusted to his care, subordinates would be the less tempted to corruption. Further, the Qur'an has ordered that taxes (sadaqat) should be spent under eight main heads of expenditure. They are to be levied only for the poor, the needy, the wayfarer, those who work for the State revenues, and those whose hearts are to be won; also for freeing the necks, and the heavily indebted, and for use in the path of God.[19] According to such a high authority as the Caliph 'Umar, fuqara' (the poor) are those who belong to the Muslim community, and masakin (the needy) are from the non-Muslims. It is to be noted that the sadaqat do not come from the non-Muslims, yet the needy among them are the beneficiaries of these taxes paid only by the Muslims.

Those who work are the collectors, accountants, and controllers of expenditure, auditors, and others, embracing practically the entire administrative machinery of the State.

Those whose hearts are to be won may be of many kinds. The great jurist abu Ya'la al-Farra' observes: "Those whose hearts are to be won are of four kinds: (i) those whose hearts are to be reconciled for coming to the aid of the Muslims; (ii) those whose hearts are to be won in order that they abstain from doing harm to the Muslims; (iii) those who are attracted towards Islam; and (iv) those by whose means conversion to Islam of the members of their tribes becomes possible. It is lawful to benefit each and everyone of those whose hearts are to be won, be they Muslims or polytheists."[20]

By the term "freeing the neck," jurists have always understood the emancipation of slaves (which is a duty of the State!) and ransoming the prisoners of war, be they Muslim or non-Muslim subjects of the Muslim State.

Aid to those who have heavy debts or great burdens may be given in different ways. The Caliph 'Umar organized even a service of interest-free loans.

Expenditure "in the path of God" includes every charitable act, and the jurists from very early times have not hesitated to mention military equipment for the defense of Islam as the first item, since Islam struggles solely for the establishment of the kingdom of God on earth.

As for the wayfarers, one can help them not only by giving hospitality to them, but also by ensuring them physical well-being and comfort, providing means of communication, security of routes, and taking all other measures for their well-being, be they countrymen or strangers, Muslims or non-Muslims.

These items are wide enough to embrace practically all the requirements of a welfare State.

(c) Contracts

Contracts are of many kinds: matrimonial, commercial, agricultural, industrial, and so on. When differences arise as to the meaning of the terms during the execution of a contract, third parties are referred to, such as arbitrators, judges, and other State authorities. This entails questions of evidence

and proof and capacity of the contracting parties including the minors, the insane, the absentees, etc. Again, contracts may be made of free accord or under coercion.

In Islam, contracts require the consent of the parties, or “mutual free-will” as the Qur'an puts it.21 This great principle, common to all systems of law, is a means to mitigating the rigor of another principle that men being equal to one another, nobody owes anything to anybody else. Contracts include among other things the give-and-take of labor. The give-and-take of labor entails division of labor which has several advantages: saving wastage of concurrent labour, specialization for the sake of better production, diminution of preoccupations with the consequent leisure which is essential for all progress, intellectual as well as material. If everyone of us were to rely on his individual resources to procure even the barest necessities of life-food, dress, lodging, etc.-we should be worse off than most of the beasts.

Custom or usage has taught men the advantages of the exchange of commodities. Prices are a technique used to equalize two different kinds of items. They are subject to variation according to the demand and supply of goods, and also to the whims of the sellers. Ordinarily, this latter aspect is a man's private affair; the organization of which he is a member need not meddle with it. But there is a limit even to this liberty. Once a merchant was selling his goods in the market of Medina at a price lower than the one prevalent. (We are not told whether it was a case of dumping or any other mischief.) The Caliph 'Umar ordered him to leave the public market, or else fix the price as charged by other merchants. Neither the inherent liberty of each nor the mutual consent of the parties could deter 'Umar from ordering what he judged to be right in the interest of social well-being.

Contracts may comprise conditions. There is a huge monographic literature on the subject, and it is related that abu Hanifah was the first to compile a special treatise on the conditions of contracts. Here too mutual consent is not the sole deciding factor; law steps in, and enjoins that no condition is to be tolerated which violates legal injunctions of all kinds.22 Lesser of the two evils justifies to interfere in and curtail the inherent liberty of the individual, since in the long run he too will suffer from the same liberty if left uncontrolled.

The same principle of public well-being (maslahat 'ammah) has led legislators to declare inadmissible the contracts made by minors or the insane. Guardians are appointed temporarily or permanently to look after the affairs of those suffering from legal incapacities.

(d) Family Law

Of all the contracts, those of matrimonial relations seem to be the oldest in human society. Here there is no question of exchange of commodities, but rather of usufruct. Muslim Law has relegated matrimony to the level of any other bilateral contract. In pre-Islamic days, people “sold” their daughters to their would-be husbands. In Islam, woman has an individuality of her own as independent and complete as that of man, and is not a chattel even of her progenitive father. For profound social reasons, and in view of the nature of the fair sex, the mutual benefit accruing from married life has been thought to be less favorable

to the wife, who is, therefore, considered entitled to a compensation in the form of a monetary gift settled upon her before marriage (mater), dowry, and maintenance by the husband. The mater, which is a sine qua non of Muslim marriage, is the exclusive property of the wife, giving no right of share to anybody else, not even to her father; and she has full legal powers to dispose of her property–mahr or anything else–the way she likes it (a thing unknown even today in other systems of law).

The question of polygamy may be briefly treated here. According to the generally accepted interpretation of the injunctions of the Qur'an, it may be said that Islam permits polygamy, but which religion does not? Hindu, Jewish, and Parsi religions allow unlimited number of wives to a polygamous husband, and even Christianity is no exception! There is not a word against it in the Gospels and teachings of Jesus Christ; on the contrary, learned theologians (like Luther, Bucer, Melanchthon, and others) have deduced that Christ accepted polygamy as a matter of course as is evident from the way in which he speaks of the marriage of a man with ten virgins, mentioned in the Gospel according to St. Matthew 25:1–12.

Further, it was practiced in early Christianity, and as late as the time of Charlemagne (third/ninth century); even priests could be polygamous.[23] The reference here is not to the mundane rules among Christians and even Muslims to "abolish" polygamy, but to their religious doctrines only. Islam is the first and only religion which has put a limit to the maximum number of wives, and has also provided legal means of prohibiting the practice of polygamy between couples desiring monogamy. Marriage being one of the ordinary contracts, conditions can be stipulated therein.

The lawful conditions are: (i) the husband would remain monogamous for the duration of the marriage with the stipulating wife, and (ii) the wife would have the right to divorce her husband at will. Christianity formally prohibited divorce, and so did the Dharma Sastra. Islam, on the other hand, permits the right to divorce to the husband under certain conditions, and to the wife under contract, and even without a contract, by an appeal to a law-court–khul'. It also allows judicial separation under orders of the court. And if a woman herself does not demand these rights, it is not for the law to oblige her to do so, since there may be occasions when polygamy may even become necessary. Who does not know that after the Thirty Years' War, the Kriegstag of Nuremberg (Germany), in view of the greatly reduced number of the male population due to war ravages, ordered that thenceforth every man should contract marriage with two women?[24]

(e) Commercial Contracts

The most important point in this connection is perhaps the prohibition of interest. Other religions also had done that before, but with little results. They did not attack the root question, which is: How to supply interest-free loans to the needy? Islam characterizes the taking of interest as "a declaration of war against God and His messenger;"[25] in our own time Professor Keynes did not hesitate in his numerous writings to assert that interest more than anything else lies at the root of all social ills. Islam makes a clear distinction between commercial gain and interest on loans.[26]

The difference between them is that one shares in the former (in various kinds of joint-stock companies) both profits and risks, whereas in the latter the debtor has to pay a fixed profit even if circumstances have not allowed him sufficiently to fructify the enterprise. The thesis of Islam is that one should undertake to participate in the eventual risks in order to participate in the profits (al-ghunum ma' al-ghunum). One should certainly take necessary precautions, even create reserve funds for lean years, but the parties to the contract should be ready to divide losses as well as gains.

As to non-commercial and unproductive loans, it goes without saying that private capitalists cannot offer interest-free loans unless they are most generous and pious. Therefore, it is only a welfare government that can and must do so. As a practical religion, Islam noticed this human weakness and, therefore, made it the duty of the government to provide for interest-free loans to the public in the annual budgets of the State, as we have mentioned above while speaking of zakat. The same could also be done on the basis of mutuality.

In fact, interest-free co-operative lending societies have been a great success, for instance, in Pakistan and Hyderabad-Deccan (India) where they have existed for over a century. The members participate in the working expenditure, and the circulation of the money gradually paid by the share-holders satisfies the needs of the members of the society.

The question of co-operative activity for loans naturally leads to the problem of insurance which has existed in Islam from the time of the Prophet himself. It was further developed in later times. Under the term ma`aqil, the constitution of the City-State of Medina, dating from the year 1/622, the Holy Prophet laid down that the individual shall not be required to shoulder two kinds of responsibilities alone: (1) payment of blood-money in case of homicide, and (2) payment of ransom for prisoners of war. It was the treasury of the tribe that was to bear these two obligations.

Should the funds of the tribe, periodically contributed by its members, be not sufficient at a given moment, the parent tribe and in the last resort the Central Exchequer must come to aid. In the time of the Prophet insurance against fire had little importance. Incidents of fire occurred only in living quarters which were built by the inhabitants themselves at meagre expense. In later times, marine insurance was introduced among the Muslim merchant class. The Caliph 'Umar is reputed to have reorganized the insurance units, and according to al-Mabsut of al-Sarakhsi, employees of the same governmental department, members of the same cantonment, etc., began to function as units. In still later times, we see insurance practiced by guilds of the same profession in a given locality.

It may be pointed out that unused contributions to such units need not lie idle; they could be utilized for fruitful commerce to build up reserves, and eventually profits could be divided amongst the members of the units. There has been an attempt in recent times of this kind of insurance among the owners of automobiles of a big city, insuring against damages both to their cars and to their persons. Islam has not left this kind of self-help only to a group of capitalists but has proposed it for everyone as a measure against damages in addition to all that the government may do.

(f) Administration of Justice

As explained above, the administration of justice is a necessary concomitant of contractual relations in a society. Inexpensive, prompt, and fool-proof-such is the ideal of justice in Islam. In pre-Islamic days, there was declaration of rights by arbiters, but no provision for enforcement. The Holy Prophet gave Medina a constitution which made the execution of judicial awards a central subject leaving it no longer to tribes, much less to the individuals winning their cases. Further, in pre-Islamic Arabia there was no law but only the common sense of the arbiters. There was also inequity in the administration of justice. Powerful tribes, for instance, paid half of the blood-money, and value of women was taken as half the value of men. The said constitution rectified these defects.

Islam established equality not only among Muslims and Muslims, but also among Muslims and non Muslims, and cases are recorded of the classical period, in which Muslims were executed for having murdered non-Muslims. Evidence was also demanded from the parties concerned. In the very first year of the Hijrah, the Qur'an[27] made it obligatory to have written documents of contracts. During his audiences, the Prophet would inquire about the character of the witnesses before admitting their evidence. In later times, every locality established archives of the entire population, constantly revising remarks on personal character. Whenever a man presented himself as a witness, the archives were consulted to admit or reject his evidence. Further, near relatives were declared unfit to give evidence in favor of their kinsmen. In almost all cases, no less than two witnesses were required.

One more peculiarity of administration of justice was the autonomy conceded to non-Muslim inhabitants, the principle being, for instance, Jewish parties, Jewish Law, Jewish courts, and Jewish judges. In case parties belonged to different communities, a Jew versus a Christian or a Muslim, the conflict of laws necessitated special arrangements; in most cases parties agreed to go to the Muslim courts.

3. Penal Laws

The administration of justice described above applies mutatis mutandis to penal cases. It appears that ordinarily capital punishment was not enforced unless reference was made to the Caliph (Central Government).

In his celebrated farewell address during the last pilgrimage, the Prophet chartered human rights under a triple division: person-property-honor, and affirmed their sacrosanct character once for all.

Let us refer to two verses of the Qur'an regarding punishment:

(a) ***"Whoever transgresses against you, so transgress against him with the like of his transgression against you? …"*** (***2: 194***).

(b) ***"The compensation of an evil is an evil like thereof. …"*** (***40: 40***).

The wording of these verses implies that punishment is also regarded as transgression and evil. Although many verses exhort the victim to pardon the transgressor, yet retaliation, a time-honored institution in human society, is allowed as a necessary evil, though never beyond the measure of the original crime and this too perhaps only so long as a suitable cure for the ailment of criminality has not been found.

The penal law of Islam has certain peculiarities. First, it makes a distinction between crimes of fixed penalties (hudud), and those which allow a certain latitude to the judges. The crimes of hudud refer to person, property, and honor. According to the classical jurists, they are eight in number: (a) apostasy, (b) homicide, (c) illicit sexual intercourse, (d) false accusation against the chastity of a woman, (e) alcoholic drinks, (f) highway robbery and theft, (g) war, and (h) infliction of injuries.

(a) Apostasy

In all old and most new legal systems treason is awarded capital punishment. We have seen that Islam has rejected color, language, land, and similar other accidents and hazards of nature as the bases of "nationality," and adopted instead the "identity of outlook on life" as the foundation to build a world-wide community. Even with its zeal for religious propagation, Islam admits no compulsion in religion,28 but intends to create a rigorous discipline among those who voluntarily enter its fold. Such seems to be the explanation of considering apostasy as a crime. At times one feels that Islam has needlessly provided for that, since apostasy among Muslims is practically non-existent.

(b) Homicide and Corporal Damages

In such cases lez talionis is not the only alternative: injured persons and the representatives of the murdered person have been given the right to blood-money and appropriate monetary compensation. The blood-money imposed by the Holy Prophet approximately amounts to the maintenance of a man for thirty years (expected life of the victim if he were not murdered!). One hundred camels is the traditional blood-money. During the battle of Badr, when the Prophet heard that the enemy slaughtered one day nine and the next day ten camels for consumption, he concluded that they numbered between nine hundred and one thousand combatants. If one camel suffices for one hundred days, one hundred camels can do so for about thirty years.

(c) & (d) Sexual Transgression and False Accusations Affecting the Honor of Women

Consent of the parties of adults in sexual relations, even though unmarried, gives them no immunity from the operation of the Islamic penal code. This strictness in Islamic Law at least deters men from behaving like dogs and asses. Despite this rigor the Prophet of Islam has been more indulgent than Jesus Christ (as described by the Gospel according to St. John, 8:3ff.). The Qur'an requires four eye-witnesses for a sexual crime (as against the normal two), or confession on the part of the culprit. Islam also intends to

purify society of scandalous talk; if anybody talks of the sexual immorality of a woman, he has to produce at least four eye-witnesses, otherwise he is himself to be given eighty stripes and he permanently forfeits his right to give evidence before a tribunal.[29]

(e) Alcoholic Drinks

Though the Qur'an has strictly prohibited the use of intoxicants, it has prescribed no definite punishment. The Holy Prophet, however, used to administer forty strokes with his sandals to the intoxicated persons. The Caliph `Umar seeing the expansion of the evil in Muslim society said, "Since intoxication leads to obscene talk and false accusations against the honor of women, I shall henceforth give eighty strokes." (This is the Qur'anic punishment for speaking against the honor of women.) Non-Muslims including the non-Muslim wives of Muslims are, however, exempt from this penalty. But if the representatives of the non-Muslims in a parliament agree on total prohibition, it is to be enforced on them as well.

(f) Robbery and Theft

Crimes against property have been provided with severe penalties. As to the results, it may suffice to refer to a case from contemporary history. Who does not know the pillaging of the pilgrims, during the time of Sharif Husain? When ibn Sa`ud got power in the Hijaz, he reinstituted the Islamic sanctions against theft, with the result that people began to feel that they were given the security of the times of abu Bakr and 'Umar. In 1359/1939, part of the baggage of a lady pilgrim was found missing at an intermediary station between Mecca and Medina.

The police were alerted. Even after two weeks of investigation, the police were unable to trace the thief, but the Sa`udian Government ordered payment of the value of the stolen goods to the victim and the amount was immediately paid. The much maligned punishment of cutting the hands of a thief is waived in the case of theft committed by the needy and according to many jurists also in the case of children and the mentally diseased.

(g) War

As everybody knows, international law means the rules that govern relations of States in times of war, peace, and neutrality. If suppression of theft and robbery requires partial mobilization of the forces of order and security, foreign invasion requires the same measures on a larger scale. Hence the inclusion of international law by Muslim jurists in the section on penal laws, and its treatment immediately after the section on highway robbery. Apart from its logic, the important point to note is that international law forms an integral part of the Islamic Law and is not left to discretion. In the international law the accused has the same rights of defending his conduct before a tribunal as, say, a robber who is captured and tried. An old author aptly says: "Among the happenings of a certain time a war is like sickness in contrast to peace and security which resemble health. It is necessary to take steps against warlike activities to preserve peace as it is necessary to fight against disease."[30]

(h) Infliction of Injuries (Mazalim)

Under this category fall the crimes other than those determined by the hudud. Judges are given wide latitude for inflicting appropriate punishment according to the circumstances of each case. Nevertheless, the ruler has to prescribe certain rules defining the discretionary powers of the judges.

H – Muslim Contribution To Law

1. However unbelievable it may look at first sight, it is a fact that the science of law, in its theoretical sense, did not exist in the world before Islam.

Law did indeed exist in Rome, Greece, China, India, Mesopotamia, Egypt, pre-Columbian America, and elsewhere, yet it was Imam Shafi'i (b. 150/767) who first thought of the science of law or jurisprudence as case-law. His book al-Risalah fi Usul al-Filth speaks of the origins and sources of Law, alt also of the methods of legislation, interpretation and application of law and many allied topics. Al-Shafl'i gave this science the expressive name usitcl al-Filth (the roots of Law) in contradistinction to the general laws of a land, which were named as "branches" (/uru') shooting out from these roots. Some generations afterwards, the Muslim jurists created a new science, called khilafiyyat, i.e., "comparative Law," restricted to the study of the different schools of Muslim Law and dealing with the grounds and consequences of differences amongst the various jurists.[31]

2. The principle of intention, in spite of much research, has not been found in earlier laws. This was first introduced by the celebrated saying of the Holy Prophet: "Actions are (to be judged) by intentions (inns-ma al-a'mal bi al-niyyat)," quoted by al-Bukhari, Muslim, and all the other authorities, the echo of which we hear in the celebrated address of the Prophet given during his last pilgrimage.

3. The idea of ethical value as the basis of legal injunctions is also unique in the legal history of the world. The credit of initiating it goes to the Qur'an.

4. International law has existed in the world since times immemorial, yet in antiquity it was neither international nor law. For, ordinarily, it was reserved only for resolving disputes of a country with certain other countries and nations only; Islam extended its scope to the entire world, without making any geo-graphical and political limitations. Again, in antiquity it was not considered to be law, but formed part of a country's political discretion; Islam made it a part of Law. This is testified by the fact that all books of Fiqh from the very beginning have dealt with international law under the section named Siyar. Further, before Islam, the subject was treated in books of politics and manuals of statecraft like the Artha Sastra of Kautilya, or the Politics of Aristotle. The Muslims made it an independent branch of Law, and devoted special monographs to it, the earliest of which is attributed to abu Hanifah. The works of the pupils of this master, abu Yusuf and Muhammad al-Shaibani, have come down to us and have partly been printed.[32]

5. The first written constitution of a State in the world, as promulgated by a sovereign, came from the

Holy Prophet of Islam. The text constituting the City-State of Medina in the first year of the Hijrah (622) has been preserved in toto, and comprises fifty-two articles, dealing with such questions as independence vis-a-vis the rest of the world, war and peace, administration of justice, legislation, religious tolerance with regard to non-Muslim subjects, social insurance, asylum, naturalization, etc.[33]

6. Lastly, it is interesting to note that the Muslims as a people always kept legislation (and so also judiciary) separate from the executive. The development of Muslim Law as deduced from the Qur'an and the Hadith has always been the work of private savants and jurists. Tradition has insisted that the State should not interfere with this work, much less monopolize it. It is the freedom of juristic judgment which creates conflicting opinions and alternative solutions, and these provide the coming generations with raw material for sound judgment. These conflicting opinions have given rise to different schools of jurisprudence; yet in one's comparative study of international law in Sunnite, Sh'i'ite, and Kharijite schools and their sub-schools one is agreeably surprised that, despite their water-tight divisions, there are practically no differences of vital significance.

I - Interactions

Ernest Nys (in his Les Origins du droit international, which has also an Urdu translation published by the Osmania University) shows the great influence of Muslim international law, particularly on Spanish Christian writers, who first inaugurated the study of international law in modern Europe. Later on, the Dutch Hugo Grotius, who is considered to be the father of international law, also refers to Muslim practices. Many savants allude to the Muslim influence on the famous Code Napoleon, the basis of modern Western legislation. Many provisions of the Islamic law of inheritance, divorce, etc., are now being adopted by and necessary modifications made in Hindu Law by the modern Indian legislature.

Foreign elements in Muslim Law have already been shown in the section on “Sources.” Far from being the chief determinant of the growth of Muslim Law, as it is sometimes claimed, Roman law in its influence on Muslim Law has been of the least significance.[34] No early Muslim jurists, except al-Auza'i hailed from an ex-Byzantine territory. All of them were either the Hi- jazian Arabs or belonged to Persian families which had lived as Muslims for at least two generations. Even al-Auza'i was not of Syrian origin for his father was among the captives brought from Sind.[35] And, therefore, he could not be suspected of having inherited any part of the Byzantine traditions.

J - Further Possibilities

A modest yet practical procedure to adapt Muslim Law to present conditions has been suggested in the colloquium recently published by the “Law Number” of the Karachi monthly Chiragh-i Rah. Muslims should not remain content with their past, however glorious that past. The raison d'etre of their existence is their constant struggle to become the very best community, a model for the whole of humanity-the community enjoining the good (ma'ruf, interdicting the evil (munkar), and believing in God.[36]

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2. Al–Qur'an, iii, 104, 110, 114; vii, 157; ix, 67, 71, 112, etc.
3. Abu Dawud, Aqdiyyah, 6
4. Perhaps it will be useful to remind that Islam in the pre–Hijrah period had no temporal authority and the Prophet proceeded gradually from suggestion to recommendation before finally ordering and prescribing sanctions. In the Meccan period there was neither a fixed amount, nor a fixed time of the year, nor even an organization to collect and disburse the taxes; all these measures were taken during the Medinese period. The sense of the terms with regard to taxes underwent a profound change when “charity” became a State duty; the Qur'an and the Hadith retained the old terms, with the advantage that the people were persuaded to believe that to pay tax to the government was no less meritorious in the sight of God than charity and almsgiving, and that zakat was the best kind of charity. The Caliphs retained the same terms.
5. Al–Qur'an, vi, 90
6. ‘Ibid. ii, 246ff.
7. “And there are some men who say: Our Lord, give us a good in this world and also a good in the next world, and deliver us from the torment of the fire. Such shall have a portion of that which they have gained” (al–Qur'an, ii, 201–02). “Seek the abode of the hereafter in that which God hath given thee and neglect not thy portion of this world ...” (ibid. xxviii, 77).
8. Al–Qur'An, xxxiii, 21; lix, 7, etc.
9. As to the references and details of this and the following statements of the paragraph, see Hamidullah, Sahilah Hammam Ibn Munabbih (both Arabic and Urdu editions), Introduction.
10. Al–Qur'an, iv, 24.
11. Ibid. vi, 90.
12. Ibid. ii, 75, 79; iv, 46; v, 13, 41.
13. Al–Bukhari, Kashf al–Asrar'ala Usid al–Bazdawi, III, 262.
14. Idem, Sahih, Chap. “iman,” section 44.
15. Consult the very interesting book Poll Tax in Islam by Dorman.
16. Abu Yusuf, Kharaj (Bulaq edition), p. 78.
17. See for references and discussion on this point, Hamidullah, Muslim Conduct of State, Lahore, 1953, pp. 17–38.
18. Hujjat Allah al–Balighah, Vol. I, Chap. “Asrar al–Saleh,” cited in Introduction to Islam, Centre Culturel Islamique, Paris
19. Al–Qur'an, ix, 60.
20. Al–Ahkam at–Sultaniyyah, Chap. “Zakat.” (The author was a contemporary of al–Mawardi, and both composed their books with the same title.)
21. Al–Qur'an, IV, 29.
22. Based on a saying of the Prophet: “Muslims abide by the conditions they have contracted, except the condition which permits a Haram (forbidden thing)”; cf. al–Tirmidhi, Chap. “Ahkam,” 17, etc.
23. Edward Westermarck, History of Human Marriage, French tr. Gennep, Paris, 1943, Vol. V, pp. 54–56; Encyclopaedia

Britannica, “Polygamy.”

24. Ibid.

25. Al-Qur'an, ii, 279

26. Ibid., ii, 275.

27. Ibid. ii, 282.

28. Ibid., ii, 256

29. Ibid. xxiv, 4.

30. Hasan ibn 'Abd Allah, Athar al-Uwal fi Tartib al-Duwal, compiled in 708 H., p. 167.

31. See Hamidullah, “Used al-figh'm tarihi,” in the Islam Tetkikteri Enstiusu Dergisi, of Istanbul University, II, 1956-57, pp. 1-18. Also the French tr., Annates of the Faculty of Law of the same University, 1959.

32. Extensive literature has been published in European languages during the last few decades, references to which can be found in the bibliography given in Muslim Conduct of State by Hamidullah, Lahore, 1953.

33. It goes to the credit of Wellhausen to have made this constitution known to the Western world for the first time, under the title Gemeindeordnung von Medina (published in Vol. IV of his book Skizzen and Vorarbeiten). For English tr., see Hamidullah, “The First Written Constitution of the World,” Islamic Review, Woking, 1941. For Urdu tr., see his 'Ahd Nabawi ka Nizam-i Hukmrdni. A more recent and detailed discussion and analysis is given in Le Prophete de l'Islam, 8a vie et son oeuvre, Paris, 1959. For the Arabic text, see al-Watha'iq al Siyasiyyah.

34. There is now considerable literature in favor of this thesis. For instance, Nallino's Italian article (English tr. “Impossibility of the Influence of Roam Law on Muslim Law” in the Voice of Islam, Karachi, Vol. I); Bousquet, “Le Mystere do la formation et des origins du Filth,” published in Reveu Algerienne, Alger, July-September 1947, Urdu translation in Ma'ari f, Azamgarh; see also Hamidullah,

35. Al-Dhahabi, Tabagat al-Huffaz, s.v. “Auzh'i.”

36. Al-Qur'hn, iii, 110.

Part 4: The Sciences

Chapter 62: Geography

Philosophy in the past ages was not merely an academic subject studied by specialists; it was a living influence which guided men in their ideas about the universe and it included a variety of fields covering theology, law, society, and the sciences. To the Muslims during the Middle Ages philosophy and its various disciplines were all-embracing. Geographic ideas were inseparable from philosophic thinking as they were basic to a widening of horizons. Indeed, interest in geography is as old as recorded human history. This had its roots in ancient folklore, poetry, and travel. The geographical instinct in one form or another developed early among organized human communities, and the people of the ancient civilizations possessed a variety of geographic knowledge.

It is well known to historians that the culture of Greece was preceded by a continuous and composite culture in Western Asia and Egypt and that this culture in its turn was not the product of the genius of

any one people, but was shaped by an ever-increasing human intercourse and was the fructification of a long evolution. Thus, Greek geographical ideas too had a basis in the past and in the experience of other peoples. Philosophy and poetry formed the tap-roots of the geographic knowledge of the Greeks. Similarly, in Arab times both Greek ideas and Islamic philosophy and literature were potent factors in the evolution of geographic concepts.

Early Greek contributions to geography were as varied as they were brilliant. Later on, Alexander's campaigns were of the nature of geographical exploration under arms. In the course of time the center of scientific activity shifted to Alexandria. Science and geography continued to flourish in the Greco-Roman age, though under somewhat different cultural atmosphere. In fact, the Greco-Roman culture was subjected to a terrible ordeal. It witnessed one of the greatest intellectual conflicts in history, the clash between Greek ideals and the various oriental religions, chiefly Judaism and Christianity.

But before Christianity could triumph, the great geographer Ptolemy (c. 150 A.D.) had accomplished his work of coordinating the sum total of geographic knowledge up to his time, though a little earlier Strabo (c. 19 A.D.) had contributed even more brilliantly in terms of geographic analysis. He had also indicated the extent of the knowledge of the Romans about the land and people of Arabia. Describing Gellus' expedition in 25 B. C. to Haura on the Red Sea coast to the borders of Hadramaut, Strabo says that the Emperor Augustus was also influenced by reports of the wealth of the Arabs and their trading activity in spices, aromatics, and precious stones, and that he desired either to befriend or subdue such opulent people.[1]

By the third century A. D. distinct changes had taken place in the political, cultural, and religious spheres. The Roman Empire came near to utter breakdown. The legions, never too many for the long frontiers and made increasingly heterogeneous by local recruiting, lost their sense of mutual cohesion and failed to check stronger outside attacks. Many emperors rose and fell like ninepins, un-mourned, unsung. Rome was sacked by Goths in 410 A.D. By the middle of the sixth century A. D., Justinian's final efforts at consolidation of the Roman power had failed.

The commencement of the middle Ages is important in the history of science in general and geography in particular. A general retrogression is witnessed and gradually the so-called “Dark Age” of geography set in. It is common to begin the middle Ages from Constantine, but Paganism was tolerated almost until the division of the Roman Empire in 395A.D. The tradition of pagan literature and science, however, continued much longer, at least until Justinian closed the school of Athens.

The triumph of Christianity led its adherents to consider scientific research not only a useless occupation but also a pernicious one. Alexandria had lost its noble place as the center of scientific activity, and Egypt for the Christians had become a land of new wonders as the first home of hermits or desert men or monks; some visitors had no interest in anything else and dismissed the pyramids as mere “Granaries of the Kings.”[2] A sailor turned monk took a hand at geographical writing and produced the crankiest of books, the famous Christian Topography, in 547 A.D.

The main purpose of this erudition was to disprove the pagan notion that the earth is a globe. Cosmas hailed from Alexandria and had in his younger days traded in the Red Sea and even beyond. Cosmas' earth was flat, rectangular, and oblong, twice as long from east to west as from north to south, and was surrounded by ocean. A high mountain rose in the north behind which the tiny sun played hide and seek to bring forth days and nights. Beazley rightly called Cosmas' work a “systematic nonsense.” Saint Ambrose saw no profit in investigations about the earth. Science, geography, and all such pursuits were dubbed as magic art. The spherical shape of the earth and the existence of antipodes were favorite subjects of ridicule.

Thus, the geography of the early centuries of the Christian era was a fascinating mixture. Perhaps it seldom represented the full amount of contemporary knowledge and was largely made up of traditional elements, Christian and classical, blended in various proportions. The first came from a literal reading of the Scriptures and other-worldly attitude of the protagonists of the Church. It appears that Christianity spread first through the urban commercial population round the Mediterranean, whose lingua franca was Greek. It was only later on that it penetrated into the hinterland and overspread into the vast rural areas of outer provinces. Thus, Greek science received a frontal attack in its most important centers. In this refutation of earlier knowledge, interest in science and rational geographic concepts could be retained only by a handful of people in Christendom. Only the Nestorians, the Monophysites, and some of their adherents kept a semblance of Greek science preserved.

During the first/seventh century there arose an epoch-making movement from the depths of the Arabian Peninsula. It was Islam. It brought about the establishment of one of the greatest empires the world has seen. The Arabs conquered a large number of peoples who were superior to them in culture. Nevertheless, the conquerors did not lose their national characteristics and subjected Syria, Mesopotamia, Egypt, and North Africa to their ethnographical influences.

As soon as early conquests were over and cultural contact was established with Greek and Indian knowledge, Muslims became imbued with tremendous curiosity and took up the cause of science with enthusiasm at different centers of their culture. Early Islamic attitude to science was one of tolerance, even enlightened interest. It is evidenced by the continuance of the academy at Jundi-Shaper as a scientific center in the Muslim Empire. Scientists from this center in Persia were welcomed at Damascus, the capital of the Umayyad Caliphate. These men were mostly Christians and Jews.[3]

Further, the Arabs were traders, travelers, and lawyers, and they had somewhat positive minds and, therefore, practical sciences appealed to them. Arabic was suitable for exact and precise sciences and lent itself more easily to the formation of technical terms. Geography especially appealed to them because of its utility to serve the needs of commerce, the division of land, travel through the deserts, knowledge of the plants and animals, and to find the azimuth of Mecca and the phases of the moon.

The Arabs had a traditional interest in matters concerning geographical knowledge. Even before the birth of Christ and after, they were among the foremost traders and navigators of the Arabian Sea, Indian

Ocean, and Chinese waters. The Arabic language of that period abounds in words for ships, boats, condition of the sea surface, storms, heavenly bodies, and commodities of exchange and trade. These activities were greatly influenced by the geography of the Arabian Peninsula and its midway position between the East and the West and the littoral situation of all its fertile lands in Yamamah, Oman, Bahrain, the Yemen, etc. Even the Hijaz, though largely arid, lay along the trade-routes from the Arabian and Red Seas to the Mediterranean world.

Pre-Islamic poetry contains references to navigation and sailings, and the Holy Qur'an itself abounds in navigational terminology and descriptions of conditions of the sea and ships and boats used. There was a close relationship between land journeys as well as between sea voyages and the knowledge of stars and other heavenly bodies. The inland Arabs with scanty agriculture and nomadic economy were always face to face with such problems as sources and extent of grazing opportunities, distribution of desert plants and animals, and the nature of geomorphological features. Therefore, Arab interest in geographical matters was a deep one. It needed various stimuli such as extension of territorial influence, expanded trading opportunities, greater cultural contacts, and a vigorous religious zeal to widen the frontiers of geographic knowledge.[4]

Within a century of the advent of Islam, the Arab victories brought them a rich reward in the conquest of prosperous lands and cultured communities, from the Mediterranean to India and Central Asia. On the one hand, the Arabs became the heirs to the Hellenistic culture for which a way was earlier opened by the conquest of Alexander. On the other, they reached the homeland of Indian culture and Buddhist and Indian thought. It is rightly assumed that the Arabs became the pupils of and successors to the Greeks in science and, through their own efforts and ingenuity perfected it for the future protagonists.

Indian influence in the first instance was the product of a continuing commercial contact via the sea-route from Ujjain, the town of Brahmagupta (c. 6/628), the famous writer of the astronomical manual Brahma Siddhdnta. Muslim conquest of Central Asia brought them into touch with Buddhism and old Greek colonies in the regions of Bactria, Sogdiana, Farghanah, and Merv.

The establishment of the 'Abbaside Caliphate in 132/750A.D. ushered in an age of glory, power, pomp, splendor, culture, and prosperity for the peoples under Muslim rule. Scientific activity took its birth and in this process the inauguration of translation activity in Baghdad, systematically organized under a Translation Bureau (Bait al-Hikmah), was a tremendous step forward. The Bureau had a library and permanent personnel, and translators were commissioned from far and wide. Manuscripts were even paid for their weight in gold. The main aim was to make available in the Arabic language the wisdom and the science of the Greeks and others.

Translations also included works in many sciences by an array of able translators. Among the sciences which received special attention were physics, meteorology, mineralogy, botany, astronomy, and geography. The early phase of translations was concerned more with medical and philosophical works, but later on mathematical, astronomical, and geographical subjects received more attention. The Caliph

al-Mamum took active interest in the work of his translators and scientists. Among his great achievements were the measurement of a degree of the earth's arc on the plains of Sinjar, west of Mosul, and the construction of a world map. Both the tasks were of great geographical significance and were accomplished by a team of scientists.

The period of early translations was of great importance to the developing intellectual and scientific life of Muslim society. The Greek writers, who influenced the Arab scholars most were not poets, historians, or orators, but largely the scientists in various fields such as mathematics, astronomy, medicine, philosophy, and geography. For instance, the scientific works of Aristotle received far greater attention than did the writings of Plato and Socrates.

Before the content of Muslim contributions to geography is examined, a few points must be clarified. The birth of scientific activity under Islam has indispensable relevance to Muslim geographic thinking. The passage of Greek science to the Arabs revealed to them Hellenistic geographic concepts which had received slashing denunciations from orthodox Christian writers. Therefore, the first task of Arab geographers was the revival of the older science.

Muslim geographers held Ptolemy in high regard and greatly valued his monumental work. But he did not escape their criticism, and numerous improvements in his concepts were suggested. Even Ptolemy was not able to combine the mathematical with the descriptive and statistical methods in geography. As regards the latter, Strabo was far more alive and was more critical in his writings than Ptolemy. These traditions were passed on to Arab writers and, therefore, quite a number of Muslim geographers can be categorized under them. But Arab geographers branched out into so many new directions and were so prolific in their output that a somewhat broader classification of their contributions is called for. Muslim interest in geography was stimulated by a variety, of factors such as environmental, religious or spiritual, administrative, political, and commercial.

Muslim military campaigns were well planned and superbly executed and the generals and commanders collected much geographical data before conducting their operations. The organization of administration, collection of revenue, and appraisal of resources of the newly conquered territories required detailed geographical information. It is said that the great Caliph 'Umar, hearing of the conquest of new lands, asked a scholar to describe to him the lands of the earth, their climates and positions, and the influence which land and climate exert upon their inhabitants.[5] Both scholars and religious leaders considered geography a laudable pursuit, as is borne out by the remark of Yaquit that as a science geography was pleasing in the eyes of God. Even the orthodox al-Ghazali believed that the votaries of science will find the road to paradise easy. Muslim religious interest in the determination of latitude and longitude of places and in the diurnal movement of the sun was indispensable both in connection with the time for daily prayers and the geographical co-ordinates of Mecca. With the expansion of the dominions of the Muslim Empire, commercial activity increased and geographical information of different types became vital for its growth and development.

Regional geography received early attention and contained an enormous wealth of details and information. It developed its own traditions, and the variety in approach to it and the ingenuity of the individual geographers make many contributions to it a fascinating reading. The writings of notable travelers, the specialist studies of the topographers, and the critical works of the sociogeographers lend an immense variety and color to Muslim geography. Therefore, it may be convenient to examine the Muslim contribution to geography under the following headings:

(A) General and Regional Geography.

(B) General Treatises and Scientific Geography.

(C) Mathematical Geography.

(D) Cartography and Map-making.

A - General And Regional Geography

Muslim interest in general geographical writing developed early. This class of geographical writing has a wide range and includes some of the earliest contributions in this field. General geographical descriptions of the Muslim world were a favorite theme and in view of the needs of administration and extension of the postal services many works were written as "Route Books." Diaries and travel accounts were yet another category of geographical writing. As a result of the unsatisfactory basis of descriptions in relation to hypothetical "Climatic Divisions" in parallel latitudinal strips (a Greek legacy) many Muslim geographers felt the necessity of describing the dominions of Islam on the basis of regions of which they possessed more specific knowledge. It may be said to be the beginning of a regional consciousness.

Among the earliest known works dealing with geographical matters are those of 'Abd al-Malik ibn Quraib al-Asma'i and Hisham ibn Muhammad al-Kalbi. Al-Asma`i of Basrah (123-216/740-831) wrote on plants, animals, and the evolution of human society. Al-Kalbi (d. 205/820) was an authority on the history of pre-Islamic Arabia and it is said that his work Kitab al-Nawadir 6contained observations on many geographical topics. Similarly, one of the early treatises on agriculture was ibn Wahshiyyah's (c.288/900) book on Nabataean agriculture. Abu Yusuf Ya`qub al-Kindi (c. 260/873-874), though primarily a philosopher and physicist, wrote a geographical work called Rasm al-Ma`mar min al-Ard (Description of the Inhabited Part of the Earth).

But the work of Muhammad ibn Musa al-Khwarizmi (d. 236/850) laid the foundation of Arab geographical science. By writing Kitdab surat al-Ard (Treatise on the Face of the Earth) he syncretized Greek and Hindu knowledge. He was a mathematician of great repute and is said to have collaborated in the degree measurements ordered by Caliph al-Mamun. He improved Ptolemy's geography, both as regards the text and the maps. His scientific attainments are universally acknowledged by the Orientalists. Another early geographical work which was concerned with Arabia was that of Arram ibn al-Asbaj al--

Sulami (c. 231/845) who wrote Kitab Asma' Jibal Tihamah wa Makaniha dealing with the mountains of Tihamah in Arabia. This work was mentioned by al-Sirafi, and another book by the same author bearing the title Jazirat al-'Arab was mentioned by Yaqut in his "Dictionary of Learned Men" (Mu`jam at-Udabu') [7]

1. The Route Books

After the early geographical writings mentioned above had appeared and the initial phase of translations had come to an end, an interesting class of geographical literature was produced which is contained in the so-called "Route Books" (Kutub al-Masalik w-al-Mamalik). Quite a tradition developed in the writing of these route books and many later authors copied the technique of the earlier masters. In this respect, ibn Khurdadhbih (c. 300/912) blazed a new trail with his famous Kitdab al-Masalik wa-al-Mamalik (A Book on Routes and Kingdoms). He provided an excellent summary of the main trade routes of the Arab world and also wrote descriptions of China, Korea, and Japan. The work served almost as a source for later writers. Unfortunately, only an abridged version of the book is extant.

Al-Marwazi (d. 274/887) also wrote a route book which was mentioned by ibn al-Nadim and Ya'qub. Sarakhsi (d.286/899), who was a pupil of al-Kindi, gave the same title to his geographical work and abu al-Faraj al-Baghdadi (d. 310/922) compiled Kitab al-Kharaj (Revenue Book) dealing with land tax and postal services in the context of the geography of the Arab Empire. Al-Jaihani (fl. c. 280-295/893907), the learned minister at the Samanid Court, wrote another revenue book replete with geographical explanations, and it is surmised[8] that it was one of the source materials for al-Idrisi. Abu Zaid al-Balkhi (d. 322/933) produced another route book along the traditional lines, but his real fame as a geographer rests on his somewhat more scientific contribution, namely, Kitab al-Ashkal or Suwar al-Aqalim (Figures of the Climates).

Al-Istakhri (fl. c. 339/950) followed in the footsteps of his senior contemporary al-Balkhi by writing a similar book and using the technique of explaining maps by the accompanying text. Ibn Haugal revised and rewrote Istakhri's book with considerable additional information in 367/977. These three geographers form an important group who combined their writings of descriptive geography with cartographic work and scientific analysis and, therefore, this category of their work will receive mention later on.

In Spain, al-Bakri (d. 487/1094) of Cordova used the same technique and method to write his route book and geographical dictionary notable for their useful information about Europe and North Africa.

2. Books of Countries and Dictionaries

The route books were written from an administrative angle but they invariably developed into geographical treatises. They were generally concrete, accurate, and detailed.[9] Closely related to the route books, yet enlarging on their scope and subject-matter, were the large number of "Books of Countries" and geographical dictionaries and gazetteers. Among the early writers of such tracts and a

notable Arab geographer and historian was al-Ya'qubi who wrote Kitab al-Buldan (Book of Countries) in 278/891, giving a wide range of topographical and economic details and occasionally bringing out the relationship between physical factors and human activity.

Topographical details about the cities of Kifah, Baghdad, Samarrah, and Basrah and regional descriptions of many areas in Arabia, Syria, Egypt, Nubia, and North Africa, are some of the outstanding features of this book. His pioneer work as a geographer deserves high praise, and it is not surprising that modern European writers often call him the father of Muslim geography. Shortly before Ya'qubi an outstanding historical work with many geographical observations had been written by al-Baladhuri (in 256/869) under the title Futuh al-Buldan (Conquests of Countries). This work typifies Muslim interest in the history and geography of the newly acquired territories. Al-Hamadani's "Book of Countries" written in 290/902 was utilized by notable geographers like Mas'ndi and Yaqut; unfortunately, it is lost. A contemporary of al-Hamadani was ibn Rustah (fl. c. 291/903); his encyclopedia al-A'laq al-Nafisah dealt with geographical matters in its seventh volume. He discussed a variety of topics including the extent of the earth, seas, rivers, climate, founding of Mecca and Medina, and the regional geography of Iran.

Ibn Rustah's account of the road system of the empire and particularly of the great Khurasan road remains outstanding for its clear details and geographic implications. A few years later ibn al-Ha'ik (d. 334/945) presented his regional geography of Arabia in Kitab Jazirat al-'Arab dealing with physical features, minerals, races, tribes, and settlements. He also contributed a semi-geographical work al-Ikhil on the archaeological aspects of the Yemen. Muhallabi (375/985) was the author of an outstanding geographical work dealing with the Sudan. It was the first work of its kind for this remote region and formed Yaqut's main source for the geography of the Sudan.

An interesting geographical work of the fourth/tenth century written in Persian was entitled Hudud al-'Alam (c. 372/982) by an unknown author. It is meant to be a world geography on a regional basis and was probably written as a preface to a map. Minorsky has produced an excellently edited and annotated version of this notable work.[10]

The western wing of Islam in Spain also produced many contemporary geographers who wrote route books, books of countries, and works of regional descriptions. Al-Tariqi (d. 363/973) wrote on North Africa. Al-Bakri of Cordova (d.487/1094) was a celebrated geographer who compiled a geographical dictionary, Mu'jam ma Ista'jam as well as a route book. These works incorporate fresh material on Central and Eastern Europe and North Africa. Al-Zuhri of Granada (c.532/1137) was the writer of a notable work, Kitab al-Jaghrafia (Book of Geography). It appears that al-Zuhri was able to utilize the work of the team of geographers of the reign of Caliph al-Mamun. Al-Munajjim (d. 456/1068) was the compiler of a geographical dictionary which both al-Idrisi and ibn Khaldun mention as one of their source materials. And there were many lesser lights who followed these masters in compilation.

But the art of depicting geographical and associated information in the form of a dictionary attained its highest form from the pen of Ya'qub Hamawi. His work was done almost at the crossroads of history,

shortly before the Tartar invasion engulfed the eastern lands of Islam. After considerable travel in his younger days and study in several libraries, he produced his monumental geographical dictionary known as Mu'jam al-Buldun in 621/1224. This great work contains a geographical gazetteer, a regional world geography, and much topographical, historical, and archaeological information. It deals with geography in the broadest manner. His other well-known work Mu'jam al Udaba', dealing with lives of learned men, is also replete with geographical information. Yaqut utilized a variety of sources including many of those which are now extinct. His dictionary 'contains a treatise dealing with geography in general from many points of view.

3. Diaries and Travel Accounts

Travel has always been the easiest and the most natural means of acquiring and propagating geographic knowledge. In the medieval period of Islam travel was promoted in many ways. Religio-cultural affiliations with far-flung parts of the world, curiosity, commercial enterprise, and above all the urge for pilgrimage excited widespread interest in travel. Thus, Muslim travel literature in the shape of diaries and descriptions and experiences of journeys contains a treasure-house of geographical information.

For Muslims, the pilgrimage to Mecca was not a matter of choice; it was their positive 1luty within the limits of possibility to undertake it. Mecca was the ever-present magnet to attract their thoughts and thus there ran into Arabia a constant stream of visitors from all parts of the Islamic world. The hay)' every year was a unique international assemblage by which people from distant lands, diverse environments, and varied experiences exchanged ideas and acquired knowledge of countries and inhabitants of the world. It was a tremendous incentive to the spread of geographical knowledge.

With the spread of Islam and the extension of its political influence, trade and commerce greatly expanded resulting in the knowledge of new lands. In the Euro-Asian continent these regions were the Volga-Caspian, Northern Europe, and Siberia on the one hand and Central and South-East Asia on the other. The African continent received far more attention from the Muslims than from their predecessors. The East African coast up to Madagascar, Egypt, Nubia, Abyssinia, the Sudan, Equatorial Africa, the Sahara, land of the Niger, and West Africa, all came within the range of their commercial, cultural, and religious activities.

Travel and commerce walked hand in hand. Each geographical discovery created new commercial opportunities, and these, with attendant competition and inherent ambitions, led to more travel and discoveries. At a later period the Crusades, besides their sordid side, provided for generations a great and prolonged avenue for contact between the East and the West for exchange of ideas and cultural assimilation. Trade, commerce, and travel were promoted and helped the circulation of geographical information.

Ibn Fadlan went as an envoy of Caliph al-Muqtadir to the Court of the Volga Bulghar in 309/921 and is

credited with the first reliable account of Russia. He may, in fact, be regarded as one of the earliest Muslim traveler-geographers. His Risalah or diary is of great geographic significance. His description is the earliest reliable account of Russia and was incorporated into the works of many later geographers including Yaqut.[11] Another experienced early traveler was abu Dulaf who hailed from Yanbu' near Medina. He combined poetic talents with a wander-lust. After a stay at the Samanid Court at Bukhara, he went to South India across Tibet with a returning Indian embassy and the journey back was made via Kashmir, Afghanistan, and Sijistan (c. 331/942). His narrative of journeys was entitled `Aja'ib alBuldun (Marvels of Countries). Abu Dulaf's geographical impressions of the Indo-Pakistan sub-continent and the adjoining areas were utilized by Yaqut and Qazwini. Among early Muslim travelers, al-Idrisi mentioned Sallam who visited the region north of the Caspian Sea, Armenia, Georgia, land of the Khazars, and the Ural and Altai areas in the middle of the third/ninth century at the command of Caliph al-Wathiq.[12]

With increasing Muslim influence in Indian littoral areas and expanding commerce in South-East Asian waters and on the Chinese mainland, more detailed and somewhat accurate geographical information was in demand. The busiest and flourishing ports on the Arabian coast and Persian Gulf were Aden, Oman, Suhar, Jeddah, Siraf, and Basrah. Their commerce and overseas relations were mainly with East Africa, Indian coasts, South-East Asia, and China. Siraf especially occupied a pre-eminent position and grew into a port-city of merchants, princes, and experienced sailors.

One of the early writings on trade and commerce and navigational matters in these regions was that on the journeys of Sulaiman the Merchant by an anonymous author (237/851) with the additional comments on it by abu Zaid al-Sirafi. The work gives us information with regard to duration of the journey, its various stages, ports of call, nature of commodity exchange, wind and weather, and conditions of the seas. The descriptions display an excellent geographical sense and an understanding of physical and human aspects. Sulaiman's description of the Chinese mainland, its products and economic resources is realistic. He also mentions the Chinese use of tea. Interest in the Indian Ocean and its bordering lands continued for generations and Muslim sailors and travelers wrote on many topics which encompass geography.

Abu Zaid al-Hasan of Siraf edited accounts of Muslim travelers and sailors in c. 308/920 in order to supplement Sulaiman's narratives. According to him, ibn Wahb travelled to China in 257/870 and there were other voyages in that direction. Abu Zaid's compilation was probably entitled Akhbar al-Sin w-al-Hind (Information about China and India). It may be said to be the most important work of its kind before that of Marco Polo or of ibn Battutah. Besides the Far East, it deals with the Arabian and the East African coasts. From such voyages and confirming somewhat earlier traditions also, gradually developed the stories and fascinating fables around the name of “Sindbad the Sailor” found in the All Lailah wa-Lailah. Another writer about the trade, commerce, navigation, peoples, and products of the Indian Ocean area from Arabia to Ceylon and beyond was Buzurg ibn Shahryar who compiled the interesting book `Aja'ib al-Hind [13] (Wonders of India) in about 342/953-954.

The famous “sea lions” (expert writers on nautical instructions), mentioned by Ahmad ibn Majid in the second half of the ninth/fifteenth century, were not mere expert navigators, but also writers on sea voyages and route books. Muhammad ibn Shadhan and Sahl ibn Aban belonged to the fifth/eleventh and sixth/twelfth centuries. Perhaps there were many more such writers; at any rate, later on, their successors were Ahmad ibn Majid (895/1489), Sulaiman al-Mahri (early tenth/sixteenth century), Piri Rais, Sidi 'Ali, and al-Sifaqsi (959/1551) who displayed a remarkable knowledge of the geography of the Indian Ocean.

The scene in the Mediterranean was somewhat different to that in the Indian Ocean. In the latter, trade, commerce, and adventure were the impelling factors in Muslim enterprise, but in the former prolonged political struggle, religious wars, commerce, and pilgrimages were motivating features behind sailings and voyages. There is record,[14] however, of the close co-operation between Muslims and Christians in the formation of joint partnerships and of commercial treaties, carriage of passengers in ships irrespective of their religion, and the transport of products of skilled industry and luxury goods from the Islamic world to Europe.[15]

Before mention is made of the well-known traveler-geographers in the western lands of Islam, those in the east deserve attention. Among these intelligent globe-trotters and geographers, al-'Mas`udi (d. 346/957) deserves pride of place. He was born in Baghdad towards the end of the third/ninth century. Mas`udi acquired his knowledge through painstaking study of the existing sources as well as through extensive travels. His travels carried him to many parts of Arabia, Levantine coast, Caspian shores, Asia Minor, Iran, Iraq, India, South-East Asia, East African coasts, and Egypt. He met common men possessing practical knowledge and scholars of repute. Mas'udi's acute observations and views depicting a keen geographical sense are contained in his famous book, Muruj al-Dhahab wa Ma'ddin al-Jawahir (Meadows of Gold and Mines of Precious Stones), a historic-geographical encyclopedia written in about 336/947 and revised ten years later.

It seems to be an age of great travelers, as not many years later ibn Hauqal (fl. c. 332-367/943-977) completed a travel of thirty years which excited his interest in geography. His meeting with the celebrated geographer al-Istakhri was significant, as at the latter's request he re-wrote his geography and revised the accompanying maps. Ibn Hauqgal called this improved version, Kitab al-Masulik w-al-Mamalik (Book of Roads and Provinces), and added maps of each country to this remarkable treatise. .

Yet another outstanding geographer and traveler was al-Maqdisi or al-Muqaddisi, a native of Jerusalem. He travelled through many Islamic lands except perhaps Spain, Sijistan, and Sind. By all standards he was a careful observer and had an inborn geographical sense. On the culmination of his travels he wrote his famous geography Ahsan al-Taqasim fi Ma'rifat al-Aqulim (Best of Divisions as Regards Climates) at Shiraz in Fars in 375-376/985-986. His writings reveal much original information and are an attempt at analysis of physical and human factors. His sources include several earlier geographers like Khurdadhbih, Jaihani, Balkhi, Hamadani, and Jabiz. But he subjects his authorities to considerable

criticism.

The tradition of travel and that as a medium for geographical work continued. One of the junior contemporaries of al-Biruni was Nasir Khusrau from Balkh, where he was born in 394/1003. Starting his travels from Egypt, he visited a large part of the Middle East including the Hijaz, Palestine, Syria, and Iran. Earlier, he had travelled in India[16] and lived at the Court of Sultan Mahmud. His travel diary, the famous Safar-Nameh, was written in Persian. He gives the best account of Jerusalem before the Crusades, and his description of Egypt is of high geographic value. Shaikh 'Ali al-Harawi (d. 611/1214) wrote a travel book dealing not only with the frequented places of pilgrimage in the eastern part of the Islamic world, but also of Byzantine Empire, North Africa, and Abyssinia. He was in Jerusalem in 569/1173 when it was in Christian hands. He visited the Christian parts of the world on several occasions.

The western world of Islam produced several traveler-geographers who also made journeys to the east to perform the pilgrimage to Mecca. Al-Mazini al-Andalusi (d. 565/1169) was an intrepid traveler who came from Granada and journeyed through Spain, North Africa, Egypt, Iraq, Khurasan, and Russia. He travelled in the Volga region and in Hungary and gave information unobtainable elsewhere, such as the Russian trade in fossil bones or ivory.[17]He was the writer of at least four important geographical works.[18]

Another celebrated geographer ibn Jubair of Valencia (d. 625/1217) wrote a valuable account of his journey to the east. His accounts throw an interesting light on the geography as well as the commercial activity and culture of the Muslim communities of the Mediterranean lands. Ibn Jubair's writings were a source book for many later Muslim geographers and historians. His Rihkah (Travel Account) remains one of the best works of its kind in Arabic literature.[19] Ibn Jubair's fellow townsman al-'Abdari (fl. c. 688/1289) commenced a memorable journey to accomplish the pilgrimage.

Starting from Mogadore on the West African coast of Morocco he made the journey both ways by land and thus crossed North Africa twice. His travel geography al-Rihlah al-Maghribiyah contains valuable topographical information.[20] Al-Mausili wrote 'Uyun al-Akhbar (a book of travels) at Ceuta after his travels through Syria, Palestine, and Egypt during 537-585/1142-1189.

Though al-Idrisi was an all-round geographer and his proper place is among the writers of scientific geography, his travels were an indispensable part of his geographic experience. He was born at Ceuta in 493/1099 and educated at Cordova. His travels covered a vast compass stretching from Muslim Spain and North Africa to Christian Europe as well as other parts of the Islamic world. Rich in experience and mature in his outlook, al-Idrisi settled down at Palermo in Sicily at the Court of his worthy patron King Roger II. He died in 562/1166. His famous geography Nuzhat al-Mushtaq fi Ikhtiraq al-Afaq (known as al-Kitab al-Rujari), written shortly before 549/ 1154 is the most elaborate description of the world of medieval times. According to Sarton[21], al-Idrisi was the author of another geographical work entitled Raud al-Uns wa Nuzhat al-Nafs (Pleasure of Men and Delight of Soul), a kind of a route book which the

author compiled for William I, King of Sicily, in 557/1161. This geographical work was said to be larger than the Kitab al-Rujari but unfortunately it has been entirely lost.

Abu al-'Abbas al-Nabati of Seville and his pupil ibn al-Baitar of Malaga were biographers and they travelled in Spain, North Africa, and along the shores of Red Sea with the purpose of scientific exploration in connection with their work.

Ibn Said al-Maghribi was another indefatigable traveler, profoundly interested in geography. He was born near Granada in 611/1214 and died in Damascus in 674/1275. His Kitab al-Jaghrafiya embodies the experience of his extensive travels in the Muslim world, and the geographical information and views in it added to al-Idrisi's knowledge. He also gives an account of parts of northern Europe including Iceland. Ibn Said visited Armenia also and was at the Court of Hulagu from 654/1256 to 664/1265.

Half a century later, in 704/1304, was born ibn Battutah, one of the outstanding travelers of all times. Starting from his home town, Tangier, in 726/1325, when he was barely twenty-two years old, he travelled in Africa, Asia, and Europe for thirty years. His journeys included several pilgrimages to Mecca and travel to and residence in many parts of the Middle East, India, Ceylon, Maldives, Bengal, China, North Africa, Spain, and the lands of the Niger. The extent of his wanderings is estimated at about 75,000 miles[22] without allowing for deviations, a figure which surpasses Marco Polo's travels. Ibn Battutah's dictated accounts of his experience to ibn Juzaiy at the Court of Sultan abu 'Inan at Fez constitute his Rihlah (Travels). The book contains references to the economic and human geography of the areas visited, trade, commerce, ports, navigation, and numerous physical facts with occasional analysis of causes and effects. His memory was astounding and geographical sense remarkable. Ibn Battutah died in Fez in 779/1377. In the western world of Islam, the tradition of travel leading to geographic writings was handed down to ibn Khaldun who was born in Tunis in 733/1332 and died in 809/ 1406. Much of his well-known writings as a geographer, historian, and sociologist was based on his travels in Spain and North Africa. The scientific significance of his “Introduction to Universal History” (Kitab al-'Ibar) will be discussed later.

In the East, Muslim travel-cum-geographical accounts from the eighth/ fourteenth century to the tenth/sixteenth century are represented by Hafiz Abru, `Abd al-Razzaq Samarqandi, abu al-Fadl'Allami, and Amin Ahmad Razi of Rayy. Hafiz Abru wrote his regional geography in Persian, entitled Zubdat al-Tawarikh, which was modelled on the earlier Arabic classical style. Barthold[23] has a high opinion of the material in it relating to the author's time. 'Abd al-Razzaq was born in Herat in 816/1413 and died there in 887/1482. He travelled to India and enjoyed a diplomatic career; on his return he wrote an excellent diary Mafia' al-Sa'dain wa Majma' al-Bahrain in Persian. In the generations that followed the advent of the Europeans into the Indian Ocean, Muslim interest in geography and travel was not dimmed. Abu al-Fadl, born at Agra in 958/1551, was a leading light at the Court of Akbar the Great. His A'in-i Akbari written in Persian remains an outstanding geographic contribution of his age, a parallel to which is hard to find in the contemporary West.[24] Amin Akimad Razi of Rayy visited India in Akbar's time and later in

1002/ 1593 produced his Halt Iqlim (Seven Climates), an exhaustive geographical dictionary in Persian. Another contemporary author who wrote at Damascus in 1007/1598 on the basis of personal travels was al-'Ashiq, the writer of Manazir al-'Alan (Description of the World).

B – General Treatises And Scientific Geography

The climax of Muslim geographical contribution is represented by the formulation of geographical theories and the compilation of treatises in which attempts were often made to assemble facts and put forward theories. Indeed, their level and scientific value are unequal; none the less, the attempts as such are interesting and praiseworthy. The later half of the fourth/tenth century was productive of many such efforts and it would not be too much to assert that such abundant activity in science and geography had never occurred before, not even in the best days of Alexandria. The "Keys of the Sciences" (Mafatih al-'Ulum) of al-Khwarizmi, the "Encyclopedia" (Fihrist) of ibn al-Nadim and the "Tracts of the Brethren of Purity" (Rasa'il Ikhwan al-,safa) remain the monumental examples of these efforts.

Throughout the ages arm-chair geographers have made mistakes which have been easily recognized by practical men. Ptolemy was no exception and so were many Arab literary geographers, but, on the other hand, many Muslim geographers, rich in their personal experience and deep in learning, pointed out flaws in the works of their predecessors. Mas'udi,[25] for example, is well known for such criticism as sprang from his universal outlook, and al-Biruni, Maqdisi, abu al-Fida', and others expressed opinions contrary to established notions.

In their geographical writings, new methods were evolved and new shape was given to traditional treatment. The arbitrary division of the then known world on the basis of "climates" originated by the Greeks was quite often copied by Muslim geographers. But the careful and discerning ones like al-Istakhri, al-Balkhi, Maqdisi, and several others found this method unsatisfactory and somewhat confusing and felt that these divisions in geometrical strips, more or less along the latitudes, were without consideration of the geographical factors. The need of some other method of treatment was realized.

Al-Istakhri initiated a regional approach to his descriptive geography by selecting either geographical units or political divisions closely corresponding them. His own words explain his technique:[26] "I do not take the 'seven climates' as a basis for the division of the earth because the geometrical shapes, even though correct intrinsically, lead to great confusion; so I have resorted to the study of the earth country wise." In fact, most of the leading Muslim geographers of the fourth/tenth century on the basis of their writings would have done credit to any period.

Arab regional geography developed a tradition of its own by describing the physical environment of an area as well as its people and their cultural and social activities, though sometimes the treatment of cultural matters led to rather deterministic generalizations, reflecting on people's characters and peculiarities. Surprisingly enough, many modern geographers, historians, and sociologists are not

immune from this weakness; they often build their cultural theories on foundations of sand. The method and technique of geographic descriptions of diverse lands evolved by al-Istakhri, ibn Hauqal, al-Maqdisi, al-Mas'udi, and others was later adopted by al-Qazwini, abu al-Fida', and ibn Khaldun, especially the last named who, by his analysis and interpretation, anticipated modern sociology and human geography.

A few examples of scientific geographical writing deserve mention. The tracts produced by the Ikhwan al-Safa (Brethren of Purity) had considerable geographical information and views. Theirs was a rationalist approach to many problems. Their secret association was founded at Basrah in about 373/983. This encyclopedic effort by several anonymous writers, many of whom were interested in scientific geography, is noteworthy. Their treatises include numerous references to the then current geographical conceptions and attempt to explain them for popular understanding. Among their physical treatises meteorology receives much attention, and explanations are offered for the occurrence of rain, the march of seasons, and layers of the atmosphere[27] Geological processes are explained and attention is devoted to weathering and denudation. Plant-geography, distribution of animals, and a general consideration of ecological conditions does not escape their notice.[28]

The influence of physical environment on human activity and animal behavior and their relationship with health and material well-being were subjected to somewhat critical analysis by several fourth/tenth-century writers on geography. Al-Jahiz (d. 254/868) of Basrah had a real interest in the natural and anthropological sciences. In his "Book of Animals" (Kitab alhayawan), besides writing on a variety of subjects, he interestingly tackled questions of evolution, struggle for existence, and adaptation. Abu Zaid al Balkhi writing in 309/921 was a maker as well as an interpreter of maps. His remarkable work Suwar al-Aqalim (Figures of Climates) was a critical study based on maps. A few years later Mas'udi (d. 345/956) used his vast experience and critical abilities remarkably well in dealing with geographical matters. Mas'udi has often been designated[29] as the Muslim Pliny, but he displayed far greater critical ability and scientific curiosity[30] than Pliny in his description of earthquakes, waters of the Dead Sea, geological phenomena, navigational problems, and ebb and flow of tides.

He also made the first mention of wind power and windmills in Sijistan. Another work of al-Mas'udi's, Kitab al-Tanbih w-al-Ishraf (Book of Indication and Revision), sets forth his views on evolution. Akhbar al-Zaman contains discussion on the origin of seas, cycle of river erosion, etc. Al-Maqdisi (375/985) was yet another scientifically minded geographer who derided the arm-chair conceptions of some of his great predecessors[31] and took upon himself the task of writing a geography of the Islamic world based on travel and observation. The result was one of the finest geographical treatments of regions and provinces of the Muslim domains in medieval Arabic literature.[32] He stressed the point that geography was a subject of great usefulness and was, therefore, of interest to people in all walks of life. "The Model City" (al-Madinal al-Fadikah) of al-Farabi (d. 339/950) is a fine sociological study of urban conditions of his time in which he envisages better future town-planning.

Ibn Sina (370-428/980-1037) expressed views and expounded ideas on almost all subjects with equal

clarity. He made a profound study of various physical questions. His views on the origin of mountains and valleys have a flare of modern concepts and his treatise on minerals remained one of the chief sources of geological knowledge in Western Europe until the Renaissance. Ibn Sina's al-Urjuzat al-Sina'iyyah (Cantica) displayed an excellent understanding of human and environmental factors. But ibn Sina's contemporary abu Raihan al-Biruni (363-440/973-1048) who has his place among world scientists of all times was a traveler, philosopher, mathematician, astronomer, geographer, and encyclopedist.

Sarton rightly remarks[33] that his critical spirit, toleration, love of truth, and intellectual courage were almost without parallel in medieval times. His works were written in Arabic, partly in Khwarizm, the town of his birth, and largely in Ghazni and India where he spent the rest of his life. Through the patronage of Sultan Mahmud and his two successors Mas'ud and Maudud he was able to visit India, learn Sanskrit, and acquire knowledge of Indian sciences. His Kitab al-hind (Book of India), written in 421-22/1030, provides numerous instances of his geographical concepts covering such matters as the origin of the plains of Northern India, nature of rainfall, commercial activity, roads, frontiers, and boundaries.[34]

Among his many other writings the "Chronology of Ancient Nations" (al-Athar al-Baqiyah) was written at Khwarizm in 391/1000, "Canon Masudicus" (alQdnun al-Mas'iidi) at Ihazni in 421/1030, and the "Book on Mathematics" (Kitab al-Talhim) like the one on stones [35](Kitab al-Jamahir fi al-Ma'rifat al-Jawahir) towards the later years of his life, during the reign of Sultan Maudud. Al-Biruni was truly a scientific geographer and discussed all matters from a critical point of view.[36]

Yet another contemporary was ibn Sa'id al-Qartabi al-Andalusi (420-463/-1070) who lived and worked in Toledo. Though he was a leading astronomer and historian, he tackled geographical problems scientifically. His Tabaqat al- Umam paid special attention to the history of science. The ethnographical and sociological views expressed by him in this work were based on environmental considerations. A few generations later, al-Idrisi, with a background of Andalusian education, extensive travels, and cultural contact with Christendom, produced his elaborate geographical works. His work can be said to be the most notable example of the fusion of ancient, Arab, and medieval geography. He was critical of Ptolemy's ideas. Ibn Jami described Alexandria and discussed its climate.

'Abd al-Latif's book on Egypt may be considered to be one of the most important topographical works of the Middle Ages. In this work attempts at analysis on the basis of known facts and theories are discernible though they are not necessarily geographical. A1-Zamakhshari's (d. 539/1144) Kitab al-Amkinah w-al-Jibal w-al-Miyah was a worthy geographical dictionary. Ibn Sa'id al-Maghribi s main work was a geographical treatise entitled Kitab al-Jaghrafiya. Though it was based upon Ptolemy and al-Idrisi, it contained many facts which had been discovered since then and included the geographical co-ordinates of every important place. His extensive travels and long residence in the east and later the patronage of Hulagu gave him the opportunity to become a connecting link between his predecessors and the mathematical geographers led by Nasir al-Din al-Tusi at Maraghah. Some of his ideas were

derived from al-Hasan al-Marrakushi (627/1229).

A notable writer of scientific geography was Zakariya al-Qazwini (600-682/ 1203-1283). He is noted for his two works,[37] namely, 'Aja'ib al-Makhluqat wa Ghara'ib al-Maujudat (Cosmography, or Marvels of Created Things) and 'Aja'ib al-Buldan (Marvels of Countries). A later enlarged edition of his geography was called Athar al-Bilad. Qazwini's works exerted a deep influence upon the Arabic-speaking people as well as on those reading Persian and Turkish. Muhammad ibn Mahmud al-Tusi also wrote a cosmography in Persian. A notable treatise on commercial geography was written by 'Abd al-Rahman ibn Nasr under the title Nihayat al-Rutbat al-Zarifah.

In the seventh/thirteenth century, abu al-Fida' al-Ayyubi (b. 672/1273) was an outstanding geographer who had thoroughly assimilated the earlier geographical contributions, especially those of Ptolemy, al-Idrisi, and ibn Said. His main geographical work Taqwim al-Buldan displays extensive knowledge and balance in the selection of information. Abu al-Fida's geographical work has earned high recognition among modern European geographers.[38] The geographical work of Hamd Allah Mustaufi, Nuzhat al-Qulub, written in 741/ 1340 in Persian is a comprehensive geography of the Islamic world. Iran and Central Asia receive special treatment, changes in the course of the Oxus are mentioned, and descriptions are given of the hot springs and oil-wells of Baku and the islands of South-East Asia.[39] His historical work, Tarikh-i Guzideh (Select History) also contains useful geographical interpretations. A contemporary of Mustaufi was al-Dimashqi (d. 728/1327). His cosmographical work, Nukhbat al-Dahr fi 'Aja'ib al-Barr w-al-Bahr, was in the traditional style, but is remarkable for its knowledge about the Coromandal Coast of South India.[40]

Ibn Khaldun's “Universal History” (Kitab al-'Ibar) with its masterly Prolegomena raised the art of geographic interpretation to new heights and made him the forerunner of modern human geography and sociology. He not only wrote a critical history but combined ethnography and geography with it.[41] Ibn Khaldun recognized different types of habitats and explained the influence of environment on human development. He marked the rise and growth of cities and noted examples of bad siting leading to rapid decay.[42] He also gave a critical appraisal of the industrial and agricultural resources of Andalusia.

Though the ninth/fifteenth and the tenth/sixteenth centuries witnessed epoch-making geographical discoveries and the frontiers of knowledge of the European people were rapidly widened, yet the scientific traditions of Muslim geography did not cease abruptly. The Turkish school of geography achieved much by way of prolific writing as well as scientific treatment. Some of these works are al-'Ashiq's Manazir al-'Alam (Descriptions of the World) written at Damascus in 1007/1598, Haji Khalifah's encyclopedia, Kashf al-Zunun, and Auliya Chelebi's travel book, Tarikh-i Saiyah. Before an evaluation of Muslim geographical conceptions is made and its influence on European mind and thought briefly indicated, two other aspects of their work may be briefly outlined, namely, mathematical geography, and map-making and cartography.

C – Mathematical Geography

Muslim astronomical and mathematical work extends over several centuries and is enormous in its content and commendable in quality. Here only a brief outline is presented in so far as it concerns geographical matters, i.e., latitudes, longitudes, eclipses, and tides; shape, size, and the movements of the earth; and the general mathematical implications in geodetic work.

Historically, Muslims devoted early attention to astronomy and mathematics; the first period of translations led to contributions in these fields. Eventually certain centers and areas developed strong traditions of their own. For example, Baghdad in particular and Iraq in general got an early start in this respect. But later on, with the decline in the influence and prestige of Baghdad, many other parts of the eastern world of Islam became centers of mathematical work and its application in associated fields. The Ghaznawids, Buwaihids, and Mongol princes patronized these sciences. Similarly, works and traditions in North Africa from Egypt to Maghrib and in Andalusia achieved their own characteristics.

The Indian, Iranian, and Greek influences played their part in stimulating early attempts. Al-Fazari's Kitab al-Zij (Tables) reflects strong Indian influence. The first series of regular observations with accurate instruments were conducted at Jundi-Shahpar during the first half of the third/ninth century and were utilized by Ahmad al-Nahawandi and others. Ya'qub al-Kindi's works and those of others such as Yahya ibn Mansur, Sanad ibn 'Ali, and al-Marwarzuri were concerned with the preparation of astronomical tables. Earlier, Ptolemy's Almagest had also been translated by al-Nairizi.

But the outstanding event in the field of mathematical geography was the measurement of a degree, under the orders of Caliph al-Mamun, to determine the size of the earth, in latitude 36° north.[43] An observatory was built on the plain of Tadmur (Palmyra) for geodetic as well as astronomical work. On the Caliph's instructions two degree measurements were made near Tadmur and Raqqah under the supervision of the sons of Musa ibn Shakir. The result of these two measurements was the calculation of the earth's circumference as 20,400 miles and the diameter 6,500 miles[44] respectively.

A large map of the world was also drawn. The three sons of Musa ibn Shakir, besides being men of means, were practical scientists. One of their books was concerned with the measurement of the sphere and the trisection of the angle. Besides al-Khwarizmi and al-Kindi, the great astronomer abu Ma'shar of Balkh (d. c. 272/836) was especially interested in celestial phenomena. Al-Mahani (fl. 240-254/854-868) studied the eclipses of the sun and the moon and also the conjunction of the planets.

In later generations, particularly under the patronage of the Buwaihid Court, a great deal of astronomical and mathematical work was done and the making of observations with better designed and perfected instruments became common. A glorious period in this respect was the time of 'Adud al-Daulah and Sharaf al-Daulah, when measurements and observations relating to equinoxes, solstices, eclipses, and the form of the earth were undertaken. Ibn al-'Alam, al-Razi, al-Kuhi, and abu al-Waft' were among the leading lights of this wonderful age.

In the course of time, Cairo also developed into an important center fo work in mathematical geography. The Caliph al-'Aziz (365-386/975-996) founded an observatory near Cairo and al-Hakim continued to patronize it. Ibn Yunus (d. 399/1009) was a great mathematician and astronomer and ibn al-Haitham a notable physicist. In point of time, al-Biruni's work again needs a mention here, for his monumental work "Canon Masudicus" was written in 421/1030. He was a great mathematical geographer and devoted himself to many problems, including the accurate determination of latitudes and longitudes, geodetic measurements, simple method of stereographic projections, earth's shape, axis and rotation, and laws of hydrostatics. Al-Biruni's contemporary, ibn Sina, the celebrated philosopher, produced treatises on astronomical instruments, earth's position in the universe, and heavenly bodies.

In North Africa, Tangier, Ceuta, Fez, and Morocco became centers of scientific work relating to mathematics. An outstanding scholar and practical geographer was al-Marrakushi, the writer of Jumi' al-Mabadi w-al-Ghayah (The Uniter of the Beginning and the End) which is considered to be one of the greatest scientific contributions of the seventh/thirteenth century. It includes terrestrial co-ordinates of 135 places of which thirty-four were conducted by the author himself. Al-Marrakushi was fully conversant with scientific methods and made use of many instruments. In Spain, mathematical geography flourished like the other sciences.

Among outstanding votaries was Maslamah al-Majriti (d. 398/1007) of Madrid who made a synopsis of al-Battani's tables. His works were translated into Latin under Alfonso. Al-Zarqali (420/1029-481/1088), besides being well up in theoretical ideas, was a maker and designer of many instruments and astrolabes. He also became well known in Europe through profuse Latin translations of his treatises. The philosophers and rationalists Jabir (Geber), ibn Aflah (d. 535/1140), ibn Rushd (Averroes) (d. 595/1198), and ibn Bajjah (Avempace) (d. 533/1138) were all interested in the mathematical side of geography.

In the eastern Islamic lands, in later generations, the Saljuq period was productive of much scientific work in mathematical geography, particularly the reign of Jalal al-Din Malik Shah (r. 465-485/1072-1092). The Mongol princes turned out to be great patrons of scientific activity. Hulagu Khan (d. 664/1265) had many mathematicians at his Court and a great observatory was set up at Maraghah on the shores of Lake Uruniyeh, fifty miles from Tabriz. Nasir al-Din Tusi was the leading light. The Maraghah astronomers were greatly interested in geography. For example, al-Tusi's Tadkirah (History) in its third chapter deals with geodetic matters and seas and winds. Qutb al-Din al-Shirazi s (634-711/1236-1311) Nihayat al-Idrak is devoted to astronomical, meteorological, and geographical questions. Al-Qazwini and al-Watwat also wrote on cosmogeographical and geographical matters.

1. Instruments and Their Use

The work in the field of mathematical geography would not have been possible without instruments and observatories. Therefore, it is not surprising to find the mathematicians and geographers working in observatories and using self-made as well as standard instruments and devices. Some of the common needs and requirements included measurement of distance between two points, determination of latitude

and longitude, levelling and measurement of heights, geodetic measurements, and co-ordinates of Mecca. An account of the instruments devised, developed, and used will be given in the next chapter on "Mathematics and Astronomy" of this work.

2. Determination of Latitudes and Longitudes

Muslim efforts in the measurement and determination of latitudes and longitudes were considerable. They contrived methods as original as the results which were often accurate. The view that the work of Muslim geographers and astronomers in no way surpassed the Almagest of Ptolemy, is undoubtedly without any basis.[45]

The early Arab astronomers, al-Khwarizmi, al-Farghani, Habash al-Hasib, and al-Battani, made use of Indian and Greek methods of finding latitude. But better techniques soon began to be employed. The sons of Musa ibn Shakir at Baghdad determined the city's latitude, accurate within a minute, and ibn Yunus at Fustat (near Cairo) did remarkably accurate work. He drew attention to the fact that while reckoning latitude from the shadow of the gnomon, errors up to 15 minutes crept in as the shadows were cast from the upper edge of the sun and not from the central point.

Ibn al-Haitham (355430/965-1038), known in Europe as Alhazen, wrote a notable work on the calculation of latitudes. He recommended the method of taking a fixed star for the precise determination of the altitude of the pole, and he was fully aware of the errors due to refraction. Al-Biruni suggested the method of determining latitude by reference to the relation of the circumpolar stars to the sun. But in the measurement of longitude, he advocated as well as demonstrated the use of the terrestrial calculation. By this method he presented a correction in the distance in longitude between Alexandria and Ghazni.

The difference in longitude between Baghdad and Ghazni found by al-Biruni by the terrestrial method was remarkably accurate. Qanun al-Mas'udi, Kitab al-Hind, and Kitab al-Tafhim are the repositories of calculations. Other almost exact calculations were those of the three sons of Masa ibn Shakir at their observatory in Baghdad, of al-Mahani at Surra Man-Ra'a, of ibn Yunus at al-Muqattam, and of Ulugh Beg at Samarqand. An outstanding correction as a result of Muslim calculation was the elimination of the Ptolemaic exaggeration of about 17 degrees in the length of the Mediterranean.

3. The Earth's Shape, Size, and Movements

Opinion on the sphericity of the earth was divided in the early Middle Ages. Cosmas' fantasies were opposed to it, while St. Augustine reluctantly conceded the globular shape, but vehemently rejected the concept of people inhabiting the antipodes. Muslim geographers and other scientists had a firmer belief in the sphericity of the earth as they continued to support, in general, the Eratosthenian theory of climate. Probably, the majority held the idea of an earth globe floating in space. Outstanding examples of Muslim experiments based on belief in the sphericity of the earth and the measurement of a degree were those conducted by the geodetists of al-Mamun in the plains of Sinjar, and al-Biruni's

measurement of 56 miles 0' 50" 6" for a degree conducted in India was remarkable for its accuracy.[46] Early Muslim opinions on the question of the earth's shape are summarized by the geographer ibn Rustah in his famous treatise "Work of Costly Treasures" (c. 291/903).

As regards the movements of the earth, the position was somewhat different. The question whether the earth was at rest or not, was not discussed in Europe either in the early or later Middle Ages. Generally, the earth was assumed to be at rest in the center of space. Al-Biruni, assuming the vague Babylonian and Indian conceptions, believed in the turning of the earth on its own axis. He also believed in the movement of the sun round the earth, though he did not reject the suggestion of abu Said Sinjari regarding the possible movement of the earth round the sun.

In the second half of the seventh/thirteenth century the question of rotation was taken up by 'Umar al-Katibi al-Qazwini (d. 676/1277), who was connected with the Maraghah observatory and prepared an edition of the Almagest. His work Hikmat al-'Ain contains argument for the heliocentric theory. Unfortunately, he finally rejected the idea of the circular motion of the earth and, therefore, failed to anticipate Kepler and Galileo. Among others, who took up this question, was Qutb al-Din, a pupil of Nasir al-Din Tusi. His semi-geographical work, Nihayet al-Idrak, contains a discussion of these questions. Thus, Muslim mathematical geographers often expressed doubts on Greek and Ptolemaic concepts about the earth. Sarton[47] rightly emphasizes that the doubts expressed in Arabic writings were not sterile as they eventually paved the way for the Copernican reform in 950/1543.

D-Cartography And Map-Making

Muslims inherited the Greek and Babylonian traditions in map-making. In the past, there had existed a close relationship between extension of maritime activity and navigation and the development of cartographic skill.

The Arab and Muslim knowledge of the seas far surpassed that of their predecessors. It encompassed familiar areas from the Mediterranean to the Atlantic and from the Red Sea, Arabian Sea, and Persian Gulf to the Indian Ocean and the Pacific. Their extensive sailings on these waters were not merely naval expeditions, but were made in pursuit of an extensive commercial and maritime activity in which the crossings of the Mediterranean formed but a small part. This necessitated the use of sea charts, coastal information, and knowledge of wind and weather. Therefore, one class of Muslim mapmaking was devoted to these objectives, while geographers and others made many maps to depict land information and the political and regional composition of the Islamic world as well as of the then known inhabited areas.

On the whole, Muslim map-making and cartography generally advanced the older knowledge and techniques. The traditions of Roman cartography were poor. Even Ptolemy had made a fundamental error in underestimating the earth's size. He had accepted the figures of Posidonius (1 degree = 500 stadia) on the basis of which Europe and Asia were supposed to extend over one-half of the surface of

the globe, while their extension covered only 130 degrees. He had also estimated the length of the Mediterranean to be 62 degrees instead of 42 degrees. The Muslim geographers had corrected this error, but European cartography persisted with this mistake up to the end of the tenth/sixteenth century.[48]

Muslim geographers constructed celestial and terrestrial globes and studied the problem of projections. Their maps were superior to those of Ptolemy, and it became a somewhat general practice to draft maps to accompany the geographical treatises. This is borne out by many examples. Al-Khwarizmi's Kitab Surat al -Ard was written in explanation of maps which might have been based on Syriac versions of Ptolemy. The world map, prepared at the behest of Caliph al-Mamun and embodying the collaboration of no less than seventy experts, can be considered to be a notable example of scientific mapmaking. Unfortunately, this map is not extant. It has also been suggested[49] that there was a collection of maps of Iran including a pre-'Abbasid world map, which may very well be called "Iran Atlas." In order to indicate the possibility of such a series of maps, it may be pointed out that ibn al-Faqih mentions a map of Dailam which was made for Hajjaj ibn Yusuf, and al-Baladhuri notes in his Futuh al-Buldan that a petition to Caliph al-Mansur was supported by a map of the canals of the Basrah area.

In the evolution of Muslim cartography, the Balkhi School represents a distinct advance. Al-Balkhi's atlas included, besides a map of the world, maps of Arabia, the Indian Ocean (Baler Fars), Maghrib, Egypt, Syria, the Mediterranean Sea, and several other parts of the Islamic world. This atlas was devoted to the geographic description of the areas covered by the maps and also presented a division of the world into the so-called "Climatic Zones." Konrad Miller in his Mappae Arabicae fittingly calls it "An Islam Atlas." It is most unfortunate that the fruits of Balkhi's effort have been lost and only the copied material by al-Istakhri and ibn Hauqal has been handed down to posterity. A follower of these traditions was al-Maqdisi who explained the basis of the drawings of al-Istakhri and then made his own regional maps of the world, using symbols and a color scheme for physical features which made his maps almost similar to modern maps. [50]

Al-Biruni made a round map of the world in Kitab al-Tafhim to illustrate the position of seas, and in al-Athar al-Baqiyyah (Chronology of Ancient Nations) he discussed methods of celestial and terrestrial projections. Al-Idrisi s fame as a map-maker has found universal recognition. He is said to have made seventy maps of climatic divisions, a celestial sphere, a globe of silver, and a world map on a silver plate with great cartographic skill. His maps give a better representation of the western world of Islam than that of the eastern. His cartographic effort influenced his European contemporaries and successors in many ways. In later generations, al-Qazwini and al-Wardi made maps based on the lingering traditions of the Balkhi School. Two celestial globes were made by 'Abd al-Rahman al-Sufi in Cairo in about 432/1040; a bronze globe was made by ibn Hula of Mausil in 674/1275. Mahmud Kashghari, in his Diwan Lughat al-Turk, made a world map in 734/1333.

Finally, a brief mention of the Arab sea charts, navigation manuals, and the early development of the

portolani (European sea charts) is relevant to the subject. The most extensive Arab navigational activity was from the Red Sea and the Persian Gulf to the various parts of the Indian Ocean along East Africa and South-East Asia. Sailing ships were exposed to the hazards of wind and weather and were directly influenced by the subtropical and equatorial changes in meteorological conditions. The monsoons were a great factor in these sailings. Therefore, it is not only a fair guess but has a basis in fact that safe sailings were conducted with the accumulated experience of generations of seamanship as well as sea charts and instruments. As regards instruments, the compass may be considered fairly certain, and the greatly perfected astrolabe was also put to use. In the East, the peak of Muslim navigational achievement was reached on the eve of the Portuguese incursion into these waters. In the West, the Mediterranean sailings were most common. There are also on record some attempts to probe into the mysteries of the Atlantic.

The dream to reach the riches of India and China by sailing round Africa was an ancient one, but the Muslims' mastery of North Africa, their dominion in the Iberian Peninsula, and the urge to spread Islam and commerce to yet newer lands, revived a new interest in the venture. The sailors and navigators of Muslim Spain were the first in the field, the Genoese sailors came after them. The Portuguese maritime activity took a still later place in history. Among Muslim writers, al-Mas'udi and al-Idrisi have mentioned the attempts of their co-religionists. Al-Mas'udi mentions in his Muruj al-Dhahab the venture into the Atlantic before 346/957 by Khashkhaf of Cordova, and al-Idrisi relates the story of the Maghrurin (the deceived ones). These sailors were eight cousins who set out from Lisbon (before 439/1147) and sailed westward for about eleven days, then in a southerly direction for twelve days when they reached the inhabited Isle of Sheep (Jazirat al-Ghanam); after further navigation of twelve days they landed on another island where they were made prisoners. It may be a fair surmise that the first island was the Madeira and the second the Canaries.

To turn once again to the East, there were successive generations of professional Muslim pilots and writers of nautical instructions throughout the fourth/tenth to the sixth/twelfth century. The pilots (mu'allim or musta'mil al-markab) and “Lions of the Sea” acquired great fame from the first half of the sixth/twelfth century onward. To this period belong Sahl ibn Aban, Mubammad ibn Shadhan, and Laith ibn Kablan. Later, Ahmad ibn Majid wrote Kitab al-Fawa'id fi Usul al-Bahr in 895-896/1489-1490 and Sulaiman al-Mahri produced his ' Ulum al-Bahriyyah in the early tenth/sixteenth century. Shihab al-Din Ahmad ibn Majid was an expert sailor as well as a writer of nautical instructions and his role in guiding Vasco da Gama's ship across the Arabian Sea in 904/1498 is well recognized. According to Barros, ibn Majid showed the Portuguese admiral a map of the whole coast of India indicating meridians and parallels. He also expressed no surprise or sense of admiration on seeing the Portuguese navigational instruments and is said to have commented that Muslim sailors in the Indian Ocean possessed more efficient devices and instruments. In fact, ibn Majid and al-Mahri may be regarded among the early modern writers on nautical matters. Their knowledge of the geography and meteorology of the Red Sea and the Indian Ocean was extensive.

Between 867/1462 and 896/1490, ibn Majid wrote thirty nautical texts. Of these, the most important work was Kitab al-Fawa'id. The book is a compendium of knowledge relating to the principles of navigation both theoretical and practical. It deals with matters connected with the origin of navigation, use of magnetic needle, routes across the Indian Ocean, latitudes of harbors in that ocean, the China Sea, regional description of large islands, monsoons and their dates, and banks and reefs of the Red Sea. This work was of great use to those engaged in navigation and preceded the European navigation in Eastern waters.[51]

Sulaiman al-Mahri was a younger contemporary of ibn Majid. He wrote five treatises on sailing instructions. Of these the third was entitled al-' Umdat al-Mahriyyah fi Dabt al-'Ulum al-Bahriyyah. This work deals with nautical astronomy, sea-routes in the Arabian Sea and Indian Ocean, monsoons, and some outstanding voyages.

One of the main cartographical achievements of the Middle Ages was the preparation of sea charts which were extensively used by seamen and sailors in the Mediterranean and the Black Sea, from the end of the seventh/thirteenth century onward. These are known as “portolani” and were largely produced by the Genoese, Pisans, and Italians. The languages used in these early Western maps are Latin, Catalan, Italian, or a sort of Mediterranean lingua franca composed of various Romance elements.[52] Their origin appears to be debatable, though many Western scholars stick to a single source theory, namely, European Christian. Perhaps the Western portolani owed their development to sailors and cartographers in their own area. But it is almost certain that the Arab pilots, guiding ships across the Indian Ocean and South-East Asian waters, must have very keenly felt the need of such maps. In the form in which Western portolani have been handed down, it is not possible to say which ones were earlier.

But as related above, Muslims had been actively engaged in navigating the extensive and dangerous Eastern seas up to China and across the mesh of islands in South-East Asia since the third/ninth century onward; they had sea charts as mentioned by al-Maqdisi in the later part of the fourth/tenth century. While writing about his extensive sea journey over the Indian Ocean, he says[53] that he was often in the company of shipmasters and pilots and other experts who had long experience of sailings in these areas and possessed a detailed knowledge of wind and weather and the physical and commercial geography of these seas and their adjoining lands. He adds that he had seen in their possession sailing charts, directories, and nautical instructions, many of which he himself utilized to compile his own work.

Marco Polo also refers to the Arabs' use of sea charts and maps. It is said that Qutb al-Din Shirazi, the geographer of the Itkhans of Persia, used one such map to mark the progress of the Mongol envoy to Christendom. Indeed, it is quite conceivable that the early portolani were made after centuries of experience before their Mediterranean and Atlantic samples came to be drafted. It is, however, true that the number of Muslim portolani is small as compared with the Western ones.

As a criticism of the quality of Muslim cartography it may be admitted that often it overemphasized

decoration at the expense of accuracy. But it will be well to remember that contemporary Western cartography was most rudimentary by comparison and the latter mappae mundi were a mixture of fact and fancy. Much has been written in recent years to throw light on the achievement of Muslim map-makers. The labors of Konrad Miller, Prince Youssouf Kamal, and Kramers have been very rewarding and have presented Muslim cartography in a new light.[54]

E – Influence Of Muslim Geography

The question of the extent of the influence of Muslim geography on the European mind is an interesting one. Usually it is claimed that the development of medieval European as well as that of early modern geography was somewhat independent. This view appears to be untenable and is rather out of date, as its basis is emotional and it disregards the inevitable links of history. Moreover, a brilliant galaxy of European scholars including many Orientalists, through their painstaking researches into the sources of modern science, have produced indisputable evidence of the transmission of Muslim science to European communities. Here it is possible to present only the main points of the transmission of Muslim geographical knowledge and concepts to the West.

Even during the first half of the fifth/eleventh century, necessary conditions for scientific work did not exist in the Latin West, or for that matter in the whole of Christendom, as they did in the Islamic world. It was only Jewish thought which was moving forward due to direct contact with Muslim culture and under the stimulus of its progressive impulses. No doubt, some Christians in the Muslim world did contribute to these efforts.

There were two important sources of the transmission of Muslim science and geography to Latin Europe and other areas in the West. The points of cultural and physical contact in Spain, Italy, Sicily, and the Aegean Islands were strengthened by intermixing of people during the prolonged period of the Crusades. Secondly, as an earlier translation activity at Baghdad had paved the way for a fruitful synthesis, so the numerous translations of Arabic works in Spain, Italy, and Sicily proved to be harbingers of scientific advance.

Latin geography before the early sixth/twelfth century was on a much lower level than the Muslim. It was too simple and childish. This remark applies especially to those writers who were not influenced by Arab ideas and continued to follow the Roman and early medieval traditions, e.g., Henry of Mayence, Guido, and Lambert of Saint Omer. On the other hand, those who showed a somewhat better geographical sense like Herman the Dalmatian, Bernard Sylvester, and William of Conches had been influenced by Arab ideas.

The major proportion of European geographical writings of sixth/twelfth century in the West consisted of Latin and other Christian pilgrim literature, though there were also a few other contributions. John of Wurzburg was a German pilgrim in the late sixth/twelfth century, Joannes Phocas was a soldier turned monk who wrote of castles and cities from Antioch to Jerusalem, and Richard the Lion-hearted was a

crusader king. Sigurd, King of Norway and a crusader, made a remarkable journey to Palestine and back between 501/1107 and 505/1111. The outward journey was a fighting cruise through the North Sea, the Mediterranean, and the Aegean waters. He fought the Muslims around Spain and visited the cultured Court of Roger H of Sicily before his return home by an overland route through Europe. His saga is somewhat geographical in its content and bears traces of contact with the Orient.

Pedro Alfonso made a sketch-map of the world clearly derived from Muslim models, copying the seven climates and putting south on the top. Henry of Mayence compiled a treatise in 504/1110 which included a map. A geographic encyclopedia was prepared in 513/1119 by Guido who was probably an Italian geographer. Lambert of Saint Omer compiled another encyclopedia with maps; in this work he propounded his belief in the sphericity of the earth. Herman the Dalmatian in 538/1143 prepared his cosmographical compilation, which included astronomical and geographical information, and Bernard Sylvester produced his De Mundi.

Nearly all the above-named writers and their contemporaries who dealt with geographical matters were steeped in patristic and Latin traditions. But by the middle of the seventh/thirteenth century, a distinct change was perceptible, as by that time the full impact of the translations was evident in the more readily available Arab knowledge in Europe. Scholars were not only aware of it, but were beginning to feel the need of it. The new knowledge, of which Muslim geographical information and notions were an indispensable part, began to work as a great stimulus to new ideas in the Latin world.

Henceforward, the level of geographic thinking and writings was definitely raised. Vincent of Beauvais, Albert the Great, Roger Bacon, and others were all sufficiently influenced by Arab knowledge of geography and its associated fields.[55] Joannes Sacrobosco (John of Hollywood), the English astronomer and mathematician, wrote his Sphaera Mundi in about 631/1233. This work was slavishly based upon al-Farghani and al-Battani; it became immensely popular in the West, was translated several times, and remained in use in schools up to the eleventh/seventeenth century. William the Englishman in 629/1231 mainly interpreted al-Zarqali and al-Bittani. Vincent of Beauvais, the French Dominican scholar who died in 663/1264, compiled an encyclopedia. It was a monumental work and much of its geographical and geological information was derived from Arab sources.

Albert the Great (d. 679/1280) was another outstanding Dominican intellectual and prolific writer. He knew neither Greek nor Arabic, but acquired vast knowledge through Latin translations, seriously studied Muslim thought, and was considerably influenced by their geographical ideas. Roger Bacon's Opus Majus is replete with geographical references[56] to Arab sources. Gossuin of Metz or Walters' L'image du monde, written in about 644/1246, was derived from existing sources largely based on Muslim knowledge.

Konungs Skuggsja is an outstanding geographical and encyclopedic treatise in Old Norwegian written by an unknown author between 614/1217 and 659/1260 or about 647/1247. The author was either a priest or a Court chaplain and a good deal of his material was based upon the accounts of returned crusaders

and pilgrims. It displays good geographical sense, particularly in physical geography. He believed in the sphericity of the earth. The work is not entirely without Arab influence. The travel accounts of the Englishman Sir John Mandeville, though verging on the fantastic, are a rehashing of common Arab knowledge in geography.

The fact remains that gradually most of the basic and current geographical ideas of the Muslims were passed on to the West. These were with regard to the size of the earth and its sphericity, oceans, geological processes, climate, vegetational and zoological distributions, knowledge of new lands in Africa, Far East, and Central Asia, techniques of cartography, and uses of instruments.[57] All this knowledge in various degrees of assimilation is depicted in the leading geographical works and forms the background of the so-called mappae mundi, and also in some of the maps of later generations preceding the Columbian era, viz., the Psalter map (c. 597/1200), Hereferd map (c. 679/ 1280), the world map of Marino Sanuto (721/1321), the Borgian world map (c. 854/1450), Este world map[58] (e. 854/1450), Fra Mauro's Africa (864/1459), and the diagrams of L'image du Monde (885/1480). Though these maps were far from being real maps and mirrored more the shadows of patristic and traditional notions, yet acquaintance with Arab cartography and geographic information is revealed in them.[59]

On the whole, the period from the sixth/twelfth to the ninth/fifteenth century was a period of transition and compromise, a time of absorption and fusion, because it was during this period that the conflicting Muslim and Christian cultures were brought most closely together. The result was the creation of the core of new Europe. This was essentially Graeco-Arabic-Latin. After the invention of the art of printing in the second half of the ninth/ fifteenth century, many Graeco-Arabic scientific works were eagerly and repeatedly printed. In fact, the influence of Arab science remained paramount in Europe, till, towards the middle of the tenth/sixteenth century, Copernicus published his revolutionary concepts, and experimental science emerged. But Arab science as a factor in European thinking lingered on much longer, almost up to the eve of the Industrial Revolution.

The lesson of history is clear. In the ages following the voyages of Columbus and the intellectual ferment at the end of the Middle Ages, Europe surged forward to penetrate through the barriers of ignorance and acquired a cultural and material leadership. But Europe learnt its lessons from those who were at one time masters of the world. The Muslims were its cultural ancestors in the domain of science, geographical knowledge, discovery, and world commerce.

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Chapter 63: Mathematics and Astronomy

A – Introduction

It is generally recognized that human knowledge took its organized and systematic form with the Greeks. It is equally well known that the Greeks inherited a considerable body of knowledge from their Eastern predecessors, especially the Egyptians, Babylonians, Chinese, and Indians.

The histories of science and culture, written by some Western writers, however, show a gap between the period of the Greeks and the Renaissance. They give the impression that the history of science was blank for nearly one thousand years, and scientific knowledge made a sudden leap, taking a millennium in its stride. These histories ignore the fact that the intervening ages from the first/seventh to the eighth/fourteenth century constituted the era of the Arab and other Muslim peoples.

The latest researches of Muslim and non–Muslim scholars are bringing to light the work of the Muslims in the various branches of knowledge throughout the Middle Ages. These researches are, however, scattered in various journals and books which are not easily accessible to the average educated person. Two good works of reference published are the Encyclopedia of Islam and George Sarton's Introduction to the History of Science. On a thorough study of the information available on the subject, one is struck by the magnitude as well as importance of the contributions made by the Muslims to the various branches of science, especially to mathematics and astronomy.

The magnitude of these achievements is so vast that it is giving rise to another tendency among the historians of science. It is incomprehensible to them that the Arabs who were so backward and ignorant in the centuries preceding the advent of Islam could have become so enlightened and scholarly in such a short time after adopting the new faith. One of the great exponents of this line of thought is Moritz Cantor who has written an encyclopedic history of mathematics in the German language. The chapter on the Arabs in Cantor's book begins as follows:

"That a people who for centuries together were closed to all the cultural influences from their neighbors, who themselves did not influence others during all this time, who then all of a sudden imposed their faith, their laws, and their language on other nations to an extent which has no parallel in history–all this is such an extraordinary phenomenon that it is worthwhile to investigate its causes. At the same time we can be sure that this sudden outburst of intellectual maturity could not have originated of itself."

Laboring under this fixed idea, Cantor proceeds to attribute almost everything done by the Muslim scholars to the Greeks and other nations. We must confess that this kind of argument introduces an extremely dangerous principle in historical research, and can be employed only by one who is predisposed to demolish an exalted and established reputation. If Cantor had really investigated the cause of the "sudden outburst of intellectual maturity" of the Arabs, he would have realized that it was primarily due to the revolution caused by Islam in the whole outlook of the people. We have elsewhere described the attitude of Islam towards knowledge.[1] By making it incumbent upon the believer to acquire knowledge and by enjoining upon him to observe and to think for himself, Islam created an unbounded enthusiasm for acquiring knowledge amongst its followers. The result of this revolution can be best described in the words of Florian Cajori, who says in his History of Mathematical Notation: "The Arabs present an extraordinary spectacle in the history of civilization. Unknown, ignorant, and disunited tribes of the Arabian Peninsula, untrained in government and war, are, in the course of ten years, fused by the furnace–blast of religious enthusiasm into a powerful nation, which in one century extends its dominion from India across northern Africa to Spain. A hundred years after this grand march of conquest, we see them assume the leadership of intellectual pursuits; the Muslims become the great scholars of their time."

It is under this stimulus of the Islamic injunction for acquiring more and more knowledge that the Arabs and other Muslim peoples turned to the learning of the various branches of knowledge, preserving and improving upon the heritage left by preceding civilizations and enriching every subject to which they turned their attention. In the following pages we give an account of their contribution in the domain of mathematics and astronomy. It may be pointed out that this is only a brief chapter in the general history of Muslim philosophy. The account will, therefore, be of a descriptive nature, shorn of all technicalities and confined to some of the fundamental ideas put forward by the Muslim peoples in the fields of arithmetic, algebra, geometry, trigonometry, and astronomy. It is neither possible nor desirable to give here an exhaustive account of the work done by each and every Muslim scholar. We have restricted ourselves to important contributions of the prominent Muslim mathematicians and astronomers.

B – Arithmetic

The Arabs started work on arithmetic in the second/eighth century. Their first task in this field was to systematize the use of the Hindu numerals which are now permanently associated with their names. Obviously, this was an immense advance on the method of depicting numbers by the letters of the alphabet which was universal up to that time and which prevailed in Europe even during the Middle Ages. The rapid development in mathematics in the subsequent ages could not have taken place without the use of numerals, particularly zero without which all but the simplest calculations become too cumbersome and unmanageable. The zero was mentioned for the first time in the arithmetical work of al–Khwarizmi written early in the third/ninth century. The Arabs did not confine their arithmetic to integers only, but also contributed a great deal to the rational numbers consisting of fractions. This was the first extension of the domain of numbers, which, in its logical development, led to the real, complex, and hyper–complex numbers constituting a great part of modern analysis and algebra. They also developed the principle of error which is employed in solving algebraic problems arithmetically. AlBiruni (363–432/973–1040), ibn Sina (370–428/980–1037), ibn al–Sam$ (d. 427/1035), Muhammad ibn Husain al–Karkhi (d. 410/1019 or 420/1029), abu Said al–Sijzi (c. 340–c. 415/c. 951–c. 1024) are some of the arithmeticians who worked on the higher theory of numbers and developed the various types of numbers, such as:

Tamm (perfect numbers), i.e., those which are equal to the sum of their divisors, e.g., 6 = 1 + 2 + 3.

Muta`ddilan (equivalents), i.e., two numbers, the sum of the divisors of which is the same, e.g., 39 and 55: 1 + 3 + 13 = 1 + 5 + 11.

Mutahdbban (amicable numbers), i, e., two such numbers in which the sum of the divisors of one equal the other, e.g., 220 and 284:

1+2+4+71+142=220

1+2+4+5+10+11+20+22+44+55+110=284.

(iv) Muthallathat (triangular numbers), e.g., the numbers 1, 3, 6, 10, 15, 21, 28, 36, 45, which are the sum of the first one, first two, first three, first four and so on, natural numbers.[2]

The Arabs also solved the famous problem of finding a square which, on the addition and subtraction of a given number, yields other squares.[3]

The extent of their knowledge of arithmetic can be gauged from the fact that al–Biruni was able to give the correct value of 1616–1.[4]

C – Algebra

The ancient mathematicians, including the Greeks, considered the number to be a pure magnitude. It was only when al-Khwarizmi (d. 236/850) conceived of the number as a pure relation in the modern sense that the science of algebra could take its origin. The development of algebra is one of the greatest achievements of the Muslims, and it was cultivated so much that within two centuries of its creation it had reached considerable proportions. The symbolical process which it idealizes is still called "Algorithm" in modern mathematics. Al-Khwarizmi himself formulated and solved the algebraic equations of the first and second degree, and discovered his elegant geometrical method of finding the solution of such equations. He also recognized that the quadratic equation has two roots. Ibrahim ibn Sinn (296–335/908–946) worked on geometry, especially on conic sections. His quadrature of the parabola was much simpler than that of Archimedes, in fact the simplest ever made before the invention of the integral calculus in the eleventh/seventeenth century.[5] Abu Kamil huja' al-Misri developed the algebra of al-Khwarizmi, and determined the real roots of quadratic equations and their interpretations. Al-Khazin (d. c. 350/961) solved the cubic equation by employing the conic sections.[6] Abu al-Wafa' (al-Bizjani) (329–388/940–998) investigated and solved algebraic equations of the fourth degree of the type x4 = a, and that of x4 + ax3 = b. Al-Kuhi (fl. c. 378/988) investigated the solvability of algebraic equations. Abu Mahmud al-Khujandi (fl. 382/992) proved that the so-called Fermat's problem for cubic powers, i,e., x3 + y3 = z3, cannot be solved by rational numbers. Ibn al-Laith, who was a contemporary of al-Biruni, solved the problem which leads to the equation: x3 + 13.5x + 5 =10x8, and founded geometrical methods for solving cubic equations. Al-Biruni introduced the idea of "function," which, since the time of Leibniz (eleventh/seventeenth century), has become the most important concept in modern mathematics. Abu Bakr al-Karkhi, who is considered one of the greatest Arab mathematicians, wrote a book on algebra, called al-Faihri, in which he developed approximate methods of finding square-roots; the theory of indices; the theory of surds; summation of series; equation of degree 2n; the theory of mathematical induction; and the theory of indeterminate quadratic equations.

The next important figure is ibn al-Haitham (c. 354–431/c. 965–1039), who is recognized as the greatest physicist and expert on optics of the Middle Ages, and who solved the algebraic equation of the fourth degree by the method of intersection of the hyperbola and the circle.

Then came 'Umar al-Khayyam (c. 430–517/c. 1038–1123), who has recently become the most glamorous figure of the fifth/eleventh century on account of his poetry, but who, according to Moritz Cantor, has better claim to immortality as a very great mathematician. He made what was for his time an uncommonly great progress by dealing systematically with equations of the cubic and higher orders and by classifying them into various groups according to their terms.[7] He described thirteen different classes of cubic equations. He investigated the binomial expression for positive integral indices, i.e., in modern terminology, the expansion of (1 + x)n, when n is an integer. The next significant advance on this problem was made by Newton (eleventh/seventeenth century) when he proved the binomial theorem for any rational number. As stated by Cantor, Khayyam has a very exalted place in the history of algebra.[8]

At about this time, Muslim scholars founded, developed, and perfected geometrical algebra, and could solve equations of the second, third, and fourth degree before the year 494/1100.

Moritz Cantor, who is by no means partial to the Muslims, remarks that “the Arabs of the year 494/1100 were uncommonly superior to the most learned Europeans of that time in the mathematical sciences.[9] He goes on to relate the story that in the seventh/thirteenth century, Frederick II Hohenstaufen sent a special deputation to Mosul to ask Kamal al-Din ibn Yunus (d. 640/1242), the mathematician of a college later on called after him the Kamalic College, to solve some mathematical problems. Kamal al-Din solved these problems for the Emperor.[10] One of the questions solved by him was how to construct a square equivalent to a circular segment.

D -Geometry

In the subject of geometry, the Arabs began by translating the Elements of Euclid and the Conics of Apollonius, thus preserving the work of these Greek masters for posterity. This task was satisfactorily accomplished in the early third/ninth century. Soon after this they launched on making fresh discoveries for themselves. The three brothers, Muhaammad, Ahmad and Hasan, sons of Musa bin Shakir, may be regarded as pioneers in this field. They discovered a method of trisecting an angle by the geometry of motion, thus connecting geometry with mechanics. That this problem is not solvable by means of the ruler and compass alone, has been well known from the time of the Greek mathematicians. The brothers also worked on the mensuration of the sphere and on the ellipse.

In the fourth/tenth century, abu al-Wafa', al-Kuhi, and others founded and successfully developed a branch of geometry which consists of problems leading to algebraic equations of a degree higher than the second. Al-Kuhi solved the problems of Archimedes and Apollonius by employing this new method. Abu Kamil Shuja' al-Hasib al-Misri investigated geometrical figures of five and ten sides (pentagon and decagon) by algebraic methods. This co-ordination of geometry with algebra and the geometrical method of solving algebraic equations, like the application of geometry to algebra by Thabit bin Qurrah, a Sabian astronomer of the court of the Caliph Mu'tadid, was the anticipation of Descartes' great discovery of analytical geometry in the eleventh/seventeenth century. Abu Said al-Sijzi “made a special study of the intersections of conic sections and circles. He replaced the old kinematical trisection of an angle by a purely geometrical solution (intersection of a circle and an equilateral hyperbola)”.[11]

Abu al-Wafa developed the method of solving geometrical problems with one opening of the compass, and of constructing a square equivalent to other squares. He made many valuable contributions to the theory of polyhedra, which is even now considered to be a very difficult subject.[12]

Ibn al-Haitham, known in Europe as Alhazen, also made many discoveries in geometry. His famous book on optics contains the following problem, known as Alhazen's problem: from two points in the plane of a circle to draw lines meeting at a point of the circumference and making equal angles with the normal at that point. This problem leads to an equation of the fourth degree, and ibn al-Haitham solved it by the

aid of a hyperbola intersecting a cirele.[13]

The later Muslim mathematicians developed the geometry of the conic sections to some extent, but their great contribution was connected with the appraisal of Euclid's postulates. It is well known that in each science or logical system (such as the Euclidean geometry), the beginning is made with some fundamental concepts (like points and lines) and a few assertions or statements, called "postulates," which are accepted without demonstration or proof, and on the basis of which further statements (called theorems) are established. Now it is recognized that some of Euclid's postulates are quite self-evident. For instance, no one questions the validity of the statement that the whole is greater than a part or that equals added to equals result in equals. But the same cannot be said about Euclid's parallel postulate. Fakhr al-Din Razi (d. 606/1209) made a preliminary critique of Euclid's postulate, but it was Nasir al-Din Tusi (d. 673/1274), who, in the latter half of the seventh/thirteenth century, recognized the weakness in Euclid's theory of the parallels. In his efforts to improve the postulate, he realized the necessity of abandoning perceptual space. It was in the thirteenth/nineteenth century that such studies, continued by Gauss, Bolyai, Lobachevsky, and Riemann, resulted in the discovery and development of the various non-Euclidean geometries, culminating in the Theory of Relativity in our own time.

E – Trigonometry

Trigonometry, both plane and spherical, was developed to a great extent by the Arabs. Al-Khwarizmi himself compiled trigonometric tables, which contained not only the sine function, as done by his predecessors, but also that of the tangent, for the first time. These tables were translated into Latin by Adelard of Bath in 520/1126.[14]

Al-Battani (d. 317/929), known in Europe as Albategnius, devoted a whole chapter of his book on astronomy to the subject of trigonometry. He used sines regularly "with a clear consciousness of their superiority over the Greek chords. [15]"The previous works contained only the full arc, but al-Battani remarked that it was more advantageous to use the half arc. Cantor considers this "an advance in mathematics which cannot be appreciated highly enough."[16] Al-Battani completed the introduction of tangents and cotangents in trigonometry, and gave a table of cotangents by degrees. He knew the relation between the sides and angles of a spherical triangle which we express by the formula:[17]

$$\cos a = \cos b \cos c + \sin b \sin c \cos a.$$

Abu al-Wafa's contribution to the development of trigonometry is well known. Most likely he was the first to show the generality of the sine theorem relative to the triangles. He introduced quite a new method of constructing sine tables, the value of sin 30' being correct to the eight decimal places. He knew relations equivalent to the present ones for sin (a ± b), and to

$$2 \sin' 2 = 1 - \cos a,$$

sin a = 2 sin cos 2.

He specially studied the tangent; drew up a table of tangents, introduced the secant and the cosecant in trigonometry, and knew those relations between the six trigonometric lines which are now often used to define them.[18]

Al-Khujandi is considered to be the discoverer of the sine theorem relative to spherical triangles. This sine theorem displaced the theorem of Menelaos[19]

Ibn Yunus (d. 400/1009) made considerable contributions to trigonometry, and solved many problems of spherical astronomy by means of orthogonal projections. He discovered the first of those addition-subtraction formulae which were indispensable before the invention of logarithms, namely, the equivalent of

cos a cos b =1/2 (cos (a – b) + cos (a + b)]

He also gave a formula for the approximate value of sin 1'.[20]

Kushyar ibn Labban (fl. c. 361-420/971-1029) took an important part in the elaboration of trigonometry. For example, he continued the investigations on the tangent, and compiled comprehensive tables.[21]

Al-Zarqali (fi.c.420-480/1029-1087) explained the construction of the trigonometric tables, and compiled the Toledan Tables, which were translated into Latin by Gerard of Cremona and enjoyed much popularity.[22]

Al-Hasan al-Marrakushi (fl. c. 661/1262) introduced in 627/1229 the graphic method in trigonometry and prepared the tables of trigonometric functions.

Nasir al-Din Tusi wrote on plane and spherical trigonometry as a subject independent of astronomy.

Baba' al-Din (954-1032/1547-1622) gave in his book trigonometric methods for calculating heights and distances as well as for the determination of the breadth of a river.

F – Astronomy

The Arabs claimed astronomy to be their own special subject. Indeed even at the beginning of Islam, they possessed sufficient astronomical knowledge to be able to use the position of stars in their wanderings and agriculture. But it was only in the second/eighth century that the scientific study of astronomy was begun.[23] From this time up to the eighth-ninth/fourteenth-fifteenth century the contributions of Muslims to astronomy were so numerous that they can be dealt with adequately only in a separate volume. Here we summarize only some of the most important facts.

First of all let us take the observatories. Western historians have pointed out that before the advent of

Islam, only one more or less well-known observatory existed in Alexandria, and even that was not doing much work. In the course of a few centuries, the Muslims erected innumerable well-equipped observatories all over their vast empire. Some of these observatories are as follows:

(i) The solar observatory built by al-Mamum in Iraq in 214/829.

(ii) The Ispahan observatory built by abu Hanifah al-Dinawari (d. 282/ 895).

(iii) The Khwarizm observatory built by al-Biruni.

(iv)The Baghdad observatory of Thabit ibn Qurrah.

(v) The Baghdad observatory built by Caliph al-Mustarshid, where the well-known astronomer Badi' made his observations.

(vi) The observatory erected by ibn Sina.

(vii) The al-Raqqah and Antakiyah (Antioch) observatories where al-Battani made observations from 264/877 to 306/918.

(viii) The banu Musa observatory at Baghdad.

(ix) The Sharaf al-Daulah observatory where al-Saghani and al-Kuhi made their observations.

(x) The Tabitala observatory where abu Isbaq worked and made observations.

(xi) The Buzjan observatory associated with the name of abu al-Wafa'.

(xii) The ibn A'lam observatory built at Baghdad in 351-352/962-963.

(xiii) The Egyptian observatory where ibn Yunus produced his famous almanac.

(xiv) The Mamnni observatory, associated Bataihi (d. 519/1125).

(xv) The Maraghah observatory erected by Nasir al-Din Tusi in 658/ 1259. It is said that several kinds of instruments were installed in this observatory, and that a library containing four hundred thousand volumes was attached to it.

(xvi) The observatory of Taqi al-Din.

(xvii) The Kashmir observatory.

(xviii) The Firuzshahi observatory.

(xix) The Samarqand observatory erected by Sultan Ulugh Beg Mirza in 823/1420.

An account of these observatories lies scattered in various books, such as: Khuldsah Tarik al–'Arab; Tamaddun–i 'Arab; Kitab al–Kitaf w–al–Athar; Sharh Chaghmani; Jami' Bahadur Khani; Mu'jam al–Buldan; Iktifa' al–Qunu'; Fuwat al–Wajnat; Raudat al–safa; Wafayat al–A'yan; Kashf al–Zunun.

Next to the observatories come the astronomical instruments; and the books on history record a large number of instruments constructed by the Arabs and other Muslim peoples. Work on astronomy of such magnitude could not be carried out with the rough instruments existing at the time. They had, therefore, to concentrate all their practical skill on devising elaborate instruments for making various observations. These have also been described in the books mentioned above. We shall confine ourselves to the enumeration and description of some important instruments.

(i) Libnah, built on a square base, served to measure the declination, latitude, and distances of the stars.

(ii) Halqah I'tidal (Meridian Circle), fixed in the plane of the meridian, and devised to determine the distances of the heavenly bodies.

(iii) Dhat al–Autar, constructed by Taqi al–Din, served as an. alternative for the Meridian Circle which was useful during night as well as day.

(iv) Dhat al–'Alq (the Astrolabe) was one of the most important instruments. It consisted of two circles, one of which represented the ecliptic and other the celestial meridian.

(v) Dhdtal–Samt w–al–Irtifa' (Alt–azimuth) consisted of a semi–circle and bad the diameter of an equi–surfaced cylinder. Taqi al–Din has mentioned it in his work, to have been constructed by Muslim astronomers.

(vi) Dhat al–Shu'batain.' It had three faces on one base and served to determine the altitude of the heavenly bodies.

(vii) Dhat at–Jaib consisted of two faces and was used for the determination of the altitude.

(viii) Al–Mushabbah bi al–Natiq constructed by Taqi al–Din and used for determining the distance between two stars.

(ix) Tabaq al–Manatiq constructed by Ghiyath al–Din Jamshid and used for determining the position of the stars, their latitudes, distance from the earth, and movement. It was also useful for obtaining data relating to lunar and solar eclipses.

(x) Zarqalah constructed by Shaikh Isbaq ibn Yabya, generally known as al–Naqqash al–Andalusi (the Spanish painter). It was a very useful instrument for observing the movement of the heavenly bodies.

(xi) Dhat al–Kursi constructed by Badi' of the Astrolabe (Badi' al–Asturlabi), as described by 'Abd al–Rabman al–Sufi.

(xii) Al-Alat al-Shamilah constructed by al-Khujandi and used for determining the latitudes.

(xiii) The several types of quadrants as described in Kashf al-Zunun.

(xiv) Asturlab Sartani Mijnah, the transit instrument described by Muhammad ibn Nasr and Mansur ibn 'Ali.

(xv) Al-Jaib al-Gha'ib consisting of a semi-circle the circumference being divided equally.

(xvi) Suds-i Fakhri, a sextant associated with the name of Fakhr al-Daulah Dailami.

Now we shall describe briefly the investigations carried out by the Muslim astronomers. Although the work of regular observations and construction of astronomical instruments was started as early as the second/eighth century by Ibrahim al-Fazari (d. c. 180/796), the most brilliant period of Muslim astronomy commenced in the early part of the third/ninth century in the observatories constructed by the Caliph al-Mamiin (198-218/813-833). The observatory of Baghdad under Yahya bin abi Mansur (d. c. 216/831) made systematic observations of the heavenly bodies and found remarkably precise results for all the fundamental elements mentioned in Ptolemy's Alma jest, such as the obliquity of the ecliptic, the precession of the equinoxes, the length of the solar year. After recording these observations, Yahya compiled the celebrated "Tested Tables."[24] He was also the author of several works on astronomy.

Under the orders of al-Mamun, the Muslim astronomers carried out one of the most delicate and difficult geodetic operations, the measuring of the arc of the meridian. The mean result gave 562/3 Arab miles as the length of a degree of meridian, which is a remarkably accurate value, for the Arabic mile is 6,473 ft. This value is equal to 366,842 ft., exceeding the real length of the degree between 38° and 36° latitudes by 2,877 ft.

Habash al-Hasib was an astronomer under al-Mamun and al-Mu'tasim; he compiled three astronomical tables, including the famous "Verified Tables." Apropos of the solar eclipse of 214/829, Habash gave the first instance of a determination of time by an altitude which was generally adopted by the astronomers.[25]

'Ali bin 'Isa al-Asturlabi was a famous maker of astronomical instruments. He took part in the degree measurement ordered by al-Mamun, and wrote one of the earliest Arabic treatises on the astrolabe.[26]

Al-Marwarrudhi was one of those who took part in the solar observations made at Damascus in 217-218/832-833.[27]

The three sons of Musa bin Shakir made regular observations in the observatories in Baghdad between 236/850 and 257/870.[28]

Al-Farghani was one of the most distinguished astronomers in the service of al-Miman and his successors. His famous work, Kitab fi Harakat al-Samawiyyah wa Jawani' 'Ilm al-Nujum (Book on

Celestial Motions and the Complete Science of the Stars), was translated into Latin in the sixth/twelfth century. It exerted marked influence on European astronomy. He accepted Ptolemy's theory and value of the precession but was of the view that it affected not only the stars but also the planets. He determined the diameter of the earth to be 6,500 miles, and found the greatest distances and also the diameters of the planets. 29

Al-Mahani (d. between 261/874 and 271/884) made a series of observations of lunar and solar eclipses and planetary conjunctions during the years 239-252/ 853-866; these were later used by ibn Yunus.30

Al-Nairizi (d. c. 310/922) compiled astronomical tables, made systematic observations, and wrote a book on atmospheric phenomena. He wrote a treatise on the spherical astrolabe which is very elaborate and is supposed to be the best Arabic work on the subject.31

Thabit ibn Qurrah published solar observations, explaining his methods. He revised the theory of the movement of the sun.32 To the eight Ptolemaic spheres, he made the addition of a ninth one (primum mobile) to account for the imaginary trepidation of the equinoxes, which was, however, later found to be an erroneous theory.33

Al-Battani was one of the greatest astronomers of the Middle Ages. He wrote many books but his main work, the famous De Numeris stellarum et motibus, exerted great influence in Europe up to the time of the Renaissance. From 264/877 onwards he made astronomical observations of remarkable range and accuracy. His tables contain a catalogue of fixed stars for the year 267-68/880-81. He investigated the motion of the sun's apogee and found that its longitude had increased by 16° 47' since the time of Ptolemy. This implied the discovery of the motion of the solar apsides, and of the slow variation in the equation of time. He determined many astronomical coefficients with remarkable accuracy, and corrected the previous values of the precession of equinoxes and the obliquity of the ecliptic. He proved the possibility of the annular eclipses of the sun. He did not believe in the trepidation of the equinoxes, although the followers of Copernicus at a much later date did believe in it. Modern astronomy has shown that the Copernicans were wrong.34 He determined the moon's nodes and discovered the wobbling motion of the earth's orbit.35

Ibn Amajur (abu Qasim 'Abd Allah) together with his son abu al-Hasan 'Ali made many observations between 272/885 and 321/933 which were recorded by ibn Yunus. They produced many astronomical tables, including the table of Mars according to Persian chronology.36 Abu al-Hasan discovered that the moon's distance from the sun is not constant as assumed by Ptolemy.37

Al-Kuhi was the leading astronomer working in 378/988 at the Sharaf al-Daulah observatory.38

'Abd al-Ralrman al-Sufi (291-376/903-986) was one of the most eminent Muslim astronomers. His chief work, Kitab al-Kawdkib al-Thabitah al-Musawwar (Book of the Fixed Stars Illustrated), is regarded as one of the three masterpieces of Muslim observational astronomy, the other two being one by ibn Yanus and a work prepared for Ulugh Beg.39

Ibn al-A'lam (d. 375/985) has been praised for the accuracy of his observations; his tables continued to be very popular for at least two centuries.[40] He determined the stellar motion by observing that the stars traverse one degree in seventy solar years.[41] He also determined the latitude and longitude of many stars,[42] and measured the greatest declination of the planet Mercury.[43] He found that the earth is spherical and may, therefore, be supposed to be inhabited everywhere. [44] He discovered the satellites of Jupiter, discussed the motion of the sun-spots, and determined the eccentric orbit of the comets.[45]

Abu al-Wafa' al-Buzjani determined accurately the obliquity of the ecliptic in 344/955, and calculated the variation in the moon's motion. There is a difference of opinion about his discovery of the third liberation in the moon's motion. Some of the older writers believed that he discovered the third liberation and that Tycho Brahi rediscovered it in the tenth/sixteenth century.[46] But Sarton remarks that abu al-Wafa' did not discover this variation, but simply spoke of the second part of the evection, which is essentially different from the variation discovered by Tycho Brahi.[47]

Al-Khujandi made astronomical observations, including a determination of the obliquity of ecliptic, in Rayy, in 384/994.[48]

Maslamah ibn Ahmad al-Majriti (d. c. 398/1007) edited and corrected the astronomical tables of al-Khwarizmi replacing the Persian by the Arabic chronology. He wrote a treatise on the astrolabe and a commentary on Ptolemy's Planisphaerium both of which were later translated into Latin.[49]

Ibn Yunus has been described by Sarton as the greatest Muslim astronomer. A well-equipped observatory in Cairo enabled him to prepare improved astronomical tables, called al-Zij al-Kabir al-Hakimi, completed in 398/1007. They describe observations of eclipses and conjunctions, old and new, and improved value of astronomical constants (obliquity of the ecliptic 23° 35'; longitude of the sun's apogee 86° 10'; solar parallax reduced from 3' to 2'; precession of the quinoxes 51.2" per annum), and give an account of the geodetic measurements made under al-Mamun's orders.[50] He is specially noted for his method of longitude determination. As time difference is equivalent to longitude difference, the determination of local time at the same instant at two stations widely separated in longitude is sufficient. But there were no telegraphs or radio signals to give simultaneity. Ibn Yanus proposed and used a signal from the moon-the first contact of a lunar eclipse. In this way he corrected many errors in longitudes in Ptolemy's geography.[51]

Al-Biruini is regarded by Western historians of science as "one of the greatest scientists of all times whose critical spirit, toleration, love of truth, and intellectual courage were almost without parallel in medieval times."[52] He made accurate determination of latitudes and longitudes and also other geodetic measurements. He discussed in his book Qanun al-Mas'udi for the first time the question that the earth rotates around its axis. The translation of the relevant Arabic passages is as follows: "When a thing falls from a height, it does not coincide with the perpendicular line of its descent, but inclines a little, and falls making different angles. When a piece of earth separates from it and falls, it has two kinds of motions: one is the circular motion which it receives from the rotation of the earth, and the other is straight which it

acquires in falling directly to the centre of the earth. If it had only the straight motion, it would have fallen to the west of its perpendicular position. But since both of them exist at one and the same time, it falls neither to the west nor in the perpendicular direction, but a little to the east." This book of al-Biruni, viz., al-Qanun al-Mas'udi, was written in 42211030, and gave the true explanation of the rising and setting of the heavenly bodies as being due to the rotation of the earth, thus pointing to the error in the geocentric conception of the solar system. The heliocentric doctrine was not entirely unknown to the Arabs, who knew that the earth revolved round the sun and that the orbits of the planets were elliptic.[53] It should be noted that Copernicus gave the scientific formulation and detailed working out of the heliocentric theory some three centuries later.

Al-Zarqali was "the best observer of his time. He invented an improved astrolabe called safihah; his description of it was translated into Latin, Hebrew, and many vernaculars. He was the first to prove explicitly the motion of the solar apogee with reference to the stars; according to his measurements it amounted to 12.04" per year (the real value being 11.8")." He edited the planetary tables called the "Toledan Tables." [54]

'Umar Khayyam was called to the new observatory of Rayy in 467/1074 by Sultan Malik Shah Jalal al-Din Saljuqi to reform the old calendar. Moritz Cantor remarks that the calendar prepared by 'Umar Khayyam, called alTarikh al-Jalali, was more accurate than any other proposed before or after his time. Its date was 10th Ramadan 471, i.e., 16th March 1079. The modern interpretation of Khayyam's calendar is that eight intercalary days should be introduced in thirty-three years, resulting in an error of one day in about 5,000 years. The Gregorian calendar leads to an error of one day in 3,330 years.[55]

Chingiz Khan erected a magnificent observatory at Maraghah near Tabriz far surpassing any built by his predecessors. Nasir al-Din Tusi was the greatest genius of this institution. He was quite original and independent, and criticized Ptolemy quite severely, "paving the way for the overthrow of the geocentric system."[56]

Ulugh Beg, grandson of Timur, established an observatory at Samarqand, Turkestan, in 823/1420, which was best equipped. A great work produced at this observatory was an independent star catalogue, known as the "Ulugh Beg Tables," based entirely upon new observations, the first in about sixteen hundred years, i.e., since the time of Hipparchus, second century B.C. The positions were given to the nearest minute of arc, and attained a high degree of precision for that period. Instruments used in this observatory are considered the best made up to that time.[57] It is said that his quadrant was so large that its diameter was equal to the height of the St. Sophia Church in Constantinople. This work on astronomy is regarded as one of the best books of the Muslim astronomers. It was written in 841/1437, and from it one can have a fair account of the knowledge possessed by the Muslims in the ninth/fifteenth century. The first part deals with the general principles of astronomy. The latter part contains the practical methods of calculating the lunar and solar eclipses and the construction of the tables and their applications; a list of the stars; the motion of the sun, the moon, and the planets; and the terrestrial

latitudes and longitudes of the big cities of the world.[58]

The Mughuls inherited their fondness for astronomy from Ulugh Beg. Farishtah remarks that Humayun was a keen astronomer and spent a good deal of time in its pursuit.[59] An observatory was founded in Delhi under the orders of Muhammad Shah in 1137/1724, which was in the charge of the wellknown mathematician Mirza Khair Allah. By this time the West had made great progress in astronomy as in other branches of knowledge, and therefore a commission consisting of the ablest men of the time was sent to Europe to study the new methods followed there and new results obtained through the then latest researches. The commission brought back with it some telescopes and other instruments and a few books prepared in Europe. The King of Portugal also deputed a European astronomer to go to Delhi with the commission. But when his data were checked at the Delhi observatory, local people detected errors and made corrections in his tables and calculations of the lunar and solar eclipses. This is ascribed to the fact that the instruments made in Europe at the time were of a smaller size than those available in the Delhi observatory.[60]

The Nizamiyyah observatory was erected at Hyderabad Deccan in the thirteenth/nineteenth century, and was the biggest institution of its kind in the East. It contained a sixteen-inch refracting telescope, a transit instrument, a Meridian circle, and a good deal of other equipment essential for a modern observatory. Its unique position was recognized by international organizations, and it had an important share in the preparation of the International Catalogue of Stars. After the establishment of the Osmania University, it became a constituent unit of that University.

The influence of the Muslims in this field is traceable from the many Arabic names and words that have become an integral part of the astronomical sciences. A long list of such words can be compiled, but it would be sufficient to mention a few: almanac (al-munakh), almacantar (al-muqantarah), nadir (nadir), zenith (samt al-ras), algol (al-ghul), altair (al-ta'ir), aldebaran (aldabaran), fomalhaut (jam al-hut), denab (dhanab), vega (waqi'), and the various names of Muslim astronomers given to the craters of the moon.[61]

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Chapter 64: Physics and Mineralogy

The Muslims contributed enormously to exact sciences such as mathematics, astronomy, physics, chemistry, botany, and zoology since they had succeeded in acquiring the knowledge of the sciences which had developed before the advent of Islam.

Abu Yusuf Ya'qub ibn Ishaq al-Kindi1 was the first Muslim scientist-philosopher. His pure Arabian descent earned him the title "The Philosopher of the Arabs." Indeed, he was the first and last example of an Aristotelian student in the Eastern Caliphate who sprang from the Arabian stock. His principal work on geometrical and physiological optics based on the optics of Euclid in Theon's recension was widely used both in the East and the West until it was superseded by the greater work of ibn al-Haitham. He was the first Muslim to write in Arabic a book on music in which he designed a notation for the pitch of notes. Al-Kindi's three or four treatises on the theory of music are the earliest extant works in Arabic showing the influence of Greek writings on that subject. Of al-Kindi's writings more have survived in Latin translations than in the Arabic original.2

An observatory was opened by the three sons of Musa ibn Shakir (236-257(850-870) in their house at Baghdad. The Buwaihid Sultan Sharaf al-Daulah (372-379/982-989) instituted another in his palace at Baghdad where 'Abd al-Rahman al-Sufi (d. 376/986), Ahmad al-Saqhhani (d. 380/990), and abu al-Wafa' (d. 387/997) carried out their astronomical observations. At the Court of another Buwaihid, Rukn al-Daulah (320-366/932-976) of al-Rayy, flourished abu Ja'far al-Khazin of Khurasan who ascertained the obliquity of the ecliptic and solved a problem in Archimedes which led to the discovery of a cubic equation. Other astronomers made a systematic study of the heavens in Shiraz, Nishapur, and Samarqand.3 Banu Musa published a work on the balance.

'Utarid ibn Mubammad al-Hasib wrote a book on lapidary which is reckoned among the oldest Arabic works on this subject; abu Zakariya al-Razi quoted from 'Utarid in his famous book al-Hdwi. Al-Razi the Iranian was one of the greatest medical men of the Middle Ages. He was an expert chemist and

physicist.

Al–Hakim the Fatimid was personally interested in astronomical calculations. He built on the Muquttam an observatory to which he used to ride before dawn. The intellectual lights of his Court were 'Ali ibn Ydnus (d. 400/ 1009), the greatest astronomer Egypt has ever produced, and abu 'Ali alHaitham (Latin Alhazen), the principal Muslim physicist and student of optics. The latter was undoubtedly the foremost physicist of the Middle Ages. His researches into geometrical and physiological optics were considered to be the most important and useful up to the time of Renaissance. His explanation of the vision and functions of the eye was far in advance of the ideas of the ancients. The chief work for which he is noted is one on optics, Kitab al–Manazir, of which the original is lost but which was translated into Latin in the sixth/twelfth century. Almost all the medieval writers on optics in the West based their works on ibn Haitham's Opticae Thesaurus. In this work he opposed the theory of Euclid and Ptolemy that the eye sends out visual rays to the object of vision, and presented experiments for testing the angles of incidence and reflection. In certain experiments he approached the theoretical discovery of magnifying lenses which were manufactured in Italy centuries later.4

Ibn al–Haitham was the greatest Muslim physicist and one of the foremost opticians of the world. He found out the law of refraction in transparent bodies; laws of reflection of light; spherical and parabolic aberrations; and the law of refraction which later came to be known as Snell's Law. He discussed the magnifying power of a lens, refraction of light in the earth's atmosphere, and beginning or termination of twilight when the sun is 19° vertically below the horizon. He tried by these means to estimate the height of the homogeneous atmosphere. He gave a better explanation of vision, though he erroneously assumed the lens of the eye to be the organ of sight. Later on ibn Rushd corrected this error and showed that sight is the function of the retina. Ibn al–Haitham explained the vision of a body by the aid of two eyes and the more magnified appearance of heavenly bodies when near the horizon than when vertically higher.

Muslim scientists evinced much interest in the determination of specific gravity of bodies. At Ghaznah in eastern Afghanistan lived abu al–Raiban Muhammad ibn Ahmad al–Biruni (363–440/973–1048), considered one of the most original and profound scientists that the medieval world produced in the domains of physical and mathematical sciences. Al–Biruni found accurately the specific gravity of eighteen different precious substances and metals. He realized that the velocity of light was enormously greater than that of sound. Al–Biruni developed the mathematical part of geography, improved mensuration, and determined quite accurately the latitude and longitude of a number of places; he devised easy methods of stereographic projection. He showed how water flows in natural springs and how it comes out in artificial wells, and explained these facts in accordance with the laws of hydrostatics. His observations led him to the conclusion that the Indus Valley was at one time a part of the sea which became solid by the deposit of alluvial soil.

The most illustrious name in Arabic medical annals after al–Razi is that of ibn Sina (Latin Avicenna)

(370–428/980–1037). Al–Razi was more of a physician than ibn Sina, but ibn Sina was more of a philosopher. In this physician, philosopher, philologist, and poet, medieval Arab science culminates and is, one might say, incarnated. Ibn Sina wrote on the theory of numbers. For accurate measurement of distances he invented an apparatus involving the same principle as our modern Vernier. He made a masterly study of a number of physical subjects like motion, contact, force, vacuum, infinity, light, and heat. Ibn Sina expressed his views on all the information that could be gathered in physics philosophically. He showed that however great the velocity of light may be, it must be limited. He did valuable research in music also, but his principal subject was medicine for which he earned the title of Shaikh al–Ra'is.

Jalal al–Din Malik Shah patronized astronomical studies. He established in 467/1074 at Rayyan observatory where there was introduced into the civil calendar an important reform based on an accurate determination of the length of the tropical year. To this task of reforming the Persian calendar he called to his new observatory the celebrated 'Umar al–khayyam. Umar al–Khayyam was born between 430/1038 and 440/1048 at Nishapur where he died in 517/1123. He is known to the world primarily as a Persian poet. Very few people realize that he was a first–class mathematician and astronomer as well. The researches of al–Khayyam and his collaborators resulted in the production of the calendar named, after his patron, al–Tarikh al–Jalali, which is even more accurate than the Gregorian calendar. As men–tioned in the preceding chapter, the latter leads to an error of one day in 3,330 years whereas al–Khayyam's leads to an error of one day in about 5,000 years. 'Umar al–Khayyam performed experiments to find the specific gravity of various substances.

The attraction of iron by natural magnet was known to the Greeks; magnet's acquiring a definite direction when suspended freely was known to the Chinese. But it appears that this property was first utilized by Muslims in their marine navigation. Muhammad al–'Aufi was the first to mention it in his Jawami'. The directive position of the magnetic needle was known to the Chinese from a very long time, but they used it only for geomantic purposes. Most probably Muslim sailors were the first to employ it in navigating their ships as is evident from Chu Yu's account of sailing vessels using it between Canton and Sumatra.

Nasir al–Din Tusi's most brilliant pupil Qutb al–Din Shirazi (634–711/ 1236–1311) wrote Nihayat al–Idrak fi Dirayat al–Aflak which is largely a development of the former's Tadhkirah, a work on astronomical topics; it also contains valuable discussions on geometrical optics like those on the nature of vision and the formation of the rainbow. He was the first scientist to give a correct and clear explanation of the formation of a rainbow. The primary bow was explained by him to be due to two refractions and one internal reflection, and the secondary to two refractions and two internal reflections of solar rays in minute spherical drops of water suspended in the air; essentially the same explanation was given by Descartes in the eleventh/ seventeenth century. The colours of the rainbow for their correct interpretation had to wait Newton's experiments on the dispersion of light.

Kamal al–Din Farisi (d. 720/1320) was a famous pupil of Qutb al–Din and under his inspiration wrote

Tangih al-Mandzir (a commentary on ibn alHaitham's classical work on optics, Kitab al-Mandzir), which was published with notes by the Da'irat al-Ma'irif, Hyderabad, in 1928-30.

Muslim scientists were deeply interested in Archimedes' works on mechanics and hydrostatics. In these subjects they determined the density of a number of substances. Sanad ibn 'Ali, al-Biriini, 'Umar al-Khayyam, Muzaffar alAsfuziri[5] and several others did some work on these branches of physics, but the most important work was done by 'Abd al-Rahman al-Khazini in his Mizan al-Hikmah, written in 618/1221 and considered among the masterpieces of the Middle Ages. In this work al-Khazini discussed mechanics, hydrostatics, and physics in a masterly way. He gave tables of specific gravities of liquid substances (on the lines adopted by al-Biruni) and detailed studies of the theory of gravitation (universal force directed towards the then considered centre of the universe, i.e., the centre of the earth); weight and buoyancy of air; rise of water in capillary tubes; aerometric measurement of densities and the temperature of liquids; theory of the lever; levelling by balance; and measurement of time.

The Muslims took keen interst in clocks to find out the correct times for prayers. Their artisans acquired great mastery in this work, as may be judged from Harun al-Ras_bid's presenting Charlemagne with a water-clock in 192/807.

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5. G. Sarton, Introduction to the History of Science, Vol. 11, p. 216.

Chapter 65: Chemistry

Alexandrian Alchemy.-With the advent of Islam, the Arab tribes, many of them still nomadic, were united into one nation. Their conflicts with the neighbouring peoples which used to end as skirmishes bringing immediate defeat on the scattered tribes, now changed into regular wars often crowning them with success. What that meant can be realized from the fact that within a hundred years of the Prophet's death, which occurred in 11/632, Islam had spread from Spain in the West to Sind in the East. As an advancing nation the Arabs came in contact with different races, and when Egypt was conquered, during the regime of the Caliph 'Umar, in 21/641, they came to know the Hellenized Egyptian culture as it then existed. Its centre was Alexandria, founded by Alexander in 332B.C.

Very soon it became an emporium of international trade attracting merchants from all over the world. Above all, the Greeks had migrated there in numbers, giving rise to a mixed culture of Egyptian and Greek origin. The Egyptians used idols in their temples and chapels, preferring those of bronze, particularly when they were gilded. The artisans of Alexandria excelled in this craft, and the manufacture of gilded bronze statues apparently became a lucrative industry.

From gilding bronze some of the artisans began to dream of making gold itself and devoted their main attention to achieve this end. Thus arose alchemy, not found before either in Egypt or in Greece. It was existing when the Arabs acquired Egypt and was one of the elements of Alexandrian culture which diffused into Arabian civilization.

There are several treatises and even books which suggest that Greek science, which flourished between 300 B. C. and 200 A. D., subsequently passed on to the Arabs who functioned as its intermediate preservers delivering it to Europeans during the Middle Ages. Such is the accepted origin of alchemy.

It now becomes necessary to offer a brief sketch of alchemy as it was founded at Alexandria. The oldest existing manuscript on alchemy is not prior to about 391/1000. But it is supposed to be a copy of a work originally written in about 100 A. D. During this early period alchemy was a semi-secret science pursued by a few obscure persons. As Taylor[1] says, "although the earlier alchemists wrote in Greek, they were not Greeks, but in all probability Egyptians or Jews. They were not Christians." And what did they call their art? This knotty problem is conspicuous by its absence in Taylor's book. When Wilson[2] came to review it, he supplied the missing information on "the derivation of the Greek name of the art." "The word unmistakably goes back to the craft of the foundryman and metal-worker.

First, there is the Greek verb cheo (xiw), to melt and pour, as in the casting of a bronze statue, then its derivative chump, an ingot of cast metal, and finally from this another derivative chumeia, the art of preparing metal ingots. This in time became a technical term for the artificial preparation of the precious metals, but at first, as in Zosimus, about 300 A.D., it acquired a qualifying phrase, the chumeia of silver or gold. Before the Arabic period, however, chumeia could stand alone to denote the art of transmutation.

Also before Arabic times, about 81/700 or earlier, it seems to have been confused with chemia, apparently a Greek derivative of the Egyptian word chem, meaning black. The reasons are obscure but the fact of the confusion is hardly to be questioned. Later, the Arabs took over both spellings, chumeia and chemia, prefixed their own definite article al, and handed the word on to the Europeans in about the sixth/twelfth century." Thus kimiya is the Arabicized form of the dual word chumeia/chemia.

The Greek and Arabic Terms Compared.–Now it is even more important to know what the Arabs received under the name kimiya from the Greekspeaking alchemists–to know what the word chemeia signifies and how the Arabic word kimiya compares with it in meaning. Gildemeister[3] explains that "kimiya with the Arabs primarily is not an abstraction (or the science of alchemy) but the name of a

substance, of an agent, by which transmutation of metals is brought about, thus of the Philosophers' Stone, or rather of preparations made out of it. It is thus a synonym of ilcsir which likewise signifies a transforming agent. By contrast chumeia is never used by the Greeks in any other sense than transmutation of metals."[4]

There are two synonyms in Greek, chemeia and chumeia. Gildemeister refers to the use only of the latter, apparently taking it as identical with the former. In Arabic there are two terms kimiya and iksir, the latter not being represented in Greek literature. In fact, iksir occurs far more in Arabic than the word kimiya. Iksir or al-iksir has been Europeanized into elixir which has come to mean as an agent for prolonging life. According to Taylor,[5] "the alchemy of China was primarily concerned with the prolonging of life"; he adds[6] in this connection that "it is very probable that the Arab alchemists received some information about it. It is certainly notable that the idea of the elixir as a medicine prolonging life was present amongst the Arabs and not known to their Greek-speaking predecessors."

P. Kraus[7] published a voluminous work on Jabir. Its reviewer[8] correctly noticed that "as to the origin of all those theories, Kraus maintains that not much of Jabir's alchemy can be traced to the extant fragments of Greek alchemistic literature, and that there are certain features in his alchemistic knowledge which are definitely unknown in classical antiquity." There has prevailed so much prejudice in favour of Greek that even the word "elixir," absent in Greek and therefore inconceivable as a loan-word in Arabic, has been given a Greek root. Iksir has accordingly been said to have come from the Greek word ksiron, meaning dry, and has been made to connote dry powder, while elixir means essence, spirit, or fluid. How the Arabs coined their word from Greek cannot be explained. All this tends to show that the primary source of Arab alchemy lies somewhere away from Alexandria.

The Urge to Pursue Alchemy.-There were two types of seekers after longevity. First, the ascetic who was his own grocer, cook, and doctor and to whom infirmity of old age meant lingering death. The second was represented by a prince who had wealth and power and desired long life, only to enjoy his possessions fully. Though for different reasons, the Sufis, the nearest to ascetics, also indulged in alchemy. In fact, Wiedemann[9] remarks that "the study of alchemy has had one undesirable result inasmuch as the representatives of the mystic movement in Islam studied alchemy, e.g., ibn al-'Arabi."

This, however, was expected, and the converse is also true, for about the master of alchemy, Jurji[10] states that "later tradition makes Jabir ibn Hayyan the first Sufi." Kraus[11] explains how Jabir, the alchemist, became interested in Sufism. He writes, "Alchemy is never practised by Jabir for the object of accumulating wealth and acquiring the power of gold. Its real mission is to bring about salvation." And how was this possible? He continues to say that "Salvation in the Manichaean sense means to oppose in all spheres of life the fatal mixture of light and darkness and to free the light from dark particles. The Manichaean natural history, especially alchemy, aims at the great work of salvation."

Let us now turn to the wealthy and the worldly class. According to Martin,[12] "Emperor Ts'in-She-Hwang (B. C. 220), the builder of the great wall of China, is the earliest historical sovereign who became a

votary of alchemy." There are a few more Chinese emperors who believed in alchemy; a couple of them had to pay with their lives for trying alchemical drugs. In the life of Chingiz Khan it is stated that he sent for a Taoist priest all the way from China to Central Asia, where he was encamped, to discuss if life could be prolonged for ever.

Khalid, the Umayyad Prince (40–85/660–704).–There is a sub–class among the well–to–do who would like to enjoy as sport the transmutation of a base metal into gold. Such a motive on the part of a young prince can be easily imagined and one such prince appears to have been Khalid, son of the Caliph Yazid I and grandson of Mu`awiyah. In the Arabic literature on alchemy, compiled about 377(987 by the famous bookseller al–Nadim, it is stated, as translated by Fuck,[13] that "Khalid was the first Muslim for whom medical, astronomical, and (al)chemical writings were translated into Arabic. ..." He wrote a number of treatises and books. Al–Nadim also saw the following four of his books: (1) The Book of Amulets, (2) The Great Book of the Scroll, (3) The Small Book of the Scroll, and (4) The Book of the Testament to His Son on the Art.

Introduction of Alexandrian Alchemy.–When Khalid wanted to learn alchemy at Damascus, his capital, he sent for a teacher from Alexandria, a Christian monk named Marianos, a pupil of another alchemist, also of Alexandria, named Stephanos, who lived in the reign of the Byzantine Emperor Herkleios I (610–641 A.D.). That the best available teacher of alchemy at the time was a monk is in full harmony with what has been said of alchemy and of Sufis here. A monograph of over fifty pages has been devoted to Khalid by Professor Ruska,[14] the famous German historian of alchemy.

The Oldest Alchemy and How it Reached the Muslim World.–A series of authors have established that alchemy is indigenous to China. Among the older writers may be mentioned Martin,[15] while the best historical evidence has been offered by Dubs.[16] From China alchemy reached Alexandria by the sea–route. In South China, the name of the dynasty that built the Great Wall is pronounced Ts'in, which became Tseen, the Arabic name for China. Likewise, the South Chinese term, kim–iya, Gold–making Juice, became the loan–word Icimiya, upon which Schneider[17] has published the most recent communication. It is probable that the word kimiya, instead of having been borrowed direct from the Chinese, was taken over from Arabic into Greek, being Hellenized there as chemeia. This is how it was written, but very probably its pronunciation was similar to that of kimiya. The pre–Islamic Arabs, bringing silk from South China, all along the sea–route, also imported Taoism and alchemy as the cults of immortality. To the pagan mind alchemy made a special appeal and this explains how it came to be imported. Some of the Arab alchemists of the type of what we call fakirs must have settled at Alexandria where it gradually spread mainly among monks and other ascetics. We have just seen that even centuries afterwards this character did not change for it was the monks who brought Alexandrian alchemy to Damascus.

Another way in which Chinese alchemy reached the Islamic world was via land–route. In Christianity one church tried to suppress another; and a community, speaking Syriac and calling themselves Nestorians,

sought protection from outside and established an academy at Jundi-Sbapiir, in SouthWest Persia. The Nestorians migrated even up to China so that there must have been contact between the Nestorians of China and those of Persia. As an impact of Christianity upon Zoroastrianism there resulted the religion of Mani. The Manichaeans with their philosophy of dualism were close to the alchemists as they also believed in a similar doctrine. Briefly, Nestorian and Manichaean Persia was in intimate contact with China and was responsible for a fresh influx of Chinese alchemy. The Jundi-Shapur academy was by no means dead during the reign of Harun al-Rashid to which period Jabir also belonged. When Kraus and others notice that there was much in Jabir that was not found in Greek alchemy we have to turn to Chinese influence in Persia at that time.

The Beginning of Classical Islamic Alchemy.-The Umayyads ruling from Damascus had become very unpopular. There were plots to replace them by the 'Abbasid dynasty. Such agents were active as far east as the province of Khurasan in Persia. One such emissary was Jabir's father, Hayyan, a druggist by profession. Jabir was born at Tds, in Khurasan, about 104/722, during the family's sojourn in Persia. When Jabir was a mere boy, Hayyan was arrested for his activity and had to pay with his life. Khurasan being the border province was a centre of foreign cultures like Mahayana Buddhism and other schools of mysticism. It may be pointed out in this connection that it was again at Tus, in Khurasan, where Imam Ghazali, one of the great Muslim mystics, was born. Above all, we find in Jabir one of the first persons to be formally called a Sufi and the first among Muslims to be recognized as the master of alchemy. Both alchemy and Sufism appear to come from the same source and to have long remained together. Some of those who have written upon the history of Sufism have noticed that in its early stages it flourished only where Neo-Platonism was found. Likewise, writers on the history of alchemy have also observed its earlier co-existence with Neo-Platonism.

While Sufism and Neo-Platonism can be directly and easily connected with each other, as pertaining to the same system of thought, it requires inquiring into what alchemy originally was in order to admit that alchemy did not develop from one craft to another, from gilding to goldmaking, but was a kind of applied mysticism. The Sufis wanted immortality in the next world by spiritual exercises; the alchemists wanted it by virtue of drugs in this world. This motive at once becomes evident by a study of Chinese alchemy which represents its earliest phase. Instead of associating Islamic alchemy with Alexandrian Neo-Platonism it is more fruitful to connect it with Manichaeism and with schools of mysticism influenced by Chinese mysticism.

Khurasan, rather than Egypt, was the centre from where Islamic alchemy got its real initiation. Between Khalid ibn Yazid and Jabir bin Hayyan was a period of seventy-five years. Historically, the political power shifted from Damascus to Baghdad. At this latter centre the so-called Persian influence, but really Chinese-Manichaean doctrines, rapidly promoted Islamic alchemy. Those who compare Greek alchemy with that of Jabir notice an obvious difference between the two. If comparison is made between the doctrines and achievements of Muslim alchemists with those of China, the difference is very much less. In so far as even the alchemy of Alexandria is Chinese, though a degenerated form of it, it still has

features enough for it to stand comparison with that of China.

With Jabir begins a school of alchemy much nearer to its original source, with its centre at Tus, instead of at Alexandria. The first feature to be noticed here is that the ideal seems to be not to make gold but to prepare panacean drugs. Jabir's reputation as a physician grew after the services he had rendered at the Court of Harun al-Rashid. His alchemical writings on the contrary were misunderstood even by a savant like ibn Khaldun[18] who remarked that they read like puzzles.

The effect of the chemical mysticism, which was alchemy, was demonstrated in the form of life-saving iksirs; the theory of applied mysticism was obtained from other systems of mysticism, such as Sufism and Manichaeism. The existing literature shows that alchemy proposed to make gold only and this seems to be true of Greek alchemy. The Arab alchemists, like the original Chinese masters, worked upon their preparations for making everything everlasting. When the omnipotent substance, iksir or kimiya, was applied to a base metal it became rust-proof and fire-proof, which meant it changed into gold. The same agent could also convert an ordinary stone into a permanent diamond. These features are not revealed in treatises on the history of alchemy and must be clearly pointed out.

Imam Ja'far al-Sddiq (81-148/700-765).-It will now be apparent how Jabir would venerate a master of mysticism like Imam Ja`far al-Sadiq, the sixth Imam, who lived like an internee at Baghdad. Of all the Imams he was the greatest mystic. He was deeply interested in alchemy and even composed treatises on the subject. Importance is attached to him here mainly because Jabir speaks of him as a Master and also because of the fact that alchemy and Sufism both aim at immortality. Since Jabir was both a Sufi and an alchemist, he could have received initiation from the Imam at least as a mystic. Ruska[19] has edited a treatise attributed to the Imam and discussed his position in the history of alchemy, devoting an introduction of sixty pages to the problem.

Jabir ibn Hayyan (104-200/722-815).-Our knowledge of Jabir's life is very sketchy. He was born at Tus, in Khurasan, about 104/722. He became an orphan while yet a boy and was brought up in the tribe of his father, Azd, which lived in South Arabia. Then we suddenly find him as a man of middle age active as a physician at the Court of Harun al-Rashid and as a companion of Imam Ja'far al-Sadiq. His special patrons were Harun's viziers, the Barmakids, who really introduced him to the Court. When the Barmakids fell into disfavour in 188/803, Jabir, then over eighty years old, returned to Kufah where he used to live before coming to Baghdad.

The early life of the man, say from twenty to thirty-five, must have been spent in the pursuit of alchemy probably at Tus. If he had merely been born there he would have hardly been called al-Tusi. Another designation of his, al-Sufi, also sets us inquiring as to where he acquired proficiency in this field. With Tiis as a common centre for both Sufism and alchemy, the search is reduced to the minimum. When he left Baghdad immediately for Kufah, as an old bachelor, he could have hardly found people with whom he was familiar. Without relatives and surviving friends his life must have been that of a stranger and he must have migrated from Kufah to Tao where Sufism and alchemy were very much at home. According

to one source, he died at Tus, in 200/815, which appears most probable, at the ripe age of ninety-three.

Two centuries after his death some houses in a part of Kufah where Jabir used to live were demolished. The house which he used to occupy was found to contain a mortar of solid gold weighing two pounds and a half which went to the royal treasury of the time. This archaeological finding gives much reality to the personality of Jabir with his many-sided features. Those who have been prejudiced in favour of Greek culture have nourished myths such as given by Thompson,[20] who writes that "Jabir is said to have been either a native of Mesopotamia or a Greek who afterwards embraced Muhammadanism." The fact that this theory originated from Suidas, who lived in the fifth/eleventh century, and continued to appear as late as 1351/ 1932, when Thompson published his book, indicates the persistence of prejudice in favour of the Greek origin of alchemy.

The existing literature on the history of alchemy seems to be devoted mainly to textual criticism rather than to the subject proper. Hence, as late as 1353/ 1934 Hopkins[21] recorded that "the fundamental work of fact-finding has been so difficult and time-consuming that no real history of alchemy has yet appeared." The same judgment continued to be repeated, when Taylor[22] wrote in 1371/1951 that "it may at once be said that alchemy still remains an unsolved problem." And both these remarks apply even more forcibly to Muslim alchemy. We have not been told as yet what the Muslim alchemists were after and particularly what was meant by kimiya and iksir; whether they were identical or whether there was a subtle difference between them.

What the Europeans of the Medieval Ages got as alchemy was the system developed by the Arabs immediately before them so that observations upon the alchemy of any of these two apply to either. "Paracelsus taught," as worded by Thompson,[23] "that the object of alchemy was not to make gold, but to prepare medicines." He is the founder in Europe of iatro-chemistry, but it is being maintained here that this has always been the character of alchemy and is best illustrated by the popularity Jabir enjoyed among his contemporaries. The fact that Jabir could indulge in the use of a golden mortar and yet live the life of a vegetarian, bachelor, and a Sufi-ascetic shows how he was not concerned with the making of gold as a source of wealth. The other observation is from Liebig. Chickashige[24] writes, in this connection, that "the long history of alchemy clearly shows, as Liebig remarked, that alchemy was never anything else than chemistry proper to its own generation." If instead of "chemistry" and "iatro-chemistry" as above we use the more familiar and precise term, pharmaceutical chemistry, then both Liebig and Paracelsus would be expressing the same idea. Here again, Jabir's career fully confirms the remarks of Parcelsus and Liebig.

Among those who spared no energy to study the writings of Jabir may be mentioned the late Dr. Holmyard. He observes that "Jabir ibn Hayyan has many claims to be considered the first to whom the title of chemist may legitimately be applied."[25] Hopkins[26] is even more eloquent in his tribute when he states that "... if all that has been deduced from the writings of Geber (the Europeanized name of Jabir) is true, he was one of the greatest single constructive influences in science, particularly in the science of

metals, that the world has ever seen. Perhaps he should be ranked with Lavoisier for instituting a great revolution in the attitude of the educated people of his time towards the study of chemistry, especially in their attitude towards experiments.

Whereas, since the days of Aristotle, to soil one's hands with labour has been considered, except in Egypt, despicable and proper only for slaves, it is related that Geber had some success in teaching his friends at Court that laboratory methods are necessary and the only foundation for exact and reasonable science." Respect to practical work which Jabir must have preached is confirmed by the converse having continued to exist even afterwards. Fuck27 explains that "al-Nadim had no high opinion of Alchemy or of its adepts.

Of a contemporary alchemist who was credited with having been successful, he tells us that he never found him otherwise than in straitened circumstances and dirty by reason of the chemical work he was in the habit of doing." We can now appreciate the wealth of praise due to Jabir. Hopkins rightly showers praises upon Jabir, the Master, who infused into his people a spirit for experimentation which raised the status of Muslim alchemists so much above others that later historians, like Schneider,28 could admit that "it is certain that no other people have pursued alchemy with so much persistent zeal as the Arabs." The special urge on the part of the Arabs to devote to alchemy would be apparent from what follows.

Kimiya.-Man's earlier medicines came from the plant world; herbalism was then the system of medicine. From this developed the notion that herbs could even make man immortal. The Aryans idealized the soma plant, the Iranians called it homa; the Chinese believed in the mushroom chip; and the Hebrews in the tree of life. Late in this period must be reckoned the belief in a gold-making-plant juice or kim-iya in the Hakka dialect of South China, the original of the Arabic term ki-miya.29

How Kimiya worked.-The ancient religion of man was animism. Every substance, including trees and stones, was believed to have a body and a soul, and to be alive potentially. The soul was a highly refined matter, like a perfume, and it came from the sun. It was more of energy than matter, like light, which, according to some physicists, has a corpuscular nature. The soul in turn was an emanation of the cosmic positive energy, called yang, in Chinese, meaning light, while in the universe there was also negative energy, called yin, meaning darkness. Matter was frozen yin energy, and it was difficult to convert matter into energy.

Matter and spirit could form only a temporary union or mixture. But if matter received the impact of an energizing principle it was changed into reactive negative energy which would then unite with the positive energy, and the result would be a real compound or a permanent union. Even a drop of the gold-making juice was taken to be bubbling with yang energy so that if a coin of copper was heated with it its ineffective soul was expelled and the material body or copper was transformed into negative energy, and it combined with the soul or positive energy from the plant juice to make the resultant gold. Here the donor is exceptionally rich in yang energy and the ultimate transmutation of metal is due to it.

Further, the donor belongs to the plant world. In countries like China and India, with their rich flora, alchemists did depend upon fresh herbs for the transformations they wished to bring about. This being denied to an alchemist like Jabir, he exploited mainly, if not entirely, minerals and metals instead; hence the importance given to inorganic raw materials and metals in the works of Arabian alchemists. Instead of kimiya, inorganic preparations called iksirs were used.

Ruh.–It is necessary to describe how the minds of the alchemists worked in preparing a simple substance such as rich (soul, spirit, or essence). Every substance, they must have felt, has a soul which remains like a tenant temporarily in the substance, the container of the soul. On heating the soul can be made to leave the body; on distilling the soul can be recovered more or less concentrated in the distillate. Thus a rose gives out its soul or ruh. The flower is now a dead body and the soul is its perfume or essence. When such an essence or rult is taken as a drug it temporarily strengthens the body of the user, like blood–transfusion or an injection of glucose. The donor here gives only one of the two elements; the material body, the flower, is discarded. When the soul of the flower is introduced into the body of another receiver it is like the temporary transmigration of the soul which must repeat at every stage if the soul is not to disappear in space.

Iksir.–Transmigration implies that the soul and the body do not come from the same source, the two are not permanently united, the balance between the positive energy contained in the foreign soul and the potentially negative energy existing in its present container is not ideal. All that is required is to convert the body into negative energy and reunite with it the soul previously separated from it. This is a regular art. For example, take common salt. It does not sublime. Now, if re–crystallized and mixed with alcohol, just as roses were mixed with water, and the mixture distilled, the essence of common salt evaporates along with the volatile vehicle, alcohol. The distillate is added again to the residual salt in the distilling vessel and the process of rectification is continued. A stage comes when all the salt becomes fluid, leaving no solid residue. This is the iksir of common salt.

The body, the material vehicle, has by now been converted into reactive energy, negative in character, and its soul, as the positive energy, has combined with it into an inseparable whole. Salt is a mixture of a material body, or of potential negative energy, and a soul, the positive energy. Its iksir contains a permanent union or compound of positive energy coming from the soul and reactive negative energy or the transformed material body.

Technically, two processes were most necessary: distillation in the first instance, to isolate the soul, the essence, or the positive element, and calcination, to purify the material vehicle, in order to convert the potential energy into the reactive negative element. Melting of metals is a very minor operation. In the case of an active gold–making plant juice, calcining of copper is limited to gentle heating. In the case of iksir of common salt no separate calcining is necessary, repeated distillation incorporates it. It is clear by now that rids or spirit contains one element only, the positive. Iksir contains two, the positive element and the negative one. Each of them belongs to the same substance and as such must necessarily

contain enough quanta of both to balance like exact opposites or rather like exact supplements.

When iksir results, the substance becomes a spirituous preparation, sublimable, volatile, atomized, or potentized. Now being all energy, it represents a permanent union, inseparable for ever. When taken as a drug it makes the patient like itself, tending to become permanent. Naturally, according to the original substance, the total energy content in different cases differs and iksirs also vary in their pharmacological properties. In any case an iksir is stronger than the spirit or rich. Whereas kimiya is a natural substance, iksir is an artificial one. To meddle with the gold-making juice in any way would be to destroy its virtues, whereas iksirs can be produced only by chemical processes, above all by distillation and calcination.

Because substances like common salt are made to distil along with alcohol, such heterogeneous mixtures as contained alcohol were probably called “elixirs” by European alchemists of the Middle Ages. It will be apparent why Jabir talked mostly, if not solely, of iksir and not of kintiya, its synonym. How iksir has been made to come from the Greek word, kseron, merely meaning dry, cannot be explained. By constitution iksir was taken to be the purified body with its soul returned to it. It was a revived body and a returned soul, where the two, on becoming identical, represented a third substance.

The picture was essentially the same as that of man after resurrection. The soul would return to the dead body which would revive and henceforward remain immortal. But the revived person would be a regular mutation, his body feeling neither thirst nor hunger. He would be like a spirit or ghost with a body no longer composed of matter. Iksir represents such a substance, material to look at but in fact become energy, and, what is important, also a donor of energy.

Whatever the substance iksir may have been, its uses mainly decide its virtues. Jabir prepared iksirs from one substance after another and as an indefatigable worker could not avoid studying the properties of inorganic acids into which he tried to dissolve his metals to purify them, instead of melting them alone or along with other metals. In India the metals were never purified by the use of inorganic acids but mainly by calcining them with boiled extracts of herbs. In order to have substitute a plant extracts or organic acids Jabir prepared inorganic acids not for their own sake but for making iksirs. His experiments spread over a wide range of substances. The preparations resulting from them must have maintained Jabir's enthusiasm and made him a master. Holmyard,30 a chemist and an author of standard text-books on chemistry, after a careful study of Jabir, rightly states that “like painting which reached its highest pitch of perfection while still in its infancy, Islamic alchemy never surpassed the level it attained with one of its exponents, Jabir ibn Hayyan.” We can represent him as a noble soul, seeing diseases all over, finding no herbs to treat them with, and so taking with a vengeance to minerals as the only source of supplying remedies. Enthusiasm born under such circumstances, incorporating the personality of the worker and the poverty of the country reacting upon it, resulted in the achievement with which the world today remembers the name of Jabir.

Those who do not know what iksirs mean, certainly not mere powders, cannot imagine the deep urge for or high aim in making them. At every stage we have to remember that Jabir was an ascetic-bachelor

and a mystic–Sufi; acquisition of wealth or making of bullion gold could never have been his motive. In the absence of the right perspective much energy has been wasted in trying to separate historical data from Jabirian legends. What is still required is to isolate alchemy proper from Jabir's writings. Writers on alchemy, rather on Alexandrian alchemy, have rightly attached full importance to the early record of the word chemeia.

Likewise, in dealing with the history of Muslim contribution to alchemy we feel that the introduction of the word iksir played an even more significant role. Jabir apparently used it for the first time and demonstrated its claims. Paracelsus is credited with having founded iatro–chemistry or having taught that the real aim of alchemy was to prepare medicines and not to make gold. Jabir would have been surprised to hear that alchemy was anything but that, and his iksirs anything but highly potent, we may say, omnipotent and multipurpose drugs. Kraus31 has translated from Arabic into German a text revealing what iksir can prove to be; an extract from it has also been rendered into English by Holmyard.32 Harun al–Rashid's ministers belonged to the Barmakid family.

One of them, Yahya, was much devoted to a lady in his harem. She fell ill. The case ultimately became so hopeless that Jabir was sent for. The report" as coming from Jabir himself maintains: "I had a certain elixir with me, so I gave her a draught of two grains of it in three ounces of vinegar and honey and in less than half an hour she was as well as ever. And Yahya fell at my feet and kissed them, but I said, `Do not do so, O my brother!' And he asked about the uses of the elixir and I gave him the remainder of it and explained how it was employed, whereupon he applied himself to the study of science and persevered in it until he knew many things." Having demonstrated such a dramatic achievement it is impossible for any sane person to have found interest in making gold instead. Jibir's alchemy consisted only in preparing iksirs or wonder–drugs which were more precious than gold.

The Philosophers' Stone (Hajr Mukarram).–The preparation which marks the zenith of alchemical achievement is the Benevolent Stone (hair mukar. rang). The alchemists called themselves philosophers or Ilakima as opposed to physicians or,tabibs. The Alchemists' Stone was correctly paraphrased as the Philosophers' Stone. This is the genesis of the term. In the historical survey of the chemical arts of China by Li,33 we read that "Chin–tan, an alchemical term in Chinese, first appearing in Pao–p'u tzu (a work composed about 317–332 A. D.), comes to refer to a drug or elixir which was prepared by the alchemists for prolonging life and transmuting metals. It reminds us of the Philosophers' Stone because this was considered to have the same effect as Chin–tan.... The language of the ancient alchemists is very hard to understand [a confession recalling the judgment of ibn Khaldun upon Jabir]. It is supposed that Chin–tan may have consisted of mercury, sulphur, lead, etc., a compound or mixture prepared in accordance with a theory not unlike that of Jabir, who supposed that every metal contained mercury and sulphur." The admission seems to be to the effect that the theory, that metals are composed of mercury and sulphur, did exist in China but in a vague form.

Taking the simpler notion first, with Jabir all metals including gold were composed of mercury and

sulphur. Davis[34] states that, “for the Chinese alchemists, positive yang was lead instead of sulphur; negative yin was mercury.” Jabir died in about 184/800. The Chinese alchemist, Chang Po-tuan,[35] living later in 373-475/983-1082, still maintained the ancient Chinese theory that “our fellow workers must be able to recognize true lead and mercury.” It is, therefore, clear that Jabir borrowed a theory as known to the Chinese but improved upon it, keeping mercury as the one element and changing the other from lead to sulphur.

The surprising feature of the Sulphur/Mercury theory about the origin of metals is that it has not been challenged by experimenters who have melted metals, calcined them, and even sublimated at least arsenic and mercury compounds. That they should have believed that iron consisted of sulphur and mercury, and that even gold consisted of the same elements, has received no explanation so far. The primitive man accepted blood as the life-giving principle and further believed that its red pigment was the real agent. Thus redness was taken to be the active principle so that any red substance could generate blood. Of all red substances cinnabar was the nearest approach to blood in colour.

When it was established by actual synthesis that cinnabar consists of mercury and sulphur, its elements came to be considered to be the elements of all metals. Animism assumed that even metals were living things, having a soul as well as a body. When negative energy freezes it becomes matter and the body of the metal consists of it. The soul is represented by the positive element, one which is sublimable so that it can permeate the material body. Lead is not volatile, sulphur is; hence the Lead/Mercury theory was essentially defective and the justification of the Sulphur/Mercury modification.

Further, lead and mercury do not produce a red compound, while sulphur and mercury do. But if Jabir's theory is a modification of a previous Chinese theory, how is it that in its original form it accepted lead and mercury as the elements of metals? What was required as the end-product was redness, and theorizing depended upon this result. Lead heated by itself oxidizes in the air to red lead or minium. Likewise, mercuric oxide is obtained as red, orange, or yellow powder, consisting of minute crystals. Thus, the Chinese theory was, indeed, properly conceived, but it failed to include a spirituous element like sulphur, while lead obviously was not.

Alchemy as a philosophical system is based on a dualism, postulating that everything consists of two elements, of light (yang in Chinese) and darkness (yin). When the metals were ascribed their constitution, sulphur and mercury came to be taken respectively as positive (yang) and negative (yin) elements. And the realistic basis of this theory, as has been explained, came from the actual knowledge of what constituted cinnabar and the identification of cinnabar with blood. When the cosmic forces, yang and yin, are in perfect balance, it means yin exists as a negative creative energy and not as frozen matter, while yang naturally always remains spirituous; the result of their union is like that of two substances, identical in nature but oppositely charged, like positive and negative electricity.

The resultant is everlasting. Pure sulphur and pure mercury are imagined to be existing as energy, even though they may not appear to be so, and their resultant, when ideal or when the two are perfectly

balanced, means an everlasting union, which is gold. According to another tenet of animism, like makes like; gold, the everlasting metal, as a drug makes the consumer also immortal. Gold remaining in mines for millions of years loses this property of donation, its negative element, mercury, having become less spirituous or more material; hence gold, as a drug, must be freshly prepared.

Better still it must be in a stage prior to its becoming gold, so to say, in a nascent stage when it is the iksir of gold, a ferment-like substance which will convert any metal into gold. This is the Philosophers' Stone, converting matter into energy, energizing the material or the negative element until it comes to the same level as its positive or spirituous element.

We, thus, see that rich or spirit consists of only the positive element, the soul; and iksir consists of two elements, the positive element and the purified material element sublimated into reactive negative energy. Philosophers' Stone is double iksir; it consists of sulphur as a substance, which has a body and a soul (or failing sulphur, its substitute, say lead), and mercury as a substance, likewise with two elements of its own, its body and soul. In all, there are two purified bodies and two souls returned to their respective bodies.

The question now arises that if there are four elements compounded to form a fifth substance, why not another which is double that of the Philosophers' Stone. There are only four cosmic elements-heat, cold, dryness, and humidity. The body and soul of sulphur and the body and soul of mercury represent all these four cosmic elements; hence, between themselves, mercury and sulphur fully represent the cosmic force, the highest imaginable.

We have seen that Islamic alchemy was almost non-existent at Damascus. Baghdad produced its first two masters without whom there would perhaps have been no alchemy in the Islamic world. If alchemy at Damascus meant an importation from Alexandria, alchemy at Baghdad was an importation from Khurasan, which in turn was really an importation from China. Now two substances used by Jabir reveal the alchemy which he borrowed and upon which he improved. Ammonium chloride has played a very important role in alchemical preparations to which Stapleton[36] devotes a special monograph.

From Holmyard[37] we learn that Jabir's "is one of the earliest Arabic mentions of sal-ammoniac which for a time was imported from inner Asia. Jabir, however, knew how to prepare it from organic matter." Inner Asia is a vague term which makes it difficult for the reader to locate the actual source of the product. However, Stapleton[38] explains that the Arabic word, nushadar, for sal-ammoniac, is a loan word-from Chinese. The origin of the product is thereby assured.

Another substance Jabir used is what he named khar sini. Holmyard[39] comments, "Muslim writers say that it was used in China to make mirrors. According to Laufer, it was an alloy composed of copper, zinc, and nickel, known as pai-t'ung in Chinese, or white-copper." Khar is salt and a loan-word in Arabic. It cannot be made to express any metal or alloy. An alloy comparable with pai-t'ung is called bidri in India, consisting of copper, lead, and zinc in the ratios of 1:1:16. To give it a dark surface, sodium sulphate is

used. A similar salt may be used for giving a metallic white surface to a different alloy of copper and zinc. In fact, it is easier to give it a metallic shine than to make it dull black. This salt of Chinese origin further points to the source of Jabir's alchemy.

Jabir being a mystic incorporates numerology into his alchemy, a fact discussed by some writers, above all by Stapleton[40] According to him, the square with the nine cells was found as a motif near Nineveh as early as 4000 B.C. But in China also from at least the seventh century B.C., if not actually from the eleventh century B.C., the nine rooms of the square of the Imperial Temple had assigned to them the first nine numbers arranged in the actual order of these numbers in the simplest Magic Square. Even Jabir's numerology can thus be safely classed as Chinese in origin.

The Emerald Table of Hermes.–Among Jabir's writings, Holmyard first discovered in 1342/1923 the Arabic original of the famous Latin work bearing the above name. It deals with the phenomenon of change in nature, a typical Taoist idea, couched in phrases like those used in the following quotation from it: “That which is above is like that which is below and that which is below is like that which is above.” Such mystical statements are more decorative than illustrative in any other context.

Turba Philosophorum.–A Latin work of this title was very popular with European alchemists. It contained many names which were cited by Jabir in one of his books. On that account Ruska, in 1352/1933, proved that there should be an Arabic original of the Turba and this was confirmed by Stapleton by indicating that a fourth/tenth–century authority, ibn 'Umail (see later) quoted passages from it. Plessner having studied the problem exhaustively says, as quoted by Holmyard,[41] that “it is the three–fold result of the cosmological discussion, the Qur'anic Creator–God, the unified world, the four elements (heat, cold, dryness, and humidity) that gives the discussion its clear direction towards the chief subject of the Turba, alchemy.” From the contents of the two classical works of medieval alchemy, the Turba and the Emerald Table, incorporated in Jabir's writings, the reputation he enjoyed in the Middle Ages can be easily visualized.

Al–Razi (c. 251–313/865–925).–Engaged as he was in preparing elixirs, Jabir was called upon as a consultant to use them when ordinary drugs had proved ineffective. On the contrary, abu Bakr Muhammad ibn Zakariya al–Razi, an account of whose philosophy has been given in Volume I (Chapter XXII) of the present work, was a physician by profession. At the age of thirty lie went to Baghdad, where the achievements of Jabir must have been narrated almost as miracles. Al–Razi could not but have been inspired by the tradition existing at Baghdad in favour of Jabir's elixirs. At Baghdad he decided to become a physician. As a Muslim alchemist he comes next only to Jabir. His fame in the medical world became so high that he was consulted when a hospital at Baghdad was being extended and ultimately became its chief physician.

Holmyard unwittingly remarks that “like the majority of physicians of medieval times, Razi was led to the study of alchemy.” In fact, alchemy has been nothing else but pharmaceutical chemistry and the physicians of those times had to prepare their own medicines. When Razi decided to become a

physician he was probably attracted by the reports about elixirs. In other words, he became an alchemist first and a physician afterwards. Among his writings only one book dealing with alchemy has reached us. It is entitled “The Book of the Secret of Secrets” translated into German by Ruska.[42] “Stapleton,” says Holmyard[43] “places Razi on an intellectual level with Gallileo and Boyle.” There is an illuminating article on al-Razi and alchemy by Heym,[44] where we read[45] that “bodies are composed of invisible elements and of empty space that lay between them. These atoms were eternal and possessed a certain size.” The statement reminds us of the modern explanation of the structure of crystals.

Razi accepted Jfibir's Sulphur-Mercury theory of the constitution of metals but Heym says that “in the same way the attribute of salinity enters into Razi's scheme.” He comments at the same time that “without doubt it is here [with Razi] that the origin of the popular conceptions of alchemy with its three elements-mercury, salt, and sulphur-can be found which reappears later in Europe and plays such an important part in the history of Western alchemy.” Without mentioning Razi's name, Thompson[46] writes, “This Sulphur-Mercury doctrine was accepted by most alchemists until about the twelfth century, when the theory was extended by the addition of a third elementary principle, to which the name “salt” was given.

It was believed to be a basic principle which gave solidity and resistance to fire. Mercury was considered to be the connecting link between the spirit and the body, and the element on which depended blood and life.” The source of the Sulphur-Mercury-Salt theory not mentioned in Thompson is revealed by Redgrove,[47] who writes that “Isaac Hollandus appears to be the earliest known writer who makes mention (c. 1063/1652) of the famous Sulphur-Mercury-Salt theory.”

Thompson places the theory in the twelfth century; Redgrove, makes it seventeenth century; while Razi, the real author of it, lived in the third/ninth century. An explanation can also be offered as to how an alchemist of Holland came to be credited as the propounder of this modified theory. Heym writes that “in Europe throughout the Middle Ages until the seventeenth century, Razi's works on medicine were still part of the curriculum at Dutch Universities.”

It has been casually indicated that alchemy as a system of thought is based on dualism which characterizes Manichaeism and which was at its best in China. At any rate, al-Razi was so much influenced by dualism that Heym says, “al-Razi was also called a Manichaean,” though he gives a different explanation for this appellation of his. Where Razi continued the tradition of Jabir, which rightly made an appeal to the judgment of Hopkins, was his love for practical work. Heym states that “even though al-Razi in his alchemy was not strictly empirical in our sense of the word, his great work mentioned above is a book of experiments; it is a book of practical alchemy.... There it can be said that al-Razi is the creator of a new alchemy for he seems to be the first to have transformed theoretical alchemy into a new strictly scientific system. Or, to be more definite, al-Razi transformed alchemy for the first time into a new and strictly scientific system.” To a practising physician and to one who was not a mystic like Jabir, it was practical phase of alchemy, which was inorganic pharmaceutical chemistry of

the age that naturally appealed most.

Ibn Sinn (370–428/980–1037.)–Europeans in the Middle Ages had Latinized the names Jabir into Geber and Razi into Rhasis or Rhazes, and these easily passed on as those of their own masters in science and medicine. The greatest medical authority of the Muslim world was abu 'Ali Sina whose name was likewise adapted as Avicenna. Muslim physicians call him the Shaikh, meaning the Prince of Physicians. His career shows nothing revolutionary like that of Razi. He studied medicine in the routine way and became proficient enough to treat patients even by the age of sixteen. Being a genius he was called by one prince after another from Bukhara to Iran and served them even as a vizier. Enjoying Court life in every sense of the word, luxury above all, he could have hardly found time to experiment as a pharmacist. In his classic entitled the "Canon of Medicine," some seven hundred and fifty drugs are mentioned, but they are all simples or individual drugs, vegetable, animal, and mineral in origin. None of them are of the class of high potency or synthetic inorganic chemicals, or iksirs. In his writings alchemy is discussed but critically. As a physician he did not use any iksir; it is out of question that he could have believed in a substance changing base metals into gold.

Ibn 'Umail (250–300/864–912).–In a short contribution on the subject such as this we have to be strict in selecting the representatives of Islamic alchemy. In doing so we have dealt with authors whose works were translated into Latin during the Middle Ages. These are, so to say, the masters who served as progenitors of European alchemy. Now, Davis[48] has tried to prove by the common contents and even the common illustrations of the works on the subject that the alchemy of medieval Europe is almost identical with that of China. To connect European alchemy with that of the Chinese, it becomes necessary to place Islamic alchemy as the real connecting link between the two. It would at once explain a continuity of thought and give a complete sketch of the evolution of alchemy. As depicted at present, there seem to be at least two different systems of alchemy isolated and unconnected. For this reason we wish to mention one more author whose work was translated into Latin and printed in 1032/1622. He is ibn 'Umail. Stapleton[49] and his colleagues have edited 'Umail's three Arabic texts and also the Latin translation in 1032/1622, along with copious notes which together make the presentation a model of scholarship. When we compare 'Umail's treatise with an original European work on alchemy, Splendor Solis, a classic in itself, by Solomon Trismosin,[50] composed about 990/1582, we get the impression that the contents and even the style of presentation are the same in both the works. The influence of alchemical literature in Arabic on medieval European writers becomes thereby quite evident.

Our present contribution will serve its purpose better if we indulge in offering in modern phraseology what these alchemists were actually after. It is a problem of science to explain how one form of energy is converted into another, e.g., heat into light. Likewise, a far greater problem, but of the same category, is to explain how matter changes into energy and vice versa. Ibn 'Umail, like a typical alchemist, expresses this as follows: "Turn bodies into non–bodies and non–bodies into bodies." Iksir was the energizing principle which could sublimate matter into energy. This was with regard to technique only. The aim was to energize the human body to make it immortal. When the soul is strengthened and the body merely

reconditioned and not thoroughly purified, life is only prolonged. The agent that purifies the human body can purify the body of a base metal as well. With a purified body man mutates into an immortal being capable of flying about in the air, as Davis[51] has clearly emphasized. With the purified body a base metal mutates into an everlasting form which is gold. Alchemical improvement ended in the permanency of form. Thus, the active agent behaved in one and the same way, converting impure body into sublime energy, resulting in man's immortality and in the synthesis of gold. This is what ibn 'Umail actually meant.

Jildaki (d. 762/1360).–The last authority we propose mentioning here is Jildaki. One of his works, "End of Search," has been the subject of detailed study by Dr. M. Taslimi of Teheran–a study which was accepted as a thesis for Doctorate by London University in 1954. Unfortunately, the thesis has not yet been published. But Holmyard[52] summarizes it by saying, "That there is a great deal of similarity between the ideas contained in the quotations of Jabir given in the 'End of Search' and those found in the Latin works of Geber but the correspondence is not sufficiently close to establish a definite affiliation." Our problem has been to find how, from author to author, alchemy has actually progressed. After al–Razi or at the most after 'Umail we find repetition of what had been said before in different words and with other illustrations. No wonder that Holmyard justly observes that "after Jildaki there is no outstanding figure in Muslim alchemy."

Alchemy in Other Islamic Countries.–No writer to our knowledge has spoken of alchemy by Muslims outside the schools of Damascus and Baghdad. What about the impact of local schools of alchemy upon Muslims living in India, Burma, Indonesia, and elsewhere? Dr. Maung Htin Aung,[53] Vice–Chancellor of Rangoon University, speaks as follows: "Some members (of the Burmese Science) association may (be) also (among those who) consider the Burmese alchemist to be a charlatan and an impostor. But I will plead with you to spare him a sigh. Of all the religious cults that existed in Burma before the advent of Buddhism, alchemy was the noblest. Like modern science, Burmese alchemy aimed at the conquest of nature, and discovering for suffering humanity a way to preserve the human body in its vigour and beauty." Jabrian alchemy was certainly that and it is impossible to think that any two systems in corporating such ideas did not fuse.

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Chapter 66: Natural History

A

Inasmuch as the sciences studied in any traditional civilization, that is, one based upon a divine revelation, depend upon the metaphysical and religious bases of that civilization, Muslim sciences have always echoed and reflected the central Islamic doctrine of unity (tauhid). Just as the Islamic religious and moral sciences have begun from and returned to the idea of divine unity, the natural sciences have tried to discover the interrelation of all created beings. It is a general feature of all medieval cosmological sciences[1] that they seek to express the “unicity of all that exists.” Especially in the Muslim natural sciences this goal has been central, and the idea of the unicity of nature and the interrelatedness of all parts of the universe has remained as a complement to and necessary consequence of the oneness of the Creator.

Since the most legitimate and meaningful way of studying a science is with respect to its ultimate aim and from the point of view of those who have cultivated it, we shall best understand the Muslim sciences if we keep in mind that their primary aim, unlike that of the modern natural sciences which are only analytical and quantitative, has been to arrive at the unity lying behind the veil of multiplicity of natural forms by a synthetic and qualitative study of nature.2

This search for unity is clearly manifested in a general science like natural history. As studied by the Muslims, natural history covers a large number of fields and includes not only such subjects as geology, botany, zoology, and anthropology, but also cosmogony and sacred history3 Natural history means essentially the history of nature in the vastest sense of the word, and because Muslims have never separated the spiritual and the mundane, they have usually written natural history within the context of sacred history as is seen so clearly in the universal histories like those of Tabari and Mas'udi. The many allusions in the Qur'an to natural phenomena and the fact that the verses of the sacred book as well as the phenomena of nature are called ayat (signs) signify that in the Islamic perspective there is a fundamental affinity between the divine and natural orders and indicate, therefore, the legitimacy of connecting sacred history with natural history.

The question of the “signs” of nature leads to another basic feature of Muslim natural history. Most Muslim scientists have sought to study nature in order to observe “signs” of the Creator in it, to witness directly the “vestiges” of God in His handiwork.4 This is a feature which seems most irritating to some modern scientists who aim to discover only the immediate and the material causes of things. But from the point of view of Islam, no science can be considered legitimate which does not ultimately consider things in reference to their divine origin and which does not take into account the transcendent cause of all finite beings. The marvels and wonders of nature and the moral and spiritual lessons drawn from plant and animal life mentioned by the Muslim natural historians, which many modern historians have ridiculed, have been from the point of view of Islam itself the most beneficial and basic elements of natural history because they have led the reader to a recognition of the divine agent present in nature.

The Islamic perspective is in a way very practical. The sciences which this perspective has nourished and matured are all in a sense useful, that is, they correspond to a basic need of man as envisaged in Islam. They may, like agriculture, medicine, and the sciences of history and society, be useful in the limited sense and fulfil man's physical and social needs. Or, like logic and theology, they may be useful in preventing people from being misled by false reasoning. Or, finally, like the esoteric doctrines of Sufism, they may be useful in quenching the thirst for spiritual realization of the few, who seek God here and now. But Islam has never considered simple curiosity or intellectual passion either a virtue or a basic need of man and for this reason has never legitimized a science based only on curiosity.5 The desire of natural historians to learn moral and spiritual lessons from the phenomena of nature is, therefore, legitimate from the point of view of Islam because it is spiritually meaningful and fulfils a need, whereas finding the weight of a certain leaf of a tree to be so many grams is from this point of view a secondary and unimportant inquiry unless it leads to higher knowledge. The modern criticism of Muslim natural

historians on this point is, therefore, unjust and based on a misapprehension of their point of view.

There is yet another aspect of Muslim natural history which is difficult to understand from the modern point of view. It is the description of strange animals and plants and magical properties of nature which the medieval authors seem to have recorded so credulously. One finds similar accounts in ancient books like Pliny's Historia Naturalia. The creatures described in these texts, which appear strange today, are of several types. One type is of strange animals, especially sea animals, which could certainly have existed but later became very rare or extinct and the description of which, therefore, seems fantastic now for they can no longer be observed. Another type is of animals and plants like the dragon, unicorn, and mandarine, which originally had symbolic meaning only, but the symbolism of which in certain cases was so forgotten that they came to be erroneously described as living creatures.6

As to the apparent frequency of “strange” phenomena within nature and the innocence with which medieval authors recorded them, it must be noted that the minds of those people were not as “hardened” as those of the moderns, and that nature in turn then was not taken to be so “dense” and “coagulated” and far separated from its psychic aspect as now.7 Therefore, while reading ancient and medieval texts it should be kept in mind that just as the people of those ages, like the people of certain parts of Asia, Africa, and America today, regarded nature from a point of view different from that of modern science, nature also revealed an aspect of itself to them different from that which it reveals to those moderns whose mental constitution is no longer capable of receiving nature's more subtle elements. There is, of course, much misinformation due to narrative and exaggerated style characteristic of the poetic mind of many Muslims. But on the whole most of the contents of Muslim natural history can be understood in terms either of direct observation of physical realities or of symbolism, i. e., the description of the subtle aspects of nature the reality of which is not in any way affected because the modern quantitative sciences refuse to consider it from their own peculiar point of view.

B

Types of writings which contain material on natural history, particularly on plants and animals that form the centre of our interest in this chapter, are quite diverse. Muslim authors have rarely had a taste for over-specialization so that one finds a discussion of the plant and the animal kingdoms not only in scientific texts but also in literary, historical, philosophical, and theological works. More specially, the sources for natural history include the writings of historians, geographers and travellers, physicians, alchemists, philosophers, encyclopedists, cosmographers, moralists, theologians, and Sufis, and, of course, authors writing specifically on the subject of natural history.

The Tarikh al- Reful w-al-Muluk, the universal history of Tabari, the Kitab al-Buldan, the book of countries of Ya`qubi, the Kitab al-Bad' w-al-Tarikh of Maqdisi, the Muruj al-Dhahab and Kitab al-Tanbih w-al-ishraf of Mas`udi, the Tarikh-i Jahan-gusha of Juwaini, and the geography of abu 'Abd Allah ibn al-Idrisi, all dealing with history and geography, contain valuable sections on natural history. Moreover,

they provide, on the one hand, the perspective of time in the light of which Muslims have viewed the life of all creatures, a time stretching between the creation and the final annihilation of the universe on the Last Day, and, on the other, they mention the geographical setting, the seven climates, and other terrestrial conditions which form the matrix of natural history.[8] They demonstrate, further, how closely the study of plants and animals is bound up with that of the other parts of the universe, both terrestrial and celestial,[9] and how the history of nature is intrinsically related with the history of man as well as with sacred history.

Another source for the knowledge of natural history comes from the many books of travel which survive from that period of Islamic history when the Muslim world was still more or less united and travelling from one place to another was easy. The accounts of the travels of abu al-Hasan al-Maghribi, ibn Jubair, Biruni, Nasir Khusrau, and ibn Battutah, to mention a few names, provide a wealth of information on plants and animals which these men observed themselves or the accounts of which they heard from others. The interpretation which they gave to their observations varied greatly, depending on their knowledge and experience as travellers. One often finds simple description as in the case of Maghribi, or detailed physical observation and inference based upon it as in the case of Biruni, or philosophical and metaphysical reflection upon natural forms as is found in the writings of Nasir Khusrau.

Besides these land travellers, there were several ocean travellers like Sulaiman the Merchant, who in the third/ninth century journeyed by sea to the coast of China and described many of the wonders of the Indian Ocean and the Chinese coast, and Shihab al-Din ibn Majid, Sulaiman ibn Mahri, and Phi Ra'is, who in the ninth/fifteenth and tenth/sixteenth centuries travelled extensively through the Mediterranean Sea and Indian Ocean and gave a detailed description of these areas. The accounts of sea animals found in books of natural history and the fables of the sea encountered so often in Arabian Nights, Sindbad Nameh, and other collections of stories, both Arabic and Persian, were originally taken from the accounts of the sea travels of merchants, adventurers, and occasionally military men who roamed the then known extremities of the world.

Another source of natural history, considered from quite another aspect of our subject, is medicine. Muslim medicine, the heir both to the Greek and to the Indian science of medicine, has always had a general theory of living beings; nearly all medical treatises have included in their introduction a general treatment of the constitution (mizdj) of animals, which provides a major source of information for the internal structure of animals and the functioning of their organs [10]Moreover, since much of the treatment of diseases in Muslim medicine is based on plants, medical books have usually contained sections on pharmacology treating of the medical properties of plants. In fact, one may say that, apart from the metaphysical and philosophical study of plants and animals, most of Muslim research in botany and zoology has been in the service of pharmacology, agriculture, medicine, and animal husbandry. The important medical treatises like 'Ali al-Tabari's Firdaus al-Hikmah (The Paradise of Wisdom), Muhammad Zakariya Razi's al-Hdmi (Continens), and ibn Sina's Qdnun (Canon) contain important chapters on zoology and botany.

Alchemy, a subject closely allied to medicine and botany in ancient times and later identified more with the study of the mineral kingdom, has also much to contribute to natural history. In Chinese alchemy we find a close link between the elixir and the plant life; certain modern scholars have even suggested that the Arabic word kimiya itself, from which the English word alchemy is derived, comes from the Chinese Chin-Ia, meaning the goldmaking juice of a plant.[11]Whatever the validity of this theory may be, there is no doubt that plant and animal symbolism has a major role to play in alchemy as the writings of so many alchemists like Jabir ibn Hayyan or in the Western world Flamel and Basil Valentine demonstrate. In Muslim alchemy certain authors like Jabir have written specific treatises on plants and animals dealing with their hidden and "occult" qualities[12] Authors writing on the esoteric sciences (al-'ulum al-gharibah), like Jabir, Shams al-Din al-Buni, and Jildaki have all written treatises dealing with the psychic and symbolic aspects of both plants and animals and their influence on man's physical, psychic, and spiritual life.

The philosophers have also treated plants and animals in their general consideration of the world of "generation and corruption," to use the terminology of Aristotle. It must be kept in mind that medieval philosophy is based upon the idea of hierarchy and the chain of Being which begins from the One and through the angelic and intellectual orders descends to material manifestations, to rise once again through the mineral, plant, and animal kingdoms to the origin of all things. The philosophers, especially the systematic Peripatetics (Masha'iyun), therefore, have always entered into a discussion of plants and animals from the point of view of their place in the great chain of being. We find examples of this type of discussion not only in the Peripatetics like Farabi, ibn Sina, and ibn Rushd but also in the philosophers of the Illuminationist (ishraqi) school like Suhrawardi Maqtul and Mulla Sadra, and in Sunni and hi`ah theologians like al-Qhazali and ghwajah Nasir al-Din al-Tusi. The most detailed and profound scientific account of plants and animals in these philosophical treatises appears in ibn Sina's Shifa' (Sulfcientia), the greatest encyclopedia of philosophy and sciences ever written by one man. Here, ibn Sina deals not only with the place of plants and animals in the cosmic hierarchy but also with their morphology, genesis, and growth. Sections seven and eight of the Shifa' on natural philosophy (Tabi`iyat) are among the most important pages of medieval natural history.

Writings similar to the Shifa in the universality of their subject-matter, but not so strictly systematized, are a number of encyclopedias which have been popular from the very early centuries of Islam. We find an early example of these in the Book of Treasures of Job of Edessa written at the end of the second Islamic century.[13] More important works are the Rasa'il of the Ikhwan al-Safa containing a wealth of information on plants and also on animals drawn from Indian, Persian, and Greek sources and integrated into a vast metaphysical and philosophical panorama.[14]

Also of great importance for natural history is the encyclopedia of Mustaufi Qazwini entitled Nuzhat al-Qulub (Delights of the Heart), written in Persian in the eighth/fourteenth century, which includes sections on plants and animals.[15]

Other works of this kind include the Kitab al-Await (Book of Primordial Knowledge) and al-Nuqayat al-Usud al-Muhimmah li 'Ulum Jammah (the encyclopedia of sciences) of 'Abd al-Rahman al-Suyuti, the ninth/fifteenth-century historian, and the Kashf al-Zunun (The Clearing of Doubts) of Haji Khalifah dealing mostly with scholars of all types including scientists of the medieval period. All these encyclopedias contain some sections on plants and animals while some like the Nuzhat al- Qulub and the Rasa'il have large chapters devoted specifically to natural history.

Works on cosmography are in a way similar to encyclopedias, but usually they do not cover as many subjects. Moreover, they are concerned more directly with the creation of the world and its subsequent development as well as with the wonders of nature. This genre of writing became popular especially during the later centuries, the most famous examples being the `Aja'ib al-Makhluqat (The Wonders of Creation) of abu Yahya Zakariya al-Qazwini and the Nuhbat al-Dahr (Choice of the Times) of Shams al-Din al-Dimashqi, both written in the seventh/thirteenth century. These works represent a combination of natural history and mythology and provide an excellent example of the attitude of the Muslim mind, which takes nature to be as displaying at every turn the power and wisdom of the Creator.

To mention all the sources for natural history, one should include the moral, theological, and Sufistic texts in which the life and qualities of plants and animals are studied with the aim of learning a moral and spiritual lesson from them. Such use of natural history, particularly of the life of animals, is very frequent in Oriental literature as for example in the Kalilah wa Dimnah,16 the Shah

Nameh of Firdausi, the Thousand and One Nights, and the Gulistan of Sa'di. Likewise, in certain theological texts animals are discussed in the light of their moral virtues. The famous Kitab al-Hayawan (Book of Animals) of atJaliiz is above all a theological and moral discussion about animals.17 In Sufi writings also, plants and animals are discussed in the light of their cosmic qualities and in relation to the initiate's (salik's) journey through the cosmos. In these works plants and animals appear primarily in the light of their symbolic aspects which represent realities of a universal order. The Mathnawi of Maulanaa Jalal al-Din Rumi is particularly rich in this respect. There is also the Mantiq at-tair (Conference of the Birds) of Farid al-Din `Attar in which the whole spiritual quest of the Sufi disciple for the divine presence is presented in the language of thirty birds, each symbolizing a particular spiritual type.

Finally, among writings dealing with natural history, there are works devoted almost exclusively to plants and animals, 18constituting perhaps the most important sources of our knowledge of natural history. We mention here a few of these texts. These works concern agriculture, pharmacology, and botany, all dealing with plants, and zoology and animal husbandry.

In agriculture, the Filahat al-Nabattyyah (Nabataean Agriculture) of ibn Wabshiyyah is the most influential of all Muslim works on the subject. Written in the third/ninth century and drawn mostly from Chaldaean and Babylonian sources, the book deals not only with agriculture but also with the esoteric sciences, especially magic and sorcery, and has always been considered to be one of the important books in Arabic on the occult sciences. 19 The agricultural section of the work was systematized and

elaborated by ibn 'Awwam in the sixth/twelfth century in his Kitab al-Falaltalt (Book of Agriculture) which is perhaps the most important Muslim work on agriculture. Ibn `Awwam describes over five hundred plants and fruit trees mostly from the point of view of their agricultural properties. These two works contain the experience of centuries of agriculture by the people of the Middle East and offer a great deal of descriptive material on the life of plants and animals.

In botany itself, early Arabic poetry has much descriptive material to offer. There were also many early works of a systematic nature most of which have now been lost. One of the most important of these early books was the Kitdb al-Nabdt (The Book of Plants) of abu Hanifah al-Dinawari (the celebrated third/ninth-century historian and scholar) of which only fragments have survived.20 Among later writings in which pharmacology and botany proper are combined, the most famous works are the Kitab al-Adwiyat al-Mujradah (The Book of Simple Drugs) of abu Ja'far al-Ghafiqi'21 the writings of the seventh/thirteenth-century Andalusian author, ibn al-Baitar, the best of all Muslim botanists,22 and the Hadiqat al-Azhar fi Sharh Maziyat al-'Ushb w-al'Aqqar (Garden of Flowers in the Explanation of the Character of Herbs and Drugs) of the tenth/sixteenth-century Moroccan author, Qasim al-ahhassani.

In zoology, the Manafi' al-Hayawan (The Benefits of Animals), by abu Sa'id Bakhtishu', and the treatises on various wild and domestic animals by Asma'i are among the earliest works on animals. To this early period belongsalso the Kitab al-Hayawan (Book of Animals) of al-Jahiz, the celebrated Mu'tazilite theologian and philologist. Being one of the most famous works of Arabic literature, this book, written in the third/ninth century, combines the account of the life of animals with tales, anecdotes, theological discussions, and frequent quotations from Arabic poetry. The sources of this book include the Qur'an, the Hadith, and Arabic poetry, especially pre-Islamic poetry, which last contains many descriptions of animals that al-Jahiz often quotes to refute Greek authors, personal observations of Aristotle, and information collected from various travellers.

Hayat al-Hayawan (Life of Animals) of Kamal al-Din al-Damiri, written five centuries after al- Jahiz, came to be acknowledged as the most important Muslim work on zoology, especially on animal psychology. It was based to a large extent upon the book of al-Jahiz as well as on the writings of the intervening encyclopedists and cosmographers already mentioned. Al-Damiri's is the most comprehensive work of its kind in Arabic literature and has, therefore, been taught and studied extensively since the date of its composition.

C

The philosophical point of view in terms of which plants and animals have been studied by the great majority of the above-mentioned authors is nearly the same and is one derived mostly from the Greeks, particularly from Aristotle. According to this view, the universe is divided into two parts: the heavens and the world of change or generation and corruption; the latter occupies the sublunary region. This region is made of four elements, fire, air, water, and earth,23 arranged in concentric spheres with fire at the

highest and earth at the lowest sphere. These elements combine in various ratios and when a correct proportion is reached, one of the faculties of the world-soul or nature, as some authors have called it, joins them together into a nexus[24] and by this wedding, minerals, plants, and animals come into being, each having been brought about by the coming into play of a new faculty of the world-soul or, as some have called it, a new soul. [25]All the kingdoms of nature are, therefore, united in having been made of the same four elements and given life by souls or faculties which belong to the same single power called the world-soul or nature running through all the arteries and veins of the universe.

As minerals, plants, and animals lie in the hierarchical order of Being, they also come into existence by means of causes which are dependent upon other orders of creation, although these causes may appear to be hidden.[26] The causes are the four already mentioned by Aristotle, namely, the material, the formal, the efficient, and the final. The material cause for plants consist of the four elements; the formal cause, the set of planetary influences symbolizing various cosmic intelligences and forces which are instrumental in sublunary changes; the efficient cause, nature or the world-soul; and the final cause, which last is their use by animals as food.[27] The causes for animals are the same except that their final cause is their use by man.[28]

The plants have the powers of the mineral soul (rise `aqdiyyah) as well as those of the vegetative soul (al-nafs al-nabatiyyah) which is possessed of the three faculties of feeding (ghadha'iyyah), growth (namiyyah), and reproduction (muunllidah).[29] The animals in turn possess all the faculties of the mineral and vegetative souls as well as the powers of motion (muharrikah) and comprehension (mudrikah). The animal faculties may be summarized as follows[30]:

The classification of plants and animals is closely allied with the study of their faculties and is based in certain cases upon the hierarchy of the powers of the soul mentioned above. Muslim authors have followed several principles of classification, some drawn from Aristotle, especially in the case of animals, and some devised by them independently.[31]

The plants have been divided usually into trees, shrubs, grass, and those intermediate between trees and shrubs and shrubs and grass. A most extensive discussion of this division is found in the seventh section of the Tabl'iyat of the Shifa' where each type is clearly defined; for example, the tree is defined as a plant which stands on its stem or trunk, the shrub the stem of which spreads over the earth, and the grass or herb that which has no stem. Ibn Sina divides plants also according to the climates of regional territories in which they grow, that is, of the desert, of the semi-tropical regions, etc.

In Mustaufi Qazwini's Nuzhat al-Qulub a distinction is made between trees of which only the leaves and fruit are renewed yearly and the seed-bearing plants of which everything changes every year except the roots. The trees are divided into those that bear fruit and those that do not [32] Furthermore, the seed-bearing plants are divided into the four classes of aliments (aqhdhiyah): (i) those which are daily used for food and create one of the four humours (akhlat)-cold, warm, dry, or moist-that soon becomes a part of the body; (ii) medicines and spices only a little of which can be eaten for medical purposes and which

are mostly cold and wet; (iii) perfumes (mashmumat) which have a good odour and are derived mostly from flowers; and (iv) miscellaneous plants in which the qualities of aliments and medicines are present but in a lesser degree.

Most authors dealing with the classification of plants also treat of their morphology. We find an extensive treatment of this kind in the Shifa' where ibn Sina divides the parts of plants into primary and secondary organs. The primary or essential organs are root, trunk, branches, bark, wood, and pith or core and the secondary organs, fruit, leaves, and blossoms. In a somewhat different manner, the Ikhwan al–Safa divide the plant into nine parts–root, vessel, branch, bough, leaves, colour, fruit, shell, and germand hold that only perfect plants possess all the nine of them.

Both ibn Sina and the Ikhwan make continuous comparison of plants with the animal world; in the case of the Ikhwan as well as in the case of many later authors comparison is also made with the celestial bodies so as to draw attention to the symbolic correspondence existing between various cosmic orders.33

In their comparisons of plants with animals, Muslim authors were quite aware of the presence of male and female parts of plants which in most cases are united in the same plant but which in higher plants like the palm become differentiated. Ibn Sina draws an analogy between seeds of plants and eggs of birds each of which has a centre that is the source of life and a periphery which provides food for the new generation. Likewise, he compares the growth of the branch of a tree from the trunk with the birth of a new generation in the animal world.

In the classification and description of plants, one can hardly fail to mention ibn al–Baitar, the greatest of the Muslim botanists. Basing himself on al––Ghafaqi and other previous authors like Dioseorides and Galen and making many observations of his own, he described extremely carefully over 1,400 plants from Andalusia, his homeland, as well as from the rest of the Islamic world. Furthermore, in the Kitab al–Mughni, following the example of ibn Sina's Qanun, he gave the medical uses of these plants. The influence of ibn alBaitar was felt everywhere within the Islamic world from Morocco to India. Three centuries later, the Moroccan botanist, al–Ghassani, was to give the best classification of plants found anywhere in Muslim literature, drawing mostly upon the information accumulated by ibn al–Baitar.

In the study of animals, like that of plants, interest evolved around the constitution of plants and their classification and description. The temperament (mizdj) of animals including man was studied in the light of the qualities and nature of which the other kingdoms are possessed. Their relation with the bodily humours may diagrammatically be represented as follows.34

The animal constitution has been understood in terms of the equilibrium of the four humours each of which is connected with a particular internal organ. The organs in turn have been studied in the light of their function of preserving internal equilibrium. Likewise, the effect of plants both as food and as medicine upon animals has been considered with respect to their nature, that is, coldness, moisture,

etc., which the two kingdoms share in common. This is one example of the underlying unity in terms of which the diversities of nature have been understood.

In the classification of animals, as in that of plants, several principles have been followed, some of them based upon Aristotle's works on animals. Al-Jahiz, in his Kitab al-Hayawan divides animals according to how they move. There are, according to him, four classes of animals: those that walk, which include men, quadrupeds, beasts of prey, and insects; those that fly, which include wild birds, hunting birds, and gnats; those that swim; and those that crawl. The Ikhwan al-Safa give several types of classification. One type is similar to that of al-Jahiz, and divides animals into those living in the air like birds and insects; those living in the sea, like fish, crabs, frogs, and snails; those living on land like the quadrupeds; and those dwelling in the earth like worms.[35] Another classification is according to the perfection of the senses, that is, the lowest animals having only the sense of touch; grubs and others having the senses of touch and taste; marine animals and certain land creatures occupying dark places having the senses of touch, taste, and smell; insects having all the senses except sight; and finally perfect animals having all the five senses.

Many Muslim authors have followed Aristotle in classifying animals according to the manner of their reproduction. We find a simplified version of it in the Rasa'il of the Ikhwan where animals are divided into three classes: those that are most complete, which conceive their young, suckle them, and foster them; those which do not perform such functions but leap at the female and lay eggs and hatch them; and those which do none of the above things and come into being in putrefaction. More elaborate classifications of the same type are found in the writings of ibn Sina, ibn Rushd, and many later commentators of the shifa which contain a detailed discussion of animals.

A rather general definition of animals including the jinn[36] and men is given by Qazwini in his 'Aja'ib al-Makhluqat. He divides animals into seven classes. First, there is man who possesses a rational soul (nafs natiqah) and whose body is a miniature model of the universe, a microcosm, each part of which has a spiritual meaning and purpose. For example, he stands erect because of his spiritual aspiration to transcend physical existence, and his head is round because of the perfection of the spherical figure. The second type is of the jinn who are composed of fire and appear in many forms. As Qazwini writes, God created angels from the light of fire, jinn from its blaze, and devils from its smoke. The jinn occupied the earth before the coming of man, that is, the fall of Adam, and had their own religion and prophets; but because of corruption God sent angels to purify the earth, and they were dispersed to remote islands. Satan or Iblis is himself from this species of animals.[37]

After the jinn come the beasts of burden like the horse, then cattle like cows, then wild beasts, then birds, and finally insects and reptiles. Qazwini has further a section on “strange” animals which are primarily mythological and symbolical and finally a chapter on angels, their forms, functions, and colour.[38]

In the description of animals, there is no book in Muslim writings that is as complete as Damiri's Haydt

al-Hayawan in which he is concerned with the traits, instincts, and psychology of animals and their use, medical and spiritual, for man. Following ibn al-Baitar, by whom he was influenced, he classifies animals alphabetically and then gives their description drawing on Aristotle, the natural historians, theologians, esoteric writers like Shams al- Din al-Bfmi, Arabic poetry, and the Qur'an and the Hadith. In his description he often refers to the symbolic character of animals, like the royal quality of the lion, and, as is characteristic of similar descriptive works of natural history, intertwines the spiritual as well as the physical study of nature.39

In discussing the classification and morphology of plants and animals a comparison may be made between the traditional concept of gradation and the modern notion of evolution. There is no doubt that many Muslim authors like Biruni and the Ikhwan were quite aware of the meaning of fossils and of the fact that during other periods of the history of the earth flora and fauna of a different kind existed on the earth. Moreover, the idea of the gradation of Being or the passage of the One Spirit through all the realms of nature has been expressed by many philosophers and Sufis.40

Some thinkers, especially the Masha'i philosophers, envisage, like Aristotle, the gradation of fixed spheres, while the Ishraqi philosophers connect, like Plato, this gradation of spheres with the conception of archetype belonging to the transcendent "world of ideas." There is yet another school of thinkers (al-Jahiz, the Ikhwan al-Safa, ibn Miskawaih, Jalal al-Din Rumi, etc.), whatever their persuasion otherwise, who believe in the continuous self-development of Being from stage to stage-a position nearest to the present-day theory of evolution.

The tradition of Muslim natural history upon which we have touched briefly has had a past going back to the first Islamic century. During this long history it absorbed much of the Greek and certain of the Indian and Persian sciences and created a science which was in every way superior to what had preceded it, except the biological studies by Aristotle. This tradition was to develop as a properly Muslim science, that is, one based upon the particular genius of the Islamic perspective which is centred upon unity. This tradition is manifest in Muslim natural history in many ways, for example in the vision of the unity of nature and interrelation of all things, which Muslim natural historians asserted so often in affirming the presence of the signs of God in nature and in the study of plants and animals for the purpose of seeing divine wisdom therein.

This tradition, especially that part of it which preceded the seventh/thirteenth century, was to have a profound influence on Latin Christianity and on the formation of the science of natural history in medieval times. It is well known how much seventh/thirteenth-century authors like Albertus Magnus and Roger Bacon were indebted to it and how even during the Renaissance men like Paracelsus and Agrippa were constrained to draw largely on Muslim sources. In the Orient, this tradition has continued until the present century although in a much weakened form after the ninth/fifteenth century. Scholars in India and Persia as well as those in the Maghrib have continued to study nature as the unified handiwork of God in order to discover His wisdom, to see "His sign upon the horizon" as the Qur'an states, and to

learn spiritual lessons from it. Only in following this spirit has this tradition of natural history been able to be an integral aspect of Muslim learning and remain in harmony and conformity with the spiritual and intellectual perspective of Islam.

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1. By cosmological sciences we mean all sciences dealing with the cosmos, including the natural sciences. The traditional sciences should, properly speaking, be divided into the metaphysical, dealing with God and supracosmic realities, and the cosmological, dealing with beings in the cosmos. See T. Burckhardt, "Nature de la perspective cosmologique," Etudies Traditionelles, Vol. XLIX, 1948, pp. 216–19.
2. See Seyyed Hossein Nasr, introduction to the section on "Muslim Sciences" in the Mentor Foundations of Scientific Thought. Vol. II, Signet Books, New York, (in press). In his famous 'Aja'ib al–Makhlugat (The Wonders of Creation), abu Yahya Zakariya al–Qazwini writes that the presence of divine wisdom in every atom of the universe and in all forms of multiplicity is itself a proof of divine unity, and quotes the famous verse "un g kull–i s_hai'in lahu ayatun ta`dullu 'ala annahu wahidun" (that His sign exists in all things is a proof of His unity).
3. But in this chapter we are concerned only with botany and zoology.
4. The medieval Christian scientists had a similar aim in view when they sought to observe the vestigio dei in nature.
5. Our argument does not seek to make knowledge subservient to action. Knowledge is always superior to action in the

Islamic perspective as is indicated by such sayings of the Prophet as “One hour of meditation is better than a thousand works of charity,” or “The ink of the scholar is more valuable than the blood of the one who fights the Holy War.” What we wish to show is that in Islam a mental activity for its own sake, divorced from the spiritual and religious needs of man on the one hand and from his social needs on the other, has never been encouraged.

6. Many medieval authors, especially certain alchemists, were quite aware of animal and plant symbolism and were conscious of what they were writing.

7. It is difficult for many to conceive of the possibility that nature and its laws may not have always been the same, but there is no logical or scientific reason to prove that they have been uniform. In fact, this uniformity is one of the assumptions upon which the historical aspects of modern science are based. On the other hand, sacred texts and metaphysical doctrines point to the “cyclic” change both in nature and in man's psychic and mental structure. R. Guenon, The Reign of Quantity and the Signs of the Times, Luzac & Co., London, 1953, and F. Schuon, Les Stations de la Sagesse, La Barque du Soleil, Paris, 1958, pp. 119ff.

8. For general information regarding these and other authors whose names are to follow, see G. Sarton, Introduction to the History of Science, Vols. I to III, Williams and Wilkins Co., Baltimore, 1927–48; A. Mieh, La science arabe et son role dons l'evolution scientifique mondiale, E. J. Brill, Leiden, 1939; B. Carra de Vaux, Les penseurs de l'Islam, Librarie Paul Geutbner, Paris, 1921–27, Vols. II and IV. Among the texts mentioned above, the Muruj al–Dkahab (Prairies of Gold) translated into English by Sprenger, W. H. Allen Co., London, 1841, especially offers useful material on the historical and geographical framework of natural history.

9. Muslim natural historians not only divided the earth into several climates, each with its own flora and fauna in conformity with its particular terrestrial con – dition, but further assigned each climate to a particular planet which acted as the archetype and “guardian angel” for that particular climate. For an example of this astrological theory, see the Rasa'il of the Ikhwan al–Safa, Cairo, 1928, I, pp. 116ff. and P. Duhem, Le systeme de monde, Vol. 11, A. Hermann et fils, Paris, 1914, pp. 267ff.

10. Regarding the internal constitution of animals, perhaps no book is so masterly and complete as ibn Sind's Qanun. See the introduction to ibn Sins, A Treatise on the Canon of Medicine, Incorporating a Translation of the First Book, by 0. C. Groner, Luzac & Co., London, 1930; also ibn Sina, Poeme de la medicine–Urgdza f't–tibb, Societe d'edition “les Belles Letters,” Paris, 1956.

11. See S. Mahdihassan, “Chemistry, a Product of Chinese Culture,” Pakistan Journal of Science, 1957, Vol. IX, No. 1; also his “Alchemy, in Its Proper Setting, with Jinn, Sufi and Suffa, as Loan–words from the Chinese,” Igbal, 1959, Vol. VII, No. 3.

12. See P. Kraus, Jabir Ibn Hayyan, 2 Vols., Imprimerie de l'Institut Francais d'Archeologie Orientale, Cairo, 1942–43.

13. A. Mingana, Encyclopaedia of Philosophical Sciences as Taught in Baghdad in c. 817 A. D. or Book of Treasures of Job of Edema, Cambridge, 1935.

14. An interesting section of the Rasa'il dealing with the discussion between man and animals has been translated into English as Dispute between than and the Animnals, by J. Platts, V. H. Allen Co, London, 1869.

15. See J. Stephenson, “The Zoological Section of the Nuzhat al–Qulub,” Isis, 1928, Vol. NI, pp. 285–316.

16. This famous book of tales about the animals is the Sanskrit Panchatantra translated into Pahlawi and later into Arabic by ibn Muqaffa'. Various versions of it in Arabic and Persian like Anwar–i Suhaili of Husain Wa'iz Kashifi have remained very popular throughont the centuries.

17. This genre of writing has continued to recent times. A work called Insan ua Haiwan (Men and Animals) by Haji Mulls Isma'il Sabziwhri written during the last century, treating of the moral and spiritual qualities of animals, is still widely used by Persian preachers in their sermons.

18. By “exclusive” we do not mean so strict a limitation of the subject as is found in a modern text–book on botany or zoology. Muslim sciences have been too closely united to permit a complete separation of one subject from another so that in nearly every book dealing with plants and animals there are references to other sciences as well as to philosophy and theology.

19. Ibn Khaldum in referring to this book writes that “people learned the sciences of sorcery from the work and developed its manifold branches” (Muqaddimah, tr. F. Rosenthal, Pantheon, New York, 1958, Vol. III, p. 156). Many Western historians have refused to believe that ibn Wahshiyyah could know anything about the Babylonian civilization and therefore consider

his claim to be a forgery.

20. M. Hamidullah, “Dinawari's Encyclopaedia Botanica (Kitab al-Nabat) in the Light of Fragments in Turkish Libraries,” Melange F. Koprulu, pp. 195-200. See also B. Lewin, The Book of Plants of Abu Hannah al-Dinawari, A. B. Lundeguistska Bokhandeln, Upsala, 1953, introduction, in which is discussed the influence of this early work on the later Muslim botanists.

21. This sixth/twelfth-century Maghribi botanist lies given some of the most detailed descriptions of plants found anywhere in Muslim botanical literature.

22. His two most important books are the Kitab al-Jami' ft al-Adwiyat al-Mufradah (The Complete Book of Simple Drugs), dealing with the classification of plants, and Kitab al-Mughni fi al-Adwiyat al-Mufradah (The Sufficient Book of Simple Drugs), dealing with the medical properties of plants.

23. These are not elements in the modern sense but rather the principles. They are to the sensible substances of nature what the geometric points and lines are to points and lines actually drawn on a piece of paper.

24. The union of the soul, which in Muslim cosmology lies above the cosmic spheres, with a certain combination of the elements in the sublunary region is also considered to be ad extra and not as in a compound. As the combination of elements attains more harmony and greater equilibrium, it becomes purer so that the combination naturally attracts the soul to itself. In the minerals the elements are not as perfectly balanced as in animals so that they attract a lower soul unto themselves.

25. Although minerals have been considered by many Muslim authors to be trans. mutable into one another, plants and animals have been considered to be unchangeable. Each plant, according to the Ikhwan al-Safe, for example, has a chyme (kaimii8) formed from a particular combination of elements which always reproduces the same plant as each animal has a sperm which propagates the same species.

26. “Although plants are obvious and visible creations, the causes of their existence are hidden and veiled from the perception of man. It is what the philosophers call 'natural forces; what the Lari'ah calls 'the angels and troops of Allah appointed for the nurturing of plants, the generation of animals and the composition of minerals,' and what we call 'partial spirits.'" Ikhwan al-Safe, Rasa'il, II, p. 130; also R. Levy, The Social Structure of Islam, Cambridge, 1957, p. 490.

27. We are following here the teaching of the Ikhwan, but these views are shared by most Muslim authors writing on this subject.

28. The Ikhwan have a most interesting section in their Rasa'il in which the animals dispute with man over his right to use them for his own ends. They refute all of man's claims of superiority by demonstrating their own spiritual and bodily qualities and virtues. It is only by realizing that there are among men a few sages and saints who in their spiritual realization fulfil the purpose of the whole of creation that animals finally agree to submit to man. See the Dispute between Man and the Animals

29. The most thorough discussion of the vegetative and animal souls appears in the sixth part of the Tabi`iyat of the Shila' of ibn Sina where he deals in detail with all the faculties of plants and animals and their functions. Cf. J. Bakos La psychologie d'Avicenne, Editions de l'Academia Tschechoslovaque des Sciences, Prague, 1956. Ibn Sina and also most other authors writing on the faculties of the vegetative and animal souls derived many of their ideas from the De Anima of Aristotle. The Ikhwan, however, enumerate the faculties somewhat differently: as attraction, fixation, digestion, repulsion, nutrition, formation, and growth.

30. For a summary of ibn Sind's views on the souls and their faculties, see E. Gilson, “Les sources greco-arabes de l'augustinisme avicennant,” Archives d'Histoire Doctrinale et Litteraire du Moyen Age, Vol. IV, 1929, pp. 5-149.

31. In general, the Muslims depended more upon the Greeks in the study of animals than that of plants. Whereas Aristotle's works on animals were studied extensively, the botany of Theophrastus was nearly ignored. Muslim authors had already created a science of plants drawing their terminology mostly from the Qur'an and Arabic poetry before the first important Greek text on plants, that is, the famous work of Dioscorides, was translated into Arabic.

32. See the botanical section of the Nuzhat al-Qulub, irazi, Bombay, 1311/1893, pp. 87 ff., where sixty-nine fruit-bearing trees and sixty-six fruitless ones are described in alphabetical order. Qazwini, like many other Muslim natural historians, gives not only the description of a tree, the quality of its fruit and its wood and the location where it is found, but also its medical uses, its nature, that is, whether hot or cold, dry or moist, and its appearance in literature and sacred books. As for seed bearing plants, Qazwini follows a similar procedure, describing altogether 280 kinds, each class arranged alphabetically.

33. The famous scientist and compiler, Biruni gives a good example of this astrological correspondence. He writes: “The various organs of a plant are distributed to different planets. Thus the stem of a tree is appropriated to the Sun; the roots to Saturn, the thorns, twigs, and barks to Mars; the flowers to Venus; the fruit to Jupiter; the leaves to the Moon; and the seed to Mercury” (Elements of Astrology, tr. R. Ramsay Wright, Luzac & Co., London, 1934, p. 236).
The correspondence between plants or animals and the planets is not to show astral “influences” as is done in contemporary astrology which is only a residue of the real subject known by the same name in medieval times. It is to show rather that the physical world is a symbol of the intelligible world, that there is an analogy between the archetypes symbolized by the planets and their earthly shadows which are the physical forms.
34. This is a schematization of ideas presented in ibn Sina's medical poem as well as in the Qanun to which we have already referred. Pathology based on the doctrine of humours is a heritage from the Hippocratic tradition of medicine as systematized by Galen.
35. Mustaufi Qazwini in the Nuzhat al-Qulub follows a somewhat similar procedure dividing animals into those living on land, in sea, and in air, and subdividing each of the classes according to its more specific features
36. They may be said to symbolize psychic forces.
37. A similar account is to be found in the Rasa'il of the Ikhwan
38. We see in Qazwini's writings a good example of the blending of the natural and supernatural order to which we have already referred. His description of the colours and forms of animals and angels served as an inspiration for later Persian miniaturists
39. Damiri also interrupts his discussion of animals at several places in order to write about Islamic history, prayers based on the divine names, the science of jafar (symbolism of letters), and other subjects.
40. A beautiful expression of this doctrine appears in the Mathnawi of Maulana Jalal al-Din Rami. See Book IV, verses 3637 to 3647 of the text of Mathnawi ed. R. A. Nicholson, E. J. Brill, Leiden, 1929.

Chapter 67: Medicine

A – Introductory

It was not until nearly a hundred years after the conquest and consolidation of their empire that the Muslims turned their minds towards creative pursuits. It is remarkable in this context to find how quickly they directed their activities to productive ploughshares and prolific pens. Soon the Muslim Empire extended from Andalusia to the Indus, and its various parts vied with one another in producing intellectual giants in every branch of art and science. Nearly half a century ago Fonahn[1] enumerated no less than one hundred and fifty-one works on Persian medicine alone during this period and Max Meyerhof[2] says that “the treasure-houses of Islamic science are just beginning to be opened. In Constantinople alone there are more than eighty mosque libraries containing tens of thousands of manuscripts.

In Cairo, Damascus, Mosul, Baghdad, as well as in Persia and India there are other collections.... Even the catalogue of the Escorial Library in Spain which contains a part of the wisdom of Western Islam is not yet complete.” The subject of Muslim medicine is so vast that in the following pages only a bird's-eye view of it can be given.

For a proper appraisal of the Muslim contribution to medical science it is important to ascertain its position in Arabia at the birth of Islam. The country, as everyone knows, was at the time torn by internecine wars and family feuds. Ignorance was abysmal and education non-existent. The city surgeon (jarrah) cauterized wounds, sustained in war, or applied obscure ointments as healing balms, and the village apothecary administered simples for simple ailments. People generally were living under most unhygienic conditions. Such was the dismal medical background when the Prophet of Islam started preaching. Early in his career he said that knowledge was of two kinds, that of religions and that of the bodies (i.e., of medicine). Inspired by the Qur'anic injunction,[3] he preached moderation in all walks of life. Realizing the miserable lack of medical facilities, he advocated prophylactic measures as is evident from the following.

Sa'di,[4] the great Persian poet, philosopher, and traveller, relates the story of an eminent Persian physician who was sent by the Persian king to the Prophet to minister to his own as well as to his followers' needs. For a long time after the physician's arrival in Mecca no one called on him or sought his treatment. Driven by ennui he approached the Holy Prophet and complained of his forced odium. The Prophet's reply was: “These people do not eat until they are hungry nor drink until thirsty and then cease eating while a desire for food still remains.” That must be the reason for their perfect health, said the physician. But medicine was not the Prophet's mission. He had dedicated himself to the moral and spiritual uplift of humanity at large. Winwood Reade[5] says, “Muhammad's career is the best example that can be given of the influence of the individual in human history. That single man created the glory of his nation and spread his language over half the earth.

The words which he preached to jeering crowds are now being studied by scholars in London, Paris and Berlin ... and in obscure villages situated by obscure streams.” According to Browne,[6] the Prophet's biggest miracle was that he brought unity among the fighting Arabs with the result that they adopted one goal; and soon the Arabs as one nation became rulers of half of the civilized world. Care of the sick and wounded was but one facet of the Prophet's humanitarian personality. As pointed out by Wasti, the so-called Tibb-i Nabawi is not, therefore, to be confused with any medical treatise as such.[7] The book is not taught in any recognized medical Yunani institution (as remarked by Browne), nor is it credited by Hakims and scholars of Arabian medicine.

The only known physician in Prophet's time was al-Harith ibn Kaladah, an Arab Jew who later embraced Islam. He had studied medicine at Jundi-Shapar school of medicine in Persia. He used to be consulted at the time of dire necessity, and he mainly advised moderation. Among the surgeons of this time the last known was ibn abi Ramsiah of the tribe of Tamim.

The Arabs adopted their medical theory chiefly from the Hippocratic and Galenic systems, though there were plentiful translations from Syriac, Persian, Indian, and Egyptian authors as well. The Hippocratic system, as is well known, is based on the humoral theory, i, e., the four humours of the body: blood, phlegm, choler, and melancholy. This system served the Arabs and Persians for five hundred years as it

had served the Greeks and Romans for a thousand years before that. The Persians carried the humoral theory a step further by identifying the four humours with the four elements of nature, i, e., air, fire, earth, and water. Browne[8] however, defines Arabic medicine as one which has been presented in Arabic and considers that a large portion of it has been derived from the Greeks, though contributions have also been made by Indians, Persians, and scholars of other countries. He further states that during the period between the downfall of the Greeks and the Renaissance of Europe, the Arabs kept up the medical traditions and subsequently Europe was benefited by their treasure of learning.

Wasti[9] remarks that the Arabs not only translated the old medical books but also prepared their abstracts, commented upon them, enriched them, and improved upon them. In his support Cumston [10]states, “It has been regarded for a long time that the Arabs slavishly copied the Greeks, rather they stood in the way of progress in medicine. But this is a wrong conception, because when the Arabs came into the field, Greek medicine had completely vanished and everywhere charm and magic were practised. At that moment the Arabs not only saved the Greek knowledge from destruction but popularized Greek medicine by commenting and improving on it and subsequently created a taste for scientific learning in Europe. Even if the Arabs had only restricted their activities to collecting and translating Greek medical books into Arabic and had transmitted this knowledge to Europe again, it would not have been a mean achievement. But they stepped further and wrote original books.”

While the Greeks surpassed all other peoples in their achievements in antiquity, the Muslims did so in the Middle Ages. Their works written in Arabic were, in Sarton's words, “the most original, the most valuable and the most pregnant.” Arabic became a most progressive and scientific language from the middle of the second/eighth to the end of eleventh/fifteenth century. In the contemporary West there were hardly any names as glorious as those of 'Ali al–Tabari, Ahmad al–Tabari, al–Razi (L. Rhazes), 'Ali ibn al.'Abbas (L. Haly), ibn al–Baitar, abu al–Qasim al–Zahrawi (L. Abulcasis), and ibn Sina (L. Avicenna). In fact, this was precisely the period which is known as the dark age of the West.[11]

The spread of Greek traditions was stifled in the West by the extreme Roman utilitarianism which was followed by the theological expediency and later by a theological domination which seemed for a long time to destroy every hope of genuine scientific revival. After the birth of Islam, the Arabs on the other hand were fired with the zeal for knowledge. The following sayings of the Prophet exhibit the importance he attached to the seeking of knowledge:[12]

1. Seek ye knowledge from the cradle to the grave.

2. To seek knowledge is the duty of every Muslim man and woman.

3. Seek ye knowledge even if it be in China.

4. The ink of the scholar is more holy than the blood of the martyr.

5. He who leaveth his home in search of knowledge walketh in the path of God.

6. He dieth not who seeketh knowledge.

In medicine the Arabs translated Hippocrates, Galen, and Dioscorides. Cumston says that the Arabs extracted the most important material from Greek writings and placed it in relief, leaving aside everything that was superfluous.[13] One has merely to read Galen and afterwards ibn Sina in order to see the difference. The former was obscure, the latter perfectly clear; order and method reign in the latter, which in the former we seek in vain.

Khairallah, in evaluating the contribution of Muslims to medical sciences, enumerates the reasons which militated against their work. For instance, most of the Arabic books and manuscripts have been lost; a bare one per cent has been salvaged so far. The Mongol hordes carried death and destruction in their wake, and the fanaticism of European conquerors in the south-west of Europe destroyed the largest part of Arabic writings. Fortunately, most of the classics have survived. Many of the books that have come down to us have been distorted and mutilated either by bad copying or by spurious editions. "Repeated copying from copies and alterations and additions inserted by various teachers helped in their distortion so that one rarely sees two copies of the same book that read alike."[14]

The manuscripts that have come down to us have not been studied with care and diligence. They require a thorough study before we can arrive at a fair estimate of Muslim contribution to medicine. The Latin translations from Arabic were often careless. Many of the Latin translators claimed as their own what they had only translated. Campbell believes that "the Latin translations failed to convey the true conception of Arabian medicine to the medieval scholastics"[15]; and Browne says that "it must be said once for all that no just idea of Arabian medicine can be derived from the imperfect renderings of standard Arabic books."[16]

B – Collection And Translation Of Books

Before proceeding to examine the contribution of different Muslim scholars to medicine, a word might here be put in about the translators who laid the cornerstone of the edifice built by the subsequent authors.

The task of translating from foreign languages, e. g., Greek, Syriac, Pahlawi, etc., into Arabic was more difficult than would appear at first sight; but for the princely patronage and philanthropists' munificence, it might well have been impossible. In this connection the names of al-Mansur, Harnn al-Rashid, and al-Mamun in Baghdad, of Zangi in Damascus, of Sahib al-Din in Cairo and of 'Abd al-Rabman III and Hakam in Andalusia illuminate the pages of history. Their generosity and fair-mindedness made no distinction between Christians, Jews, Sabaeans, and Muslims. Their boundless bounty and complete lack of bigotry gravitated men of letters to their capitals.

But the immensity of the task of translation can be judged from the fact that the vehicle of the new Muslim civilization was the language which had never been used before for any scientific purpose and

yet it was in this very language that every bit of knowledge had to be translated for proper assimilation. This necessitated the creation of a philosophic and scientific terminology which did not exist. The collection of manuscripts was carried on by the Muslims at that time with fervid zeal in every corner of the civilized world. Arab conquerors sometimes made the acquisition of manuscripts a part of the peace treaty. Thus, when Harun al-Ras_hid conquered 'Ammilriyah and Ankara, he collected all the manuscripts he could find,[17] and al-Mamfin sent a special mission to the Byzantine Emperor to collect manuscripts.[18] On several occasions books were sent and accepted as appeasing presents.[19]

After collecting all available manuscripts from Greece, Asia Minor, Egypt, Syria, Persia, and India, the Caliphs, princes, and rich men appointed able men to study, edit, and translate the manuscripts, but before translation, several copies were thoroughly studied, compared, and edited. Ibn al-Ash'ath divided each of Galen's books into sentences, paragraphs, chapters, and divisions-a thing that was never done before-in order to facilitate the acquisition and understanding of Galen's teaching.[20]

According to Khairallah, two methods of translation were adopted. The first was that of ibn al-Batriq and 'Abd al-Masih Na'im al-Himsi who undertook literal translation. This was obviously unsatisfactory as there were many words which had no Arabic equivalent; besides the whole construction and syntax were different in the different languages. The second method was that of Hunain ibn Ishaq and al-Jauhari, who would read the whole sentence or paragraph, get its meaning or sense, and then put it in proper Arabic.[21] According to al-Nadim's Fihrist, Khalid ibn Yazid ibn Mu'awiyah was the first to encourage Greek philosophers in Egypt to translate works on medicine. He died in the beginning of the second/eighth century.

The early translations were made by Christians, Jews, and Sabaeans under the patronage of Muslim rulers. The first man to translate a medical work into Arabic was Masarjawaih (b. 61/680), a Jewish physician from Basrah. But the credit of being the greatest translator of medical works goes to a renowned Nestorian physician of remarkable scholarship, Hunain ibn Ishaq, who died in Baghdad in about 264/877. He was assisted by Ishaq, his son, Hubais_h al-A'sam, his nephew, Yabya ibn 'Adi, 'Isa ibn Yabya, and others. Other translators of repute were abu Yabya ibn al-Batriq (d. a. 191/806), Thabit ibn Qurrah (d. 289/901), a Christian from Ba'labakk.

The work of these translators and a host of others covered many subjects besides medicine. This great intellectual activity in due course brought its results, for gradually every large city developed a library which contained reading-rooms, quarters for translators, and meeting-places for scientific discussions. Such were Bait al-Hikmah (House of Wisdom) in Baghdad and Dar al-Hikmah (Hall of Wisdom) in Cairo. The library at Cordova had over a quarter of a million volumes. The library of Nuh ibn Mansur, ruler of Bukhara, contained books on all subjects together with their indices. Ibn al-Matron, the famous physician of Salah al-Din, had a library of 10,000 manuscripts. Ibn al-Tilmidh, author of the best known pharmacopoeia of his time, had 20,000 manuscripts in his library. The well-known medical historian al-Qifti had a library worth more than 50,000 dinars. Every large hospital possessed a library of its own.[22]

C – Hospitals

The hospital at Jundi-Shapdr in Persia was the first and foremost to influence the Arabs. Al-Harith ibn Kaladah, a relation of the Prophet practising during his time, was an alumnus of this hospital. Small hospitals for the blind and lepers were built during the Umayyad period, but they were little more than segregation camps. Proper hospitals, however, came to be built during the 'Abbasid period. Those at Baghdad, Damascus, and Cairo were the best known at the time. Besides the hospitals for the lepers and the blind, there were asylums for the insane and ambulatory clinics to minister to the needs of far-flung places where there were no physicians. Prisons were not forgotten and physicians looked after prisoners since they were considered to be a State charge. First-aid stations were established near mosques where large numbers congregated. The army had its physicians, and field hospitals attached to the armies were carried on camel-back. Female nurses used to serve in the field hospitals.

General hospitals were established not only at Baghdad, Damascus, and Cairo, but also at Mecca, Jerusalem, Aleppo, Harran, and several cities in Andalusia. Patients in such hospitals were admitted on the sole criterion of their condition without prejudice to colour, creed, sex, or social status. AlMansiir Qalawun, the ruler of Egypt, dedicated the hospital erected by him for the benefit of "the king and the subject, the prince and the soldier, the great and the small, the freeman and the slave, for men and for women."[23] Foundations (auqaf) were created to support the hospitals and were administered by high dignitaries with the utmost care. Issa writes in his Histoire des bimaristans al'epoque Islamique:[24] "The furniture, bedding, and clothing at the Mansiiri hospital at Cairo, rivalled in their luxury and perfection those that adorned the palaces of the Caliphs and the princes. The nourishment consisted of flesh of fowl and mutton, and each patient was given the quantity of food that the state of his health permitted."

Sometimes musicians and singers were brought to hospitals to entertain the sick and convalescing patients.

The conditions prevailing in hospitals in those days can best be described in the words of Usaibi`ah[25] "Abu al-Hakam, the dean of the Nari hospital of Damascus, used to make the rounds of patients every morning, find out their condition and consider their affairs. With him were his assistants and orderlies and all that he wrote down as orders for the patients regarding medicine and diet were carried out on time and without delay.

After finishing his rounds he used to go to the citadel and treat whoever was sick among the nobility and government officials. He would then come back to the hospital and sit in the large auditorium, read his books, and prepare his lectures. Nur al-Din had installed in the hospital a large library with a collection of books and manuscripts placed in bookcases in the main hall. Several physicians and students used to come and sit at his feet. He taught the students and discussed medical topics and interesting cases with the physicians." Usaibi`ah continues: "Patients were examined in an outside hall and those who did not need hospital treatment were given prescriptions which were prepared at the hospital pharmacy.

Those who needed hospital treatment were registered and admitted. They were given a bath and made to put on clean hospital clothes, their own clothes being taken away and stored. They were kept at the hospital until completely cured. On their discharge from the hospital they were given a suit of clothes and some money to defray immediate and necessary expenses outside the hospital until they were able to work." Usaibi'ah proceeds: "A pharmacy under a competent and registered pharmacist was attached to every large hospital. It was well stocked with syrups, all sorts of drugs and drug preparations, fancy porcelain, and rarities. Pharmacists were licensed and registered and in each large town an inspector kept constant watch over pharmaceutical preparations and chemical products.

"Attached to large hospitals were medical schools where students gathered in the main hall and reviewed their studies and copied medical manuscripts which were compared and corrected by the teachers. The teachers lectured to them from the books of Galen and later from al-Razi and al-Majflsi until the advent of ibn Sina's Canon which eclipsed them all."[26]

Several books were written on hospitals and hospital management. Unfortunately, most of them have been lost. A1-Razi wrote a book on Sif at alBimaristan and Zahid al-`Ulama' wrote Kitdb al-Bimaristan. The first regular hospital was built by Haran al-Rashid in Baghdad in 170/786, but a bigger and more up-to-date hospital was founded in 368-3691978-979 by `Adud alDaulah. In Damascus there was the al-Nuri, built by Nur al-Din Zangi; one was built by Salah al-Din at Jerusalem and another at Cairo. Qalawun built the al-Mansuri at Cairo. Besides these there were hospitals in Mecca, Medina, Harran, and other notable towns. In Andalusia there were over fifty hospitals in Cordova alone, besides those at Granada, Seville, and Toledo.

It will be seen from a brief description of the conditions obtaining at the time in hospitals that in many respects they were better than those prevailing even today. The Arabs may not have been the first to build hospitals but they were certainly the first to improve upon them. They started to give regular instruction in hospitals and to have out-patient departments. They were the first to have regular inspection over the administration and finances of the hospitals, the first to examine and license physicians, and the first to have regular pharmacies attached to hospitals. They went further by examining and licensing a physician for the practice of a speciality. The interest of Muslims in building hospitals was not limited to the Arab period; it continued throughout the ages.

D - Physicians And Surgeons

Let us now come to the most important part of our narrative, namely, the great authors and practitioners of the medical science whose theory and practice enlightened the path of scientific research and whose fame is indelibly imprinted on the pages of history. Here again, needless to say, we shall have to confine ourselves to the selection of a few of these geniuses.

The first great name amongst Muslim physicians is that of abu Bakr Zakariya al-Razi. He was a prolific writer and is said to have written no less than 117 books dealing with all the different branches of

medicine. Of al-Razi's works, al-Hawi (Continens), running into twenty volumes, is undoubtedly the most important. This work was translated into Latin by Faraj bin Salim in 678/1279 and printed at Brescia nearly two centuries later. Al-Razi did not actually write this book; he left notes on his original observations, extracts from other peoples' works, and clinical notes of his medical experience. All this material was sold by his sister to ibn al-'Amid, the vizier of Rukn al-Daulah, who got the drafts of those rough notes properly arranged in book-form by the noted physicians of his time including al-Razi's own pupils. 'Ali ibn 'Abbas (Haly Abbas) was of the view that during his time only two copies of the book were in existence. He regarded al-Hawi the repository of medical knowledge concerning hygiene, diseases, their symptoms, and treatment with medicine and diet, al-Razi's sources being Hippocrates, Galen, and all the physicians that preceded him. E. G. Browne translated some of its clinical notes into English and Max Meyerhof published the text and translation of some more.

Relatively speaking, the most important of al-Razi's minor treatises is Kitab al-Judari w-al-Haabah. It deals with smallpox and measles. It was translated into Greek and Latin and printed in several European countries. This work is particularly significant because it is the first to give a clear description of smallpox as a disease and also the first to give a symptomatic distinction between smallpox and measles. Al-Razi was the first to include in the pharmacopoeia the white-lead ointment, later on known in the Middle Ages in Europe as Album Rhases, and the first to use mercury as a purgative. He was also the first to use "animal gut as a ligature for surgical operations and was the first to recognize the reaction of the pupil to light."[27]

The next great physician was 'Ali ibn al-'Abbas al-Majfisi known in the West as HalyAbbas. Either he himself or his father was originally a Zoroastrian; hence the name al-Majfisi. He was a Persian by birth and flourished during the period of 'Adud al-Daulah and died in 384/994. After al-Razi and ibn Sina his is the greatest name in the Caliphate of Baghdad. His most famous work is the medical encyclopedia called the Kitab al-Maliki (Liber Regius). Sarton regards this work as more systematic and concise than al-Razi's al-Hawi and more practical than ibn Sind's Qanun by which it was superseded. Half of the book deals with the theory and half with the practice of medicine.

Most important parts of it relate to dietetics and materia medica. He made some original clinical observations and was the first to give close description of the capillary circulation long before Harvey. He says that during relaxation (diastole) the pulsating vessels (arteries) that are near the heart draw air and thinned blood from the heart by suction, because during their contraction (systole) the arteries empty themselves of blood and air, so that when they relax, air and blood is sucked to them to fill them. Those that are near the skin draw air from outside. Those that are in the middle, between the heart and the skin, have the property of drawing the thinnest blood from the non-pulsating vessels (veins).'

That is because the veins have pores communicating with the arteries. The proof of this is that if an artery is cut, all the blood that is in the vein is emptied through the cut. He was also the first to give proof of the motion of the womb during parturition and to show that child does not come out by itself, but it is

the movement of the womb that pushes it out.[28] In al-Qifti's words al-Maliki was the splendid work and the noble treasure of the theory and practice of medicine admirably arranged. It had been one of the most popular texts on medicine until it was replaced by ibn Sind's Qanun.

Al-Majusi gives a remarkably well-worded advice to the physicians. He says that the patient should be treated if possible with diet, not with drugs. If he can be treated with simple drugs he should not be administered compound ones, nor indeed strange or unknown ones. With regard to the relation between the physician, the patient, and the disease, he says that they are three. If the patient co-operates with the physician they would become two against one and would be able to beat the disease, but if he does not listen to the physician nor follow his direction, he and the disease would be two against one, i.e., the physician; one can hardly beat two. He states that all physicians agree that the preservation of health is more important than the cure of disease and quotes Hippocrates that the curing force of disease is nature itself.[29]

Al-Majusi's surgical technique is no less remarkable. His lucid description of the surgical operation for the removal of tubercular glands is a fine specimen of his art. He says: “Cut the skin longitudinally down to the gland. Retract the skin with hooks. Dissect slowly and gently, freeing the gland from the tissues around it. Take care not to cut any vessel or puncture any nerve. If a vessel is cut, ligate it, lestt the haemorrhage obscure the field and prevent you from carrying out a proper and thorough operation.” After removal of the gland, put your finger in to feel for any small glands that might be left. If there are any, remove them too. When all the glands are removed, suture the incision.

Al-Majusi recognized the gravity of cancer and says that medicines do not help in curing the disease. He advises removal of the whole area affected by cutting at a distance from the growth so that none of its roots are left. He advises that after removal blood should not be stopped from running but that the surgeon should see that the diseased blood is drained off.[30]

The famous physician who succeeded 'Ali ibn 'Abbas in the Muslim world was abu al-Qasim Khalaf ibn 'Abbas al-Zahrawi (d. 404/1013). He took his name from his birthplace al-Zahra', the famous suburb of Cordova. He was Court physician to the Caliph al-Hakam II. His fame chiefly rests on surgery for he was admittedly the greatest of all Muslim surgeons. He wrote one of the biggest medical encyclopedias, al-Tasrif, in thirty sections. One of the topics discussed in this work is the preparation of medicines by sublimation and distillation. It’s most important part is, however, surgical wherein he “introduces and emphasizes such new ideas as cauterization of wounds, crushing stone inside the bladder, and the necessity of vivisection and dissection.”[31] He also deals with obstetrics and the surgery of eyes, ears, and teeth and gives a description of surgical instruments.

The surgical part of al-Tasrif was translated into Latin by Gerard of Cremona, and various editions of it were published at Venice, Basel, and Oxford from the ninth/fifteenth to the twelfth/eighteenth century. For centuries it was used as a text-book in surgery in the universities of Europe such as Salerno, Montpellier, and other schools of medicine.[32]

The man who is described by one Orientalist as “the most famous scientist of Islam and one of the most famous of all races, places and times” and by the other “the greatest man that this world has ever seen”[33] is abu 'Ali al-Husain ibn'Abd Allah ibn Sina. William Harvey puts him in the same category as Aristotle and Cicero. At the age of eighteen he cured the Samanid Amir of Bukhara and as a result was appointed Court physician and given permission to use the royal library.

Ibn Sina's greatest medical work was the Qanun (Canon) used as “medical Bible for a longer period than any other book,”[34] an encyclopedic work of about a million words covering the entire medical knowledge, ancient as well as contemporary. In many ways he resembled Galen. Before ibn Sina's Qanun, the best work on medicine was al-Razi's al-Hawi but, according to all competent authorities, that work was superseded by the Qanun. Ibn Sina analysed for the first time pathological and psychological phenomena and made acute observations about the differential diagnosis of medastinitis and pleurisy, infectious nature of phthisis, skin diseases, sexual ailments and perversions (including love-sickness), diseases of the nervous system, and transmission of diseases through water, food, and soil.

Ibn Sina is the first to write a careful description of meningitis and differentiate between primary and secondary meningismus. He also gives a full description of the various types of diseases which cause jaundice. He differentiates between facial paralysis of central origin and that of local origin. He describes apoplexy as being caused by plethora. He gives a clear description of the symptoms of pleurisy and its differential diagnosis. The signs of pleurisy, he says, are: continuous fever; stitch in the side which many times does not appear except after a deep breath; shortness of breath; see-saw pulse; and cough, usually dry in the beginning, but may be wet and with expectoration from the start. He says: In as much as pleurisy might resemble hepatitis and pneumonia, we must differentiate between them. The difference between pleurisy and hepatitis is that in the latter the pulse is wavy, the pain is dull and heavy and not pricking, the face is yellowish, the urine thick and the stools “livery.” There is heaviness in the right side over the liver region and no stitch in the side. The difference between pleurisy and pneumonia is that in the latter the pulse is wavy, the shortness of breath more marked, the breath hotter besides other symptoms?[35]

The Qanun is divided into five major sections. Briefly stated, the contents of these sections are as follows. The first section deals with definitions, elements, humours, temperaments, and spirits; anatomy (bones, muscles, nerves, arteries, and veins); diseases, their causes and symptoms; hygiene and pro-phylaxis; and general treatment. The second section deals with simples, in an alphabetical order. The third section gives a description of diseases from the head downwards, including the anatomy of the organs-head, brain, nerves, eyes, ears, nose and mouth; tongue, teeth, lips and gums; throat, chest, and lungs; heart, breast, oesophagus and stomach, liver, and gallbladder; spleen, intestines, male and female genital organs-and general diseases. The fourth section deals with fever, prognosis and crisis; swellings and ulcers, surgery, fractures and dislocations, poisons, skin diseases, and cosmetics. The fifth section deals with compound drugs and therapeutics.

Several commentaries on the Qanun are extant, the best known being by ibn Nafis under the title al-Mu'jiz. In the Asian part of the Muslim world, the Qanun held the sway, but in Spain it was played down by ibn Zuhr and ibn Rushd. It was translated into Latin by Gerard of Cremona[36]

Another unique book by ibn Sina is the Urjuzah fi al-Tibb, which is a medical poem that sums up the medical knowledge of the time. It was meant to facilitate the study of medicine. With their wonderfully tenacious memories the Arabs were able to memorize it. Its first part deals with the theory of medicine and hygiene, and the second with treatment. Another of his wellknown books is al-Shifa'. Usaibi'ah credits him with having written nineteen medical and ninety non-medical books [37]

The illustrious "Shaikh," by which name ibn Sina is generally known throughout the Muslim world, died at Hamdin in 428/1037. He reigned supreme for more than six centuries not only in the Muslim world but also in Christendom. His theories, as propounded in the Qanuu, are still widely respected in the Orient by Hakims and form the cornerstone of the history of medical teaching in the Occident.

In Egypt flourished ibn al-Haitham (Alhazen of the West), "the greatest Muslim physicist and one of the greatest students of optics of all times."[38] He was born in Basrah but migrated to Egypt in the time of Caliph al-Hakim. "He was also an astronomer, mathematician, physician, and he wrote commentaries on Galen and Aristotle." He corrected the Greek misconception about the nature of vision and taught, for the first time, that light does not "exude" from the eye but enters it. He also taught that the retina was the seat of vision and that the impressions made upon it were conveyed along the optic nerve to the brain forming visual images on symmetrical portions of both retinas.

In Spain there was a most famous family of physicians whose contribution to medicine was no less remarkable. Translations from the works of this family are found in the libraries of Western universities even to the present day. We are referring to the ibn Zuhr family that drew its name from their ancestor Zuhr. The first great physician of the family was abu Marwan 'Abd al-Malik (d. 470/1077-78). He was renowned as a diagnostician. His son abu al-'Ala' (d. 525/1130-31) was even a greater physician than him. He was first attached to the Court of Seville but was later raised to the rank of a vizier when that kingdom was conquered by Yusuf ibn Tashifin. He wrote several medical works, viz., Kitab al-Khwass (Book of Properties), Kitab al-Adwiyah al-Mufradah (Book of Simple Drugs), Kitab al-Idah (Book of Explanation), Mujarrabat (Personally Tested Prescriptions), Kitdb Hall Sukiek al-Rdzi 'ala Kutub Jalinus (Resolution of al-Razi's Doubts regarding Galen's Works), Kitab al-Nukdt al-Tibbiyyah (Book on Principles of Medicine). The last mentioned work among other things specially deals with climatological and anthropological conditions prevailing in Marrakush and with deontological guidance. He also wrote a treatise in refutation of certain points in ibn Sina's work on simple drugs.

The most illustrious member of this family was abu Marwan 'Abd al-Malik ibn abi al-'Ala' Zuhr (d. 556-557/1160-1161) known in Latin works as Avenzor. His supremacy as a physician was acknowledged not only in the Muslim world but also in Christendom. His medical theory had strong empirical tendencies. He may justly be said to be the greatest clinician of Islam after al-Razi. Only three

of his at least six works are now extant.

1. Kitab al-Taisir fi al-Muddwat w-al-Tadbir (Book of Simplification on Therapeutics and Diet), written at the request of ibn Rushd, is the most important of them all. It deals elaborately with pathology and therapeutics and at the end gives a comprehensive collection of recipes. In this work ibn Zuhr makes acute clinical observations about mediastinal tumours, intestinal phthisis, pericarditis, scabies, pharyngeal paralysis, and inflammation of the middle ear.

2. Kitab al-Aqhdhiyah (Book on Eatables).

3. Kitab al-Iqtisad dealing with therapeutics, psychotherapy, and hygiene.

Ibn Zuhr is said to be the first physician to have described the itch-mite. He advocated artificial feeding through the gullet and rectum.

Ibn Zuhr's son abu Bakr Muhammad ibn al-Malik was a successful physician and his daughter and the daughter of that daughter were capable midwives. Medicine went into the family down to six generations. Ibn Zuhr's influence through Hebrew and Latin translations upon Western medicine lasted till the end of the eleventh/seventeenth century. The translations of Taisir like ibn Rushd's Kulliyat saw several editions.

The great Spanish philosopher ibn Rushd (Averroes) was a contemporary of ibn Zuhr. His greatness as a physician was eclipsed only by his greatness as a philosopher. His most important medical work Kitab al-Kulliydt fi al-Tibb (Latin Colliget) was a veritable encyclopedia of medicine. As mentioned above, the Latin translation of this work went through several editions in Europe. It was also translated twice in Hebrew. It had seven parts (books) dealing with anatomy, physiology, pathology, diagnostics, materia medica, hygiene, and therapeutics. He was the first to discover that no person can get smallpox more than once. He is also said to be the first to understand the working of the retina.

Ibn Tufail, ibn Rushd's predecessor in philosophy, was also a renowned physician; he wrote two books on medicine, neither of which is extant.

Another name worth mentioning in connection with the development of medicine in the Muslim West is that of ibn Baitar. He was born in Malaga and travelled all over Spain, North Africa, Egypt, Syria, and Asia Minor. He was a botanist rather than a pharmacologist. Most of his work was done in Egypt where he was appointed chief inspector of pharmacies. His two chief works, al-Mughni fi al-Adwiyah al-Mufradah and al-Jami' li Mufradat al-Adwiyah w-al-Aqhdiyah, embodied all the Greek and Arabic literature on botany and materia medica as well as the author's own wide experience and research. He describes more than one thousand and four hundred drugs from the vegetable, animal, and mineral kingdoms, three hundred of which are novelties. The book is arranged alphabetically. Usaibi`ah[39] describes the thoroughness of his teacher's methods; Usaibi`ah was not only al-Baitar's pupil but also herborized with him in Syria. His book al-Adwiyah al-Mufradah was translated into Latin, Simplicibus,

printed in twenty-six editions during and after the ninth/fifteenth century, and was used in the formation of the first London pharmacopoeia issued by the College of Physicians during the reign of James I. Some parts of its Latin version were printed as late as 1172/1758 at Cremona.[40]

`Ala' al-Din abu al-Hasan `Ali ibn abi al-Hazm, better known as ibn alNafis, flourished during the first half of the seventh/thirteenth century. Born in Damascus, he spent most of his life in Cairo where he practised medicine and became dean of the Mansuri hospital. He wrote several books, the most important being al-Mu'jiz and Sharh Tashrih al-Qanun. In describing the anatomy of the pulmonary vessels, ibn Nafis also described for the first time the pulmonary circulation and declared three centuries before Servetus that blood is aerated in the lungs. In his description of the anatomy of the heart he gives the nearest description in those times of the coronary circulation. He says that ibn Sinn's statement that the blood which is in the right side of the heart is to nourish the heart is not true at all, because the nourishment of the heart is from the blood that goes into the vessels that permeate the body of the heart.[41]

In this' section we have briefly touched upon the works of the great authors who have contributed so largely to the development of the various branches of the medical science. There are a host of others who played an equally important role. They live in history. We have also been unable to deal with the veterinary science, especially hippology, of which the Arabs were so fond and in which they displayed so great a mastery.

Arab biblio-biographers, like al-Qifti, ibn abi Usaibi`ah, and ibn Khallikan, have done a magnificent job in collecting the works of various authors, but it is a fact that scores and scores of manuscripts are still lying unexplored in libraries and mosques, palaces and museums and are awaiting careful examination; these may open fresh sluice-gates of knowledge regarding Muslim contribution to medical and other sciences. The need for more texts and more translations, more especially of those works which were composed after the Mongol hordes broke in upon Persia and Baghdad, is vey great indeed for the present renaissance of the Muslim world. The task is not easy; in fact, it is superhuman.

E - Influence

Muslim physicians, more particularly some of those who lived in Spain, contributed largely to the Renaissance in Europe. But in the matter of Muslim influence upon European medicine no names are greater than those of al-Razi and ibn Sina. Within a century and a half of the death of ibn Sina his works reached Spain and Sicily where they began to be translated. It was from these centres of learning that Arab science spread to the other parts of Europe. The spread of Arab science in the West was mainly due to the fact that the Eastern Caliphs were in constant touch with the rulers of Europe.

Harun al-Rashid sent an ambassador to the Court of the Roman Emperor. It is even said that Charlemagne came to Palestine incognito in order to consult the Arab physicians about his health. The medical scholars of the universities of Western Europe like Montpellier and Bologna particularly

specialized in Arab learning and were responsible for the propagation of the teachings of al-Razi and ibn Sina. Montpellier had an immense library.

All the translations made by Constantine the African and Gerard of Cremona were housed in this library at a time when the Paris University library hardly contained more than a score of medical works. From these centres the teachings of the Arabs spread to all medical schools in Europe. From the sixth/twelfth to the eleventh/seventeenth century al-Razi and ibn Sina were considered superior even to Hippocrates and Galen.[42]

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