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# A R A B S

AND THEIR INTELLECTUAL PROGRESS

*BY*

M. MAHMOOD KHAN

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## PREFACE

The history of the civilization, learning and splendour of the Arabs is but little known. Their own descendants and co-religionists are shamefully ignorant of it. Europe and America, owing to national pride, have contrived to put out of sight their scientific obligations to them. The clergy, through religious rancour, try to hide their wonderful achievements in art, science, and letters. As an instance of this I may here mention that the Rev. St. Clair Tysdall, in a lecture lately delivered in the Poona Methodist Hall, restricted the Arab civilization to the preservation of the Greek learning. This limitation renders him liable to the charge of injustice to the Arabs, for though expressing a truth, it is not the whole truth. Such being the case, I have published the following pages, with a view to reverence the memory of the noble Arabs and make their intellectual progress more widely known. The subject-matter is mainly taken from the valuable and instructive works of Mr. J. W. Draper. I have transcribed him paragraph by paragraph, that I may not spoil what was so well done by affecting to make it my own. He deserves the highest esteem of every Muslim, and lover of truth, for his candid acknowledgment of the services rendered by the Mohammadans to the cause of learning and humanity, and the able and masterly manner in which he has described them:

MAHMOOD KHAN.

He also charged the Arabs with burning the Alexandrian library, but the accusation is wholly unfounded as is amply proved by the following facts :—

(1) It is well known that the library of the Ptolemies was burnt during a military operation of Julius Ciesar. (2) St. Croix who published his learned researches upon the libraries of Alexandria has pronounced it to be a mere fable. (3) Abulfaraj, from whose "dynasties" the relation of the burning is taken, lived 600 years after the alleged event whilst historians of a much earlier date are perfectly silent on the subject. (4) Gibbon has thrown doubt upon the story, on account of its own improbability, and the absence of contemporary authority for it ; and has said that, even "if the ponderous mass of Ariar and Monophysite controversy were indeed consumed in the public baths, a philosopher may allow, with a smile, that it was ultimately devoted to the benefit of mankind. (5) It would have been a violation of the Islamic law which enjoins that the religious books of the Jews and the Christians should not be destroyed.

But supposing it was delivered to the flames, how can this be made a charge by which they evince no indignation at the burning, by Cardinal Ximenes, of all the Arab works on history, medicine, and agriculture, on the ground that they were Alkorans ?

## ARABS AND THEIR INTELLECTUAL PROGRESS.

' Scarcely had the Arabs settled in Spain when they commenced a brilliant career adopting what had now become the established policy of the Commanders of the Faithful in Asia, the Emirs of Cordova distinguished themselves as Matrons of learning, and set an example of refinement wrongly contrasting with the condition of the Native European princes. Cordova, under their administration, at its highest point of prosperity, boasted of more than a kindred thousand houses, and more than a million inhabitants. After sunset, a man may walk through it in a straight line for ten miles by the light of the public lamps, Seven hundred years after this there was not so much as *me* public lamp in London. In Paris, centuries subsequently, whoever stepped over his threshold on a rainy day stepped up to the ankles in mud. Other cities, as Granada, Seville, Toledo, considered themselves rivals of Cordova. The palaces of the khalifa were magnificently decorated. These sovereigns might well look down with supercilious contempt on the dwellings of the rulers of Germany, France, and England, which were scarcely better than stables—chimneyless, windowless, and with a hole in the roof for the smoke to escape like the wigwams of certain Indians. The Spanish Mohammadans had brought with them all the luxuries and prodigalities of Asia. Their residences stood forth against the clear blue sky or were embosomed in woods. They had polished marble balconies, overhanging orange-gardens; courts with cascades of water; shady retreats provocative of plumer in the heat of the day; retiring-rooms vaulted with stained glass, speckled with gold, over which streams of water were made to gush; the floors and walls were of exquisite mosaic. Here a fountain of quicksilver shot up in a glistening spray, the glittering particles falling with a tranquil sound like fairy bells: there, apartments into which cool air was drawn from the flower-gardens, in summer, by means of ventilating towers, and in winter through earthen pipes or ealeducts, imbedded in the walls—the hypocaust, in the vaults below, breathing forth volumes of warm and perfumed air through these hidden passages. The walls were

not covered with wainscot, but adorned with arabesques and paintings of agricultural scenes and views of Paradises. From the ceilings, corniced with fretted gold, great chandeliers hung, one of which, it is said, was so large that it contained 1,805 lamps. Clusters of frail marble columns surprised the beholder with the vast weights they bore, and the boudoirs of the sultans they were sometimes of verd antique, and incrustated with lapis lazuli. The furniture was of sandal and citron wood, inlaid with mother-of-pearl ivory, silver, or relieved with gold and precious malachite. In orderly confusion were arranged vases of rock crystal, Chinese porcelains, and tables of exquisite mosaic. The winter apartments were hung with rich tapestry; the floors were covered with embroidered Persian carpets. Pillows\* and couches of elegant forms, were scattered about the rooms perfumed with frankincense. It was the intention of the Saracen architect, by excluding the view of the external landscape, to concentrate attention on his work; and since the representation of the human form was religiously forbidden and that source of decoration denied, his imagination ran riot with the complicated, arabesques he introduced, and sought every opportunity of replacing the prohibited works of arts by the trophies and rarities of the garden for this reason, the Arabs never produced artists; religion turned them from the beautiful, and made them soldiers, philosophers and men of affairs. Splendid flowers and rare exotics ornamented the courtyards and even the inner chambers. Great care was taken to make due provision for the cleanliness, occupation, and amusement of the inmates. Through pipes of metal, water, both warm and cold, to suit the season of the year, ran into baths of marble, in niches, where the current of the air could be artificially directed, hung dropping alcarrazas. There were whispering-galleries for the amusement of the women; labyrinths and marble play-courts for the children; for the master himself, grand libraries. The khalif Alhakem's was so large that the catalogue alone filled forty volumes. They had also apartments for the transcribing, binding and ornamenting of books. A taste for calligraphy and the possession of splendidly-illuminated manuscripts seems to have anticipated in

the khalifs, both of Asia and Spain, the taste for statuary and paintings among the latter popes of Rome.

Such were the palace and gardens of Zehra, in which Abdurrahman III, honored his favourite sultana. The edifice had 1,200 columns of Greek, Italian, Spanish, and African marble. \* Its hall of audience was incrustated with gold and pearls. Through the long corridors of its seraglio black eunuchs silently glided. The ladies of the harem were the most beautiful that could be found. To that establishment alone 6,300 persons were attached. The bodyguard of the sovereign was composed of 12,000 horsemen, whose cimiers, belts were studded with gold. This was that Abdurrahman who, after a glorious reign of fifty years, sat down to count the number of days of unalloyed happiness he had experienced, and could only enumerate fourteen. " Oh man !" exclaimed the plaintive khalif, " put not thy trust in the present world."

No nation has ever excelled the Spanish Arabs in the beauty and costliness of their pleasure-gardens. To them we owe the introduction of very many of the most valuable cultivated fruits, such as the peach, "Retaining the love of their ancestors for the cooling effect of water in a hot climate they spared no pains in the superfluity of fountains, hydraulic works, and artificial lakes in which fish was raised for the table. Into such a lake, attached to the palace of Cordova, many loaves were cast each day to feed the fish. There were also menageries of foreign animals; aviaries of rare birds; manufactories in which skilled workmen, obtained from foreign countries, displayed their art in textures of silk; cotton, linen, and all the miracles of the loom; in jewellery and filigree-work, with which they ministered to the female pride of the sultanas. Under the shade of cypresses cascades disappeared; among flowering shrubs there were winding walks, bowers of roses, seats cut out of the rock, and crypt-like grottoes hewn in the living stone. Nowhere was ornamental gardening better understood; for not only did the artist try to please the eye as it wandered over the pleasant gradation of color and form—he also boasted his success in the gratification of the sense of smell by the studied succession of perfumes from the beds of flowers.

To these Saracens we are indebted for many of our personal comforts. Religiously clean, it was not possible for them to clothe themselves according to the fashion of the natives of Europe, in a garment unchanged till it dropped to pieces of itself, a loathsome mass of vermin, stench, and rags. No Arab who had been a minister of state or the associate or antagonist of a sovereign, would have offered such a spectacle as the corpse of Thomas Becket when his hair-cloth shirt was removed. They taught us the use of the often-changed and often-washed under-garment of linen or cotton, which still passes among ladies under its old Arabic name. But to cleanliness they were not unwilling to add ornament. Especially among women of the higher classes, was the love of finery a passion. Their outer garments were often of silk embroidered and decorated with gems and woven gold. So fond were Morrish women of gay colors and the lustre of chrysolites, hayacinths, emeralds, and sapphires, that it was quaintly said that the interior of any public building in which they were permitted to appear looked like a flower-meadow in the spring besprinkled with rain.

In the midst of this luxury which cannot be regarded by the historian with disdain, since in the end it produced a most important result in the south of Prance, the Spanish khalifs, emulating the example of their Asiatic compeers, and in this strongly contrasting with the popes of Home, were not only the patrons, but the personal cultivators of all the branches of human learning. One of them was himself the author of a work on polite literature in not less than fifty volumes; another wrote a treatise on algebra. When Zaryab the musician came from the East to Spain, the khalif Abdurrahman rode forth to meet him in honor. The college of music in Cordova was sustained by ample government patronage, and produced many illustrious professors.

The Arabs never translated into their own tongue the great Greek poets, though they sedulously collected and translated the Greek philosophers. Their religious sentiments and sedate character caused them to abominate the lewdness of our classical mythology, and to denounce indignantly any connexion between the licentious, impure Olympian Jove and the Most High God as an insufferable

and unpardonable blasphemy. Harun Alrashid had gratified his curiosity by causing Homer to be translated into Syriac, but he did not venture on rendering the great epics into Arabic. Notwithstanding this aversion to our graceful but not unobjectionable ancient poetry, among them originated the Tensons, or poetic disputation, carried afterward to perfection among the Troubadours, from them also, the Provençals, learned to employ jongleurs. Across the Pyrenees, literary, philosophical, and military adventures were perpetually passing; and thus the luxury, the taste, and above all, the chivalrous gallantry and elegant courtesies of Moorish society found their way from Granada and Cordova to Provence and Languedoc. The French and German, and English nobles imbibed the Arab admiration of the horse; they learned to pride themselves on skilful riding. Hunting and falconry became their fashionable pastimes; they tried to emulate that Arab skill which had produced the celebrated breed of Andalusian horses. It was a scene of a grandeur and gallantry; the pastimes were tilts and tournaments. The refined society of Cordova prided itself in its politeness. City and country were full of conviviality, and of dancing to the lute and mandolin. Instead of the drunken and gluttonous wassail orgies of their Northern neighbours, the feasts of the Saracens were marked by sobriety. Wine was prohibited. The enchanting moonlight evenings of Andalusia were spent by the Moors in sequestered, fairy-like gardens or in orange-groves, listening to the romances of the storyteller, or engaged in philosophical discourse; consoling themselves for the disappointments of this life by such reflections as that, if virtue were rewarded in this world, we should be without expectations in the life to come; and reconciling themselves to their daily toil by the expectation that rest will be found after death—a rest never to be succeeded by labour.

Even as early as the tenth century, persons having a taste for learning and for elegant amenities found their way into Spain from all the adjoining countries; a practice in subsequent years still more indulged in, when it became illustrated by the brilliant success of Gerbert.

The khalifs of the West carried out the precepts of Ali,

the fourth successor of Mohammad, in the patronage of literature. They established libraries in all their chief towns; it is said that not fewer than seventy were in existence. To every mosque was attached a public school, in which the children of the poor were taught to read and write, and instructed in the precepts of the Koran. For those in easier circumstances there were academies, usually arranged in twenty-five or thirty apartments, each calculated for accommodating four students; the academy being presided over by a rector. In Cordova, Granada, and other great cities, there were universities frequently under the superintendence of Jews; the Mohammadan maxim being that the real learning of a man is of more public importance than any particular religious opinions he may entertain. In this they followed the example of the Asiatic Khalif, Harun Alrashid, who actually conferred the superintendence of his school on John Masue, a Nestorian Christian. The Mohammadan liberality was in striking contrast with the intolerance of Europe. Indeed, it may be doubted whether at this time any European nation is sufficiently advanced to follow such an example. In the universities some of the professors of polite literature gave lectures on Arabic classical works; others taught rhetoric or composition, or mathematics, or astronomy. From these institutions many of the practices observed in our colleges are derived. They held Commencements, at which poems were read and orations delivered in presence of the public. They had also, in addition to these schools of general learning, professional ones, particularly for medicine.

With a pride perhaps not altogether inexcusable, the Arabians boasted of their language as being the most perfect spoken by man. Mohammad himself, when challenged to produce a miracle in proof of the authenticity of his mission, uniformly pointed to the composition of the Koran, its unapproachable excellence vindicating its inspiration. The orthodox Moslems—the Moslems are those who are submissively resigned to the Divine will—are wont to assert that every page of that book is indeed a conspicuous miracle. It is not then surprising that, in the Arabian schools great attention was paid to the study of language, and that so

many grammarians were produced. By these schools, dictionaries, similar to those now in use, were composed; their copiousness is indicated by the circumstance that one of them consisted of sixty volumes, the definition of each word being illustrated or sustained by quotations from authors of acknowledged repute. They had also lexicons of Greek, Latin, Hebrew, and cyclopedias, such as the Historical Dictionary of the Sciences of Mohammad Ibn Abdullah, of Granada. In their highest civilization and luxury they did not forget the amusements of their forefathers—listening to the tale-teller, who never failed to obtain audience in the midst of Arab tents. Around the evening fires in Spain the wandering literati exercised their wonderful powers of oriental invention, edifying the eager listeners by such narrations as those that have descended to us in the Arabian Nights' Entertainments. The more sober and higher efforts of the educated were, of course, directed to pulpit eloquence, in conformity with the example of all the great oriental khalifs, and sanctified by the practice of the Prophet himself.

Passionate lovers of poetry and music, they dedicated much of their leisure time to those elegant pursuits. They taught Europe the game of chess; they gave it its taste for works of fiction—romances and novels. In the graver domains of literature they took delight: they had many admirable compositions on such subjects as instability of human greatness; the consequences of irreligion, the reverses of fortune; the origin, duration, and end of the world. They were the authors and introducers of rhyme; and such was the luxuriance of rhyme and abundance of their language, that in some of their longest poems, the same rhyme is said to have been used alternately from the beginning to the end. Even among the Spanish women, there were not a few who, like Velada, Ayesha, Labana, Algasania, achieved reputation in these compositions; and some of them were daughters of khalifs. And this is the more interesting to us, since it was from the Provencal poetry, the direct descendant of these efforts, that European literature arose. Sonnets and romances at last displaced the grimly-orthodox productions of the wearisome and ignorant fathers of the Church.

If fiction was prized among the Spanish Arabs, history

was not held in less esteem. Every khalif had his own historian. The instincts of the race are perpetually peeping out; and not only were there historians of the Commanders of the Faithful, but also of celebrated horses and illustrious camels. In connexion with history, statistics were cultivated, this having been, it may be said, a necessary study, from the JSrst enforced on the Saracen officers in their assessment of tribute on conquered misbelievers, and subsequently continued as an object of taste. It was, doubtless, a similar necessity, arising from their position, that stamped such a remarkably practical aspect on the science of the Arabs generally. Many of their learned men were travellers and voyagers, constantly moving about for the acquisition or diffusion of knowledge, their acquirements being a passport to them wherever they went, and a sufficient introduction to any of the African or Asiatic courts. They were thus constantly brought in contact with men of affairs, soldiers of fortune, satesmen, and became imbued with much of their practical spirit, and hence the singulary romantic character which the biographies of many of these men display, wonderful turns of prosperity, violent deaths. The scope of their literary labours offers a subject well worthy of meditation; it contrasts with the contemporary ignorance of Europe. Some wrote on chronology; some on numismatics; some, now that military eloquence had become objectless, wrote on pulpit oratory; some on agriculture and its allied branches as the art of irrigation. Not one of the purely mathematical, mixed, or practical sciences was omitted. Out of a list too long for detailed quotation, I may recall a few names. Assamh, who wrote on topography and statistics, a brave soldier, who was killed in the invasion of Erance, A. D. 720; Avicenna, the great physician and philosopher, who died A. D. 1037; Averrces, of Cordova, the chief commentator on Aristotle A. D. 1198. It was his intention to unite the doctrines of Aristotle with those of the Koran. To him is imputed the discovery of spots on the sun. He died at Morocco. Abu Othman wrote on zoology, Alberuni, on gems—he had travelled to India to procure information; Rhazes, Al Abbas, and Al Beither, on botany—the latter had been in all parts of the world for the purpose of obtaining specimens. Ebn Zoar, better known as Avenzor, may be

looked upon as the authority in Moorish pharmacy. Pharmacopias were published by the schools, improvements on the old ones of the Nestorians; to them may be traced the introduction of many Arabic words, such as syrup, julep, elixir, still used among apothecaries. A competent scholar might furnish not only an interesting, but valuable book, founded on the remaining relics of the Aral) vocabulary ; for, in whatever direction we may look, we meet, in the various pursuits of peace and war, of letters and science, Saracenic vestiges. Our dictionaries tell us that such is the origin of admiral, alchemy, alcohol, algebra, chemise, cotton, and hundreds of such words. The Saracens commenced the application of chemistry, both to the theory and practice of medicine in the explanation of the functions of the human body and in the cure of its diseases. Nor was their surgery behind their medicine. Albucasis of Cordova, shrinks not from the performance of the most formidable operations in his own and in the obstetrical art; the actual cautery and the knife are used without hesitation. He has left us an ample description of the surgical instruments then employed ; and from him we learn that, in operations of females in which considerations of delicacy intervened, the services of properly instructed women were secured.\* How different was all this from the state of things *in* Europe ; the Christian peasant, fever-stricken or overtaken by accident, hied to the nearest saint-shrine and expected a miracle; the Spanish Moor relied on the prescription or lancet of his physician, or the bandage and knife of his surgeon.

In mathematics the Arabians acknowledged their indebtedness to two sources, Greek and Indian, but they greatly improved upon both. The Asiatic khalifs had made exertions to procure translations of Euclid, Apollonius, Archimedes, and other Greek geometers. Almamoon, in a letter to the Emperor Theophilus, expressed his desire to visit Constantinople if his public duties would have permitted. He re-

\* Hospitals were established for the lepers, the poor, the blind, the insane, and the sick. Students in the medical colleges had to pass a rigid examination, before they received authority *to* enter upon, the practice of their profession. There were 860 physicians in Bagdad. In Spain the life of the Catholic princes was intrusted to the skill of the Saracens.

quests of him to allow Leo the mathematician to come to Bagdad to impart to him a portion of his learning, pledging his word that he would restore him quickly and safely again. "Do not," says the high-minded khalif, "let diversity of religion or of country cause you to refuse my request. Do what friendship would concede to a friend. In return, I offer you a hundred weight of gold, a perpetual alliance and peace. True to the instincts of his race and the traditions of his city, the Byzantine sourly and insolently refused the request, saying that "the learning which had illustated the Roman name should never be imparted to a barbarian."

From the Hindus the Arabs learned arithmetic, especially that valuable invention termed by us the Arabic numerals, but honorably ascribed by them to its proper source under the designation of Indian numerals." This admirable notation by nine digits and cipher occasioned a complete revolution in arithmetical computations. As in the case of so many other things, the Arab impress is upon it; our word cipher, and its derivations, ciphering, etc., recall the Arab word ciphra, the name for the 0, and meaning that Avhieh is blank or void. •Mohammad b. Musa, said to be the earliest of the Saracen authors on algebra, and who made the great improvement of substituting sines for chords in trigonometry, wrote also on this Indian system. Ibn-junis, A.D. 1008, used it in his astronomical work. From Spain it passed into Italy, its singular advantage causing it to be eagerly adopted in the great trading cities. We still use the »word algorithm in reference to calculations. The study of algebra was intently cultivated among the Arabs, who gave the name it bears. Ben Musa, just referred to, furnished the solution of quadratic equations. Omar b. Ibrahim that of cubic equations. Musa, above mentioned was the author of a "Treatise on Spherical Trigonometry." Al-Baghdadi eft one on land-surveying, so excellent, that by some it has been declared to be a copy of Euclid's lost work on the subject. The treatise of Albategnins on "The Science of the Stars" is spoken of by Laplace with respect; he also draws attention to an important fragment of Ibn-junis, the astronomer of Hakem, the khalif of Egypt, A. D. 1000, as containing a ong series of observations from the time of Almansur, of

eclipses, equinoxes, solstices, conjunctions of planets, osculations of stars—observations which have cast much light on the great variations of the system of the world. The Arabian astronomers also devoted themselves to the construction and perfection of astronomical instruments, to the measurement of time by clocks of various kinds, by clepsydras and sun-dials. In the application of mathematics to astronomy and physics they had been long distinguished. Almamun had determined with considerable accuracy the obliquity of the ecliptic. He had also ascertained the size of the earth from the measurement of a degree on the shore of the Red Sea—an operation implying true ideas of its form, and in singular contrast with the doctrine of Constantinople and Rome. While the latter was asserting, in all its absurdity, the flatness of the earth, the Arabs were teaching geography in their common schools from globes. In Africa there was still preserved, in the library at Cairo, one of brass, reputed to have belonged to the great astronomer Ptolemy. Al Idrise made one of silver for Roger II., of Sicily; and Gerbert used one which he had brought from Cordova in the school he had established at Ilheims. Among problems of interest that were solved may be mentioned the determination of the length of the year by Albtegnius and Thebit b. Corrah; and increased accuracy was given to the correction of astronomical observations by Alhazen's great discovery of atmospheric refraction. Among the astronomers, some composed tables; some wrote on the measure of time; some on the improvement of clocks, for which purpose they were the first to apply the pendulum; some on instruments, as the astrolabe. The introduction of astronomy into Christian Europe has been attributed to the translation of works of Mohammad Eargani. In Europe, also the Arabs were the first to build observatories: the Giralda, or tower of Seville was erected under the superintendence of Geber, the mathematician, A. D. 1196, for that purpose. Its fate was not a little characteristic. After the expulsion of the Moors it was turned into a belfry, the Spaniards not knowing what else to do with it.

I have to deplore the systematic manner in which the literature of Europe\* has contrived to put out of sight our

\*—The whole world is deeply indebted to the—Musalmans; Europe and America for the light of science, Asia and Africa for daily guidance.

scientific obligations to the Mohammadans. Surely they cannot be much longer hidden. Injustice founded on religious rancour and national conceit cannot be perpetuated for ever. What should the modern astronomer say, when remembering the<sup>1</sup> contemporary barbarism of Europe, he finds the Arab Abul Hasan speaking of tubes, to the extremities of which ocular and object diopters, perhaps sights were attached, as used at Meragha? What when he reads of the attempts of Abdurrahman Sufi at improving the photometry of the stars? Are the astronomical tables of Ibn-junia (A. D. 1008), called the Hakemite tables, or the Ilkanic tables of Nassereddin Tasi, constructed at the great observatory just mentioned, Meragha, near Tauris, A. D. 1252, or the measurements of time by pendulum oscillations, and the methods of correcting astronomical tables by systematic observations—are such things worthless indications of the mental state? The Arab has left his intellectual impress on Europe, as, before long, Christendom will have to confess; he has idelibly written it on the heavens, as any one may see who reads the stars on a common celestial globe.

Our obligations to Spanish Moors in the arts of life are even more marked than in the higher branches of science, perhaps only because our ancestors were better prepared to take advantage of things connected with daily affairs. They set an example of skilful agriculture, the practice of which was regulated by a code of laws. Not only did they attend to the cultivation of plants, introducing very many new ones, they likewise paid great attention to the breeding of cattle, specially the sheep and horse. To them we owe the introduction of the great products, rice, sugar, cotton and also as we have previously observed nearly all the fine garden and orchard fruits, together with many less important plants, such as spinach and saffron. To them Spain owes the cultivation of silk; they gave to Xeres and Malaga their celebrity for wine. They introduced the Egyptian system of irrigation by flood-gates, wheels, and pumps. They also promoted many important branches of industry; improved the manufacture of textile fabrics, earthenware, iron, steel; the Toledo sword-blades were prized every where for their temper. The Arabs on their expulsion from Spain, carried

the manufacture of a kind of leather, in which they were acknowledged to excel, to Morocco, from which country the leather itself has now taken its name. They also introduced inventions of a more ominous kind—gun-powder and artillery. The cannon they used appeared to have been made of wrought iron. But perhaps they more than compensated for these evil contrivances by the introduction of the mariner's compass.

The mention of the mariner's compass might lead us correctly to infer that the Spanish Arabs were interested in commercial pursuits, a conclusion to which we should also come when we consider the revenues of some of their khalifs. That of Abdurrahman is stated at five and a half million sterling—a vast sum if considered by its modern equivalent, and for more than could possibly be raised by taxes on the produce of the soil. It probably exceeded the entire revenue of all the sovereigns of Christendom taken together. From Barcelona and other ports an immense trade with the Levant was maintained. In the days of their prosperity they maintained a merchant marine of more than a thousand ships. They had factories and consuls on the Tanais. With Constantinople alone they maintained a great trade; it ramified from the Black Sea and East Mediterranean into the interior of Asia; it reached the ports of India and China, and extended along the African coast as far as Madagascar. Even, in these commercial affairs the singular genius of the Arab shines forth. In the midst of the tenth century, when Europe was in the same condition that Caffraria is now, enlightened Moors, like Abdul Cassim, were writing treatises on the principles of trade and commerce. As on so many other occasions, on these affairs have left their traces. The smallest weight they used in trade was the grain of barley, flour of which were equal to one sweet pea, called in Arabic carat. We still use the grain as our unit of weight, and still speak of gold being so many carats fine.

Among the Saracen names that might be mentioned as cultivators of alchemy, we may recall Al-Razi, Ebin Durr, Djafar or Geber, Toghatago, who wrote an alchemical poem, and Dschildegi, one of whose works bears the significant title of "The Lantern. The definition of alchemy by some of

these authors is very striking; the science of the balance, the science of weight, the science of combustion.

To one of these chemists, Djafar, our attention may for a moment be drawn. He lived toward the end of the eighth century, and is honored by Rhases, Avicenna, and Kafid, the great Arabic physicians, as their master. His name is memorable in chemistry, \* since it marks an epoch in that science of equal importance to that of Priestly and Lavoisier\*. He is the first to describe nitric acid and aqua regia\*. Before him no stronger acid was known than concentrated vinegar. We cannot conceive of chemistry as not possessing acids. Roger Bacon speaks of him as the magister magistrorum. He has perfectly just notions of the nature of spirits or gases, as we call them; thus he says: "O son of the doctrine, when spirits fix themselves in bodies, they lose their form; in their nature they are no longer what they were. When you compel them to be disengaged again, this is what happens either the spirit alone escapes with the air, and the body remains fixed in the alembic, or the spirit and body escape together at the same time.\*" His doctrine respecting the nature of the metals, though erroneous, was not without a scientific value. A metal he considers to be a compound of sulphur, mercury, and arsenic, and hence he infers that transmutation is possible by varying the proportion of these ingredients. He knows that a metal, when calcined, increases in weight, discovery of the greatest importance, as eventually brought to bear in the destruction of doctrine of Phlogiston of Stahl, and which has been imputed to Europeans of a much later time. He describes the operations of distillation, sublimation, filtration, various chemical apparatus, water-baths, sand-bath, cupels of bone-earth, of the use of which he gives a singularly clear description. A chemist reads with interest Djafar's antique method of obtaining nitric acid by distilling in a retort Cyprus vitriol, alum, and saltpetre. He sets forth its corrosive power and shows how it may be

\* Chemistry owes its origin and improvement to the industry of the Saisians. They first invented and named the alembic for the purposes of distillation, analyzed the substances of the three kingdoms of nature, tried the distinctions, and affinities of alkalis and acids, converted the poisonous, minerals into soft and salubrious medicines.

made to dissolve gold itself, by adding a portion of salammoniac.

Djafar may thus be considered as having solved the grand alchemical problem of obtaining gold in a potable state. Of course, many trials must have been made on the influence of this solution on the animal system, respecting which such extravagant anticipations had been entertained. The disappointment that ensued was doubtless the reason that the records of these trials have not descended to us.

With Djafar may be mentioned Rhazes, born A.D. 860, physician-in-chief to the great hospital at Bagdad. To him is due the first description of the preparation and properties of sulphuric acid. He obtained it, as the Nordhausen variety is still made, by the distillation of dried green vitriol. To him are also due to the first indications of the preparation of absolute alcohol, by distilling spirit of wine from quick-lime. As a curious discovery made by the Saracens may be mentioned the experiment of Achilid Bechil, who, by distilling the extract of wine, clay, lime, and powdered charcoal, obtained an artificial carbuncle, which shone in the dark "like a good moon." This was phosphorous.

And now there arose among Arabian physicians a correctness of thought and breadth of view altogether surprising. It might almost be supposed that the following lines were written by one of our own contemporaries, they are, however, extracted from a chapter of Avicenna on the origin of mountains. This author was born in the tenth century. "Mountains may be due to two different causes. Either they are the effects of upheavals of the crust of the earth, such as might occur during a violent earthquake, or they are the effect of water, which cutting for itself a new route, has denuded the valleys, the strata being of different kinds, some soft, some hard. The winds and waters disintegrate the one, but leave the other intact. Most of the eminences of the earth have had this latter origin. It would require a long period of time for all such changes to be accomplished, during which the mountains themselves might be somewhat diminished in size, but that water has been the main cause of these effects is proved by the existence of fossil remains of aquatic and UNIVERSITY LIBRARY ountains,"

Avicenna also explains the nature of petrifying or incrusting waters, and mentions aerolites, out of one of which a sword-blade was made, he adds that the metal was too far brittle to be of any use. A mere catalogue of some of the works of Avicenna will indicate the condition of Arabian attainments, 1. On the Utility and Advantage of Science; 2. Of Health and Remedies; 3. Canons of Physic; 4. On Astronomical Observations; 5. Mathematical Theorems; 6. On the Arabic Language and its Properties; 7. On the Origin of the Soul and Ilresurrection of the Body; 8. Demonstration of Collateral Lines on the Sphere; 9. An Abridgment of Euclid; 10. On Finity and Infinity; 11. On Physic and Metaphysics; 12. An Encyclopedia of Human Knowledge, in 20 volumes, etc., etc. The perusal of such a catalogue is sufficient to excite profound attention when we remember the contemporaneous state of Europe.

As an architect may judge of the skill of the ancient Egyptians in his art from study of the Pyramids, so from these relics of Saracenic learning we may demonstrate the intellectual state of Mohammadan people, though much of their work has been lost and more has been purposely destroyed.

Among such writers is Alhazen; his date was about A.D. 1100. Through his optical works, which have been translated into Latin, he is best known to Europe. He was the first to correct the Greek misconception as to the nature of vision, showing that the rays of light come from external objects to the eye, and do not issue from the eye, and impinge on external thing, as, up to this time had been supposed. His explanation does not depend upon mere hypothesis or supposition, but is plainly based upon anatomical investigation as well as on geometrical discussion. He determines that the retina is the seat of the vision, and that impressions made by light upon it are conveyed along the optic nerve to the brain. Though it might not be convenient, at the time when Alhazen lived, to make such an acknowledgment, no one could come to these conclusions, nor, indeed know anything about these facts, unless he had been engaged in the forbidden practice of dissection. With felicity he explains that we seeingle one when we use both eyes, because of the formation

of the visual images on symmetrical portions of the two retinas; To the modern physiologist the mere mention of such things is as significant as the occurrence of an arch in the interior of the pyramid is to the architect. But Alhazen shows that our sense of sight is by no means a trustworthy guide, and that there are illusions arising from the course which the rays of light may take when they suffer refraction or reflexion. It is in the discussion of one of these physical problems that his scientific genius truly shines forth. He is perfectly aware that the atmosphere decreases in density with increase of height; and from that consideration he shows that a ray of light, entering it obliquely, follows a curvilinear path which is concave toward the earth; and that since the mind refers the position of an object to the direction in which the ray of light from it enters the eye, the result must be an illusion as respects the starry bodies; they appear to us, to use the Arabic term, nearer to the zenith than they actually are, and not in their true place. We see them in the direction of the tangent to the curve of refraction as it reaches the eye. Hence also he shows that we actually see the stars, and the sun, and the moon before they have risen and after they have set—a wonderful illusion. He shows that in its passage through the air the curvature of a ray increases with the increasing density, and that its path does not depend on vapours that chance to be present, but on the variation of density in the medium. To this refraction he truly refers the shortening, in their vertical diameter, of the horizontal sun and moon; to its variations he imputes the twinkling of the fixed stars. The apparent increase of size of the former bodies when they are in the horizon he refers to a mental deception, arising from the intervening of terrestrial objects. He shows that the effect of refraction is to shorten the duration of night and darkness by prolonging the Visibility of the sun, and considering the reflecting action of the air, he deduces that beautiful explanation of the nature of twilight—the light that we perceive before the rising and after the setting of the sun—which we accept at the present time as true. With extraordinary acuteness, he applies the principles with which he is dealing to the determination of the height of the atmosphere, deciding that its

limit is nearly  $58\frac{1}{2}$  miles. .

All this is Very grand. Shall we compare it with the contemporaneous monk miracles and monkish philosophy of Europe? It would make a profound impression if communicated for the first time to a scientific society in our own age. Nor perhaps does his merit end here. If the Book of the Balance of Wisdom, for a translation of which we are indebted to M. Khanikoff, the Russian consul general at Tabriz, be the production of Alhazen, of which there seems to be internal proof, it offers us evidence of a singular clearness in mechanical conception for which we should scarcely have,\*been prepared, and if it be not his at all events it indisputably shows the scientific acquirements of his age. Ill that book is clearly set forth the connexion between the Weight of the atmosphere and its increasing density. The weight of atmosphere was therefore understood before Torricelli. This author shows that a body will weigh differently in a rare and in a dense atmosphere; that its loss of weight will be greater in proportion as the air is more dense. He considers the force with which plunged bodies will rise through heavier media in which they are immersed, and discusses the submergence of floating bodies, as ships upon the sea. He understands the doctrine of the centre of gravity. He applies it to investigation of balances and steelyards, showing the relations between the centre of gravity and the centre of suspension—when those instruments will set and when they will vibrate. He considers gravity as terrestrial, and fails to perceive that it is universal—that was reserved for Newton. He knows correctly the relation between the velocities, spaces, and times of falling bodies, and has very distinct ideas of capillary attraction. He improves the construction of that old Alexandrian invention, the hydrometer. The determinations of the densities of bodies, as given by Alhazen, approach very closely to our own; in the case of mercury they are even more exact than some of those of the last century. I join, as, doubtless, all natural philosophers will do, in the pious Thayer of Alhazen, that, in the day of judgment, the All-Merciful will take pity on the soul of Abu-Kaihan, because he was the first of the race of men to construct a table pf

apacific gravities ; and I will ask the same for Alazen himself, since he was the first to trace the curvilinear path of a ray of light through the air. Though more than seven centuries part him from our times, the physiologists of this age may accept him as their compeer, since he received and defended the doctrine now forcing its way, of the progressive development of animal forms. He upheld the affirmation of those who said that man, in his progress, passes through a definite succession of states ; not, however, " that he was once a bull, and was then changed to an ass, and afterwards into a horse, and after that into an ape, and finally became a man." This he says, is only a misrepresentation by " common people" of what is really meant.

Such were the Khalifs of the West; such their splendour, their luxury, their knowledge ; such some of the obligations we are under to them—obligations which Christian Europe, with singular insincerity, has ever been fain to hide. Considering the enchanting country into which they, ruled, it was not without reason that they caused to be engraven on the public seal. "The servant of the Merciful rests contented in the decrees of God." What more, indeed could Paradise give them ? But, considering also the evil end of all this happiness and pomp, this learning, liberality and wealth, we may well appreciate the solemn truth which these monarchs, in their day of pride and power, grandly wrote in the beautiful "mosaics on their palace walls, an ever-recurring warning to him who owes dominion to the sword. "There is no conqueror but God."

*MORALITY APART FROM RELIGION.*

It is the fashion in some quarters to draw a sharp line of demarcation between Religion and Morality, or to represent the connection between the one and the other as remote and shadowy. No mistake, however, can be greater than this. The connection between Religion and Morality is essential or organic, not accidental or dispensable. If, there is a difference between them, the difference is something like what is said to exist between Science and Art. What is science ? Science is art in theory. What is Art ? Art is science in practice. What is religion ? Religion is Morality in theory. What is Morality ? Morality is Religion in practice. Religion and Morality are, properly speaking, two phases of one and the same thing. But a distinction is, in ordinary parlance, made between them ; and Religion is said to have reference to the relations in which we stand to God, and the duties and responsibilities springing therefrom; while Morality is said to have reference to the relations in which we stand to our neighbours and to ourselves, and the duties and responsibilities springing therefrom. Admitting this distinction, which is after all a distinction without a difference, it is by no means difficult to prove the following four propositions :—

(a). Morality apart from Religion is pre-eminently defective.

(b). When Morality is divorced from Religion it ceases to be Morality, or it becomes *immoral*.

(c). When Morality is dissociated from Religion, it ceases to be, or it perishes.

(*du* Morality separated from Religion, not only unnerves our moral nature, but miserably fails to enable us to realize our lofty destiny.

A Morality apart from Religion is in the first place pre-eminently defective. Its defectiveness or insufficiency is brought into bold relief if we examine and analyze its tendencies in the varied spheres of intellectual culture, mo-

ral development, duty and enjoyment.

1. Such Morality debars us from the grandest of those thoughts by which the human mind is expanded and the human heart is broadened. A great German philosopher used to say : " give me a great thought to live upon." Now, my friends, what can be a greater thought to live upon than God ? In God our nature is in all its entirety and complexity satisfied. The human reason cannot rest satisfied in the region of the phenomenary nature. There is justly said to be " metaphysical *nolens volens*" and every attempt to proscribe metaphysics has resulted in a failure. We are so-constituted, that we are driven by what may be called an intellectual necessity from the region of phenomena into that of the occult forces at work behind them. Nor can human reason rest satisfied in the sphere of second causes. The same intellectual necessity which compels us to lift up the veil of phenomena, leads us through the varied chains of second causes at work in Nature to a recognition of the First Cause; and it is in the bosom of a personal God that the human reason can rest. The intellectual nature of man needs God to feed upon. Nor can the moral nature of man feed contentedly upon anything below God. The regulative portion of our being needs God as its unchangeable law and guiding principle; and its emotional element must have something more permanent and lasting than the fleeting scenes of life to feast upon. God is the highest necessity of our own nature, as well as the highest generalization of science, and God is the postulate of our reason, conscience, will, thought and emotion. I believe that, in taking for granted the existence of a Personal God, that is of such a God as is the complement of our nature in all its complexity and many-sidedness, I have not assumed too much. Now, is it possible for us to think of God in the varied relationships in which he stands to the vast, illimitable universe, without expanding our minds and enlarging our hearts? Can you think of God as the Universal Will, the one Primal source of all power, physical and moral, the Radiating Centre of the endless varieties of forces to which the beauties of the world of mechanism, the glories of the world of organization, and the triumphs of the moral world

are to be traced, without expanding your minds and broadening your hearts? Can you think of God as the Universal Reason, the reason of which the universe is an external expression, the reason stamped not only on beautiful symmetrical crystals, but on rude, unshapen blocks of stone, the reason externalized in the endless varieties of structural development, of forms, and colours, in the animal, vegetable and mineral kingdoms, without expanding your minds and hearts? Nor can you, without a similar effect on your mind and heart, contemplate God as the Universal Heart, pulsating or brimming over with love and sympathy for all orders of animate creatures from the greatest of archangels down to the smallest of those organisms which we cannot see even with the help of our best microscopes—instinct with a mercy which endureth for ever and compassion that knows no bound. Again, think of the glorious attributes of God. The horizon of the divine attributes is a horizon of infinitudes—infinite power, infinite wisdom, infinite holiness, in finite love. Who can mediate on these infinitudes without ensuring mental expansion and emotional development? Dr. Chalmers spent one whole year in meditating on "the magnificence of God" as set forth in the divine administration; and the trains of thought and sentiment to which the meditation gave rise were among the principal educating influences which, conjointly made him a man of uncommon vigour of thought and warmth of feeling. The truths of Religion are infinite truths, and their educating influence is incalculable; and this species of Morality, which cuts us off from their contemplation, tends to dwarf our minds and circumscribe our hearts; and, therefore, is pre-eminently defective.

2. Again, Morality separated from Religion leaves the sublimest elements of our nature uncultivated. The sublimest of human instincts is what philosophers call our longing after the Infinite. A great thinker justly says that God and man attract each other. God is our Father, and His, instinct of paternity draws Him towards us; while our filial insifnet, paralyzed indeed, but not dead, draws us towards Him. We are conscious of a yearning after God, a longing to be in a state of union and communion with Him. We, moreover, hare the instinct of prayer, Man

has justly been called a *praying an* that his instinct of devotion is irresistible, indestructible. Comple in his old age had. to bow to the human instinct of prayer; and he inaugurated a new *cultus*, the worship of the genius of hu\* inanity in the form of a beautiful woman thirty years old, with a lovely baby in her arms. Nay, he went further, and advised his followers to worship their mothers as representing the past, their wives as representing the present, and their daughters as representing the future. His English disciples laughed at him, but their philosophy is unphilosophical, inasmuch as it overlooks or ignores some of the unconquerable, unextinguishable elements of our complex nature, our sense of dependence on a higher power, our longing for the Infinite, our instinct of devotion, our belief that our restless hearts cannot experience abiding peace and joy except in the bosom of our Heavenly Father. And the Morality which leaves these elements uncultivated, cannot but be pronounced defective.

3. Morality, separated from Religion, debars us from the highest duties of life. Human duty is threefold. We have duties towards God, duties towards our neighbours or fellow men, and duties towards our own selves. Our duties towards God spring necessarily from the relations in which we stand to Him. God is a Personality, the Central Personality surrounded by concentric circles, so to speak, of Personalities, each of whom stand in definite relations to Him. We human beings form one of these circles of Personalities, and we stand in definite relations to God. He is our Creator, and as such He has a right to dispose of us as He pleases ; and it is our duty to be resigned to the allotments of His providence, God, again, is our Preserver, ever watchful, over active, ready always to effect the combinations needed to sustain the existence which we derived from Him ; and it is our duty to be grateful to Him for His unceasing care. God, moreover, is our Ruler, and He has placed us under a system of government, according to which virtue is rewarded and vice punished with the certainty of a law of Nature; and it is our duty to be loyal to Him. And, lastly, God is our Heavenly Father, and as such entitled to our filial love and reverence. Our duties then towards God flow from the relations in which we stand to Him, These relations are permanent and

immutable. were Preserver,  
 Ruler and France sur towards Him as such can  
 never cease. Again, we have duties towards our fellow men.  
 The doctrine of the Brotherhood of man is a corollary from the  
 doctrine of the Fatherhood of God. We are units welded into  
 a great whole, and the connection we have with one another  
 is organic, not accidental. As parts of an organism correlated  
 with each other, it is our duty to love one another, serve one  
 another, and ensure the well-being of the whole by advancing  
 the interests of the parts. And, lastly, God has constituted  
 us custodians or guardians of our bodies, minds and spirits :  
 and it is our duty to unfold and properly employ the varied  
 capacities and energies of the inner and outer man. Here is  
 the magnificent circle of the duties of life, duties towards God,  
 duties towards our fellow men and duties towards ourselves  
 Surely the grandest of these duties are those which we owe  
 to God ; but these are the very duties ignored by the scheme  
 of Morality which wrenches itself violently from Religion.

4. Such morality debars us from the sublimest enjoy-  
 ments of life. Life has its legitimate activities and legitimate  
 enjoyments. The duties of life are intimately and inseparably  
 associated with the pleasures of life ; and the higher the  
 duties of life are, the higher are the pleasures ensured by  
 their performance. The highest of the duties of life are those  
 which we owe to God ; and certainly we cannot conscientiously  
 perform these without securing to ourselves the highest plea-  
 sures of life. It is the fashion in some quarters to point to  
 philosophic composure or tranquillity as the highest attain-  
 ment of life. Lord Bolingbroke in exile spoke in stately  
 periods of philosophic tranquillity, a tranquillity which, it is  
 to be feared, he did not experience. Kant's life is said to  
 have been a tissue of philosophic tranquillity ; and Spiftoſa,  
 though persecuted by his co-religionists, certainly did experi-  
 ence a great deal of such tranquillity. But let me assure you  
 yet half an hour's enjoyment with God, when the soul leaves,  
 as it were, its mortal tenement behind it, soars aloft, and  
 reposes in the bosom of its Creator in the fulness of loving  
 trust and confidence, is more precious by far than a life of  
 philosophic composure. The life of an eminently pious man  
 has been justly described as " a monotony of sublimity,"

and in his journals it is repeatedly affirmed that the sublimest enjoyments of life are ensured, not by literature, science and philosophy, but by the holy exercises and activities of practical piety.

5. My second proposition is that when Morality Frenches itself from Religion, it ceases to be moral,—becomes immorality. What is the vital principle of Morality? The answer of both ancient and modern philosophy is— *Justice*. I do not maintain that all the principles of rectitude are reducible to justice, or self-love, or benevolence; and I am not progressive enough to believe that all the principles of Morality are reducible to digestion and indigestion. But I do affirm that justice is the vital principle of Morality; and justice means paying every being his due. Nowhere is the principle of justice so briefly and so clearly set forth as in the well-known words of Christ—"Render therefore unto Caesar the things that are Caesar's, and unto God the things that are God's." To perform the lower duties of life, and leave its higher duties unfulfilled, is to rob God of what is due to Him. Worship, adoration, consecration, and obedience are among the things that are God's, and the system of Morality which proscribes these, or has nothing to do with them, casts aside that principle of justice without which morality becomes immorality. It is immoral not to love, worship and serve God, as it is irreligious not to love man!

Again, Morality separated from Religion not only becomes immoral, but loses its life. Religion and Morality stand and fall together. Where religion flourishes, morality flourishes; and where religion decays, morality decays. The history of the world proves this to demonstration. The age of the Restoration is one of the darkest eras of English history. The court presented a picture of unblush licentiousness, and its profligacy was but too faithfully copied by the Nobility. The morals of the nation were brought down to the lowest ebb, and female chastity became so rare, that a fashionable lady could not be faithful to her matrimonial vows without being reproached and taunted. The literature of the period was so corrupt and corrupting, that moralists of the day are firmly opposed to its reproduction.

Now, what made this era an ova of rampant vice ? A reaction 'against Religion. Religion decayed, and with it Morality decayed also. An experiment was tried in America of cori| ducting a school on principles of Morality apart from Re ligin; hut it ended in an egregious failure; and similar experimenfcs have, I have- been assured by Mr. Allnutt of It. Stephen's College, Delhi, been tried in England with similar results! During the Pirst French Revolution an xperimnt was tried on a gigantic scale of governing a ation without religion. A Commission was appointed by iue National Assembly to deliberate upon the question—; Is there a God ? The Commission, after a mock sitting and 'deliberation, came out with the report—There is no God ! Religion was banished from France, the churches were demolished, and the ministers of the Gospel were hooted evt. But the upshot was a period of anarchy to which the history of the world affords no parallel. Napoleon, when raised to the summit of his wishes, said : — " I f there was no religion, I would create one to govern France !"

(6). Lastly, when Morality is separated from Religion, it miserably fails to -enable us to realize our lofty destiny. It certainly makes us good citizen, good fathers, good brother, good neighbours. We are destined to be good citizens; and so far as it selps us to be such, it enables us to fulfil a portion of our destiny. But we are destined to be something infinitely more than what is involved in our being good fathers, good *brothers*, and good neighbours. We are destined to be, not merely good citizens in this world, but good citizens in heaven, We are destined to be like God, God-like in our thoughts, feelings, desires, and aspirations. We are destined to glorify God, that is, to exhibit God in our life and conversation, to love and serve God, and abide with Him, *here* and hereafter, for ever and ever! This is our glorious destiny; and surely it cannot be realized by us under the guidance of a morality which discards God and religion, or throws God and religion into the background. Morality, apart from Religion cramps our; oughts, circumscribes our feelings, narrows our desires and aspirations, dwarfe the inner debars us from the highest duties and employments of iife, and makes it impossible for us to realize our lofty destiny. Nay, it plunges into spiritual death, inasmuch as it ; separates us from God, the one Supreme Source of Spiritual Life, the Author of every good and perfect gift, the Fountain of all that is noble and ennobling: from Him who alone can give us, not only the perfect law of Righteousness, but the capacity we need for a life of unswerving obedience to its precepts, and perfect conformity to it

## THE COMFOBTER

"In the name of The Most Merciful God." The prophecies which are mentioned in the Bible are sufficient to prove the coming of Prophet Mohammad to those, who consider them sincerely, but not to those who do not study the sacred writings.. It is certain that there are and will be some people who will regard these foretellings in a different light, but their so doing renders mischief to themselves and not to *Islam* in the least. For example the coming of Christ is proved from the Old Testament, but the Jews by not believing in the prophecy about Jesus, and taking a different view of the matter cannot prove the religion of Christ to be false. Therefore we desire that our Christian brethren and others will read these without prejudice; carefully justify the facts stated, and will arrive at a just conclusion.

See John Chap. XVI, 7-14, Jesus Christ says, "O J Nevertheless, I tell you the truth; it is expedient for you that I go away for if I go not away, the comforter will not come unto you; but if I depart, I will send him unto you. And when he is come, he will reprove the world of sin, and of righteousness, and of judgment; of sin, because they believe not on me; of righteousness, because I go to my Father, and ye see me no more; of judgment, because the prince of this world is judged. I have yet many things to say unto you, but ye cannot hear them now. Howbeit when he, the *spirit of truth*, is come, he will guide you into all truth; for he shall not speak of himself; but whatsoever he shall hear, that shall he speak: and he will shew you things to come. He shall glorify me; for he shall receive of mine, and shall shew it unto you."

The news which Jesus Christ has given of the comforter who is to come after him is taken from the Greek Bible. We have therefore the word comforter "Parakalit" and in Arabic we have "farakalit." It is therefore that the Arabic "farakalit," which means *Ahmed, i. e. one who praises or describes more* should have been "farakalit" in Greek and not parakalit meaning comforter. For the Greek Parakalit is more likely to be changed into "farakalit" in Arabic. From this it is proved that this news is about Mohammad, and if any one desires to assure himself of the meaning of the word "Parakalit" he may look for it in a Greek or an English Dictionary. Again some say that the news, which Jesus Christ has given of the comforter refers to verses 3 and 4 of the Acts of the Apostles Chap. II. containing the information, "that there appeared unto them cloven tongues like as fire, and it sat upon each of the disciples, and they were filled with the Holy Ghost and began to speak as the spirit gave them utterance." This is not accepted, for in no place has Christ said that his disciples will have after him cloven tongues like as fire and will be filled with the Holy Ghost. But see John's 1st Epistle. IV., verses 1 to 6, there the expression (*spirit of truth*) means a *prophet*. And Jesus Christ says above that if he will not go, no comforter will come. By this it appears that the one who has not come before Jesus is to come after him. The one who was expected to come, came in the person of Prophet Mohammad. "For the Holy Ghost has come upon many men before." See Luke Chap. III, 22. Jesus Christ was also filled with the Holy Ghost. And in John Chap. XX, 22. Jesus Christ himself filled his disciples with the Holy Ghost. In William Muir's history, page 205, it is written that Muttanis (flock) flourished in 170 A.D., claimed himself for Prophet, and said he himself was the Parakalit which Jesus had promised. Many people believed in him, and in a few days he was not believed. If by Parakalit were meant, the cloven tongues like as fire, then the Christians of the time would not have waited for one and believed in his coming. But falsehood is never tenable. If by the cloven tongue\* like as fire were the comforter which Jesus promised that he would send after him, then the Gospels are written after the cloven tongues got down upon them, and they have not written that the promise given by Jesus is fulfilled. By this it is proved that cloven tongues like as of fire is not the promise given by Jesus. This interpretation therefore, of the Holy Ghost for the comforter whom Jesus wished to send after him cannot be accepted. Again, the Holy Ghost has performed no work which Jesus has said, the comforter would do, for he judged nor any one, not proved any guilty, nor showed any one a way, nor informed people of the new things to come, nor glorified Jesus Christ, nor told what he had heard, nor showed any thing of Jesus Christ. Now, all the things which Jesus said the comforter would do, have been done by Prophet Mohammad. See Koran. He proved guilty, those who did not believe in Jesus Christ, and punished them; verified the going of Jesus Christ unto Heaven, and showed the way to God, and told about the things to come, glorified Jesus Christ, and judged the world of sinfulness and from the place of sunrise to sunset spread his religion. Do justice and consider welt therefore, and believe in Prophet Mohammad, for it will be of no avail to weep and gnash one's teeth in the **Day of Judgment for they shall be hurled into hell, there to endure eternal torments as Jesus, has said, See John, Chap. XII, 48,**

## TO-DAY - ANJP TO-MORROW .

To-day man's dressed in gold and silver bright  
Wrapt in a shroud before to-morrow night ;  
To-day he is feeding on delicious food :  
To-morrow dead unable to do good.  
To-day he's nice and scorns to feed on crumbs :  
To-morrow he's himself a dish for worms ;  
To-day he's honored and vast esteem :  
To-morrow not a beggar values him  
To-day he rises from a velvet bed :  
To-morrow lies in dark grave quiet and dead;  
To-day his house tho' large he thinks but small  
To-morrow no command, no house at all ;  
To-day has forty servants at his gate :  
To-morrow scorn'd, not of them will wait-  
To-day perfumed as sweet as any rose :  
To-morrow 'stinks in every body's nose ;  
To-day he's grand majestic all delight :  
Ghastful and pale before to-morrow night -,  
True as the Scripture says, ' man's life *is*- a span  
*The present* moment *is the* life of man.





