

## CONTRIBUTIONS OF ISLAM TO MODERN CIVILIZATION

If we compare today the Islamic world with Christendom, we find that the former presents a dark and depressing picture of a society sunk in inertia and backwardness, and afflicted with intellectual and material bankruptcy. So dark and so disappointing is the general picture of the contemporary Muslim world that it is extremely difficult for the average westerner to believe that, not many centuries ago, this very world was the centre of culture and enlightenment, and that in those days it was Europe which was the under-developed and benighted area of the globe. Much more difficult for the average westerner to believe may be the notion that it was the Muslims who pulled Europe out of the darkness of its medieval barbarism, released those powerful forces – material as well as ideational – which led to the rebirth of Europe, and played the basic role in the birth of modern civilization. Yet, most people in the West would perhaps contemptuously brush aside such statements as obvious nonsense which need not even be considered seriously.

Such an attitude on the part of Westerners stems from the Western prejudice against Muslims and Islam, a prejudice which has its roots deep in history. But since the verdict of history does not take into consideration religious fanaticism and cultural bigotry, it goes squarely in favour of the conclusions we have briefly stated above.

Even the commonest student of world history knows that the Middle Ages (which are not inaptly designated as Dark Ages in the context of European history), were the ages of Islamic splendour and glory. In those days Muslims were far ahead of Christians in every walk of life and every aspect of their brilliant civilization presented a sharp contrast to the revolting state of affairs in Europe.

Christian Europe was in the iron grip of a fanatical, benighted clergy. We find all the treasures of ancient learning being destroyed in the name of Christ. The Greek and Roman manuscripts were publicly burnt by the priests. The library at Alexandria was destroyed, for learning was a devil's snare. The Western Romans had completely succumbed to barbarism. The Eastern Roman emperors kept their

library and entertained some learned men, but within their palaces. Worldly joys, earthly pleasures, pagan learning, metaphysical discussions, were all abhorred under the influence of the bigoted priestcraft which regarded knowing too much as dangerous.

While this was taking place in Europe, history was witnessing an altogether different spectacle in the area under Muslim rule. In the Muslim world, the treasuries of intellectual culture were accounted for by the rulers of Baghdad, Cairo, Delhi and Cordova as the truest and proudest pomps of their courts. But it was not as a mere appendage of princely vanity that the wonderful growth of Islamic science and learning was fostered by their patronage. Their pursuit of culture was an overmastering craving. Never before (and never since, on such a scale) has there been witnessed the spectacle of the ruling classes throughout the length and breadth of a vast empire given entirely to the frenzied passion for the acquisition of knowledge. Learning seemed to have become with them the chief business of life. Chalifs and Amirs hurried from their *diwans* to close themselves in their libraries and observatories; they neglected their affairs of state to attend lectures and converse on mathematical problems with men of science. Caravans laden with manuscripts and botanical specimens plied from Bokhara to the Tigris, from Egypt to Andalusia. Embassies were sent to Constantinople and to India for the sole purpose of obtaining books and teachers. A collection of Greek authors or distinguished mathematicians were eagerly demanded as the ransom of an empire. To every mosque was attached a school; wazirs vied with their masters in establishing public libraries, endowing colleges, founding bursaries for impecunious students. Men of learning, irrespective of race or religion, took precedence over all others; honours were showered upon them: they were appointed to the government of provinces. A retinue of professors and camel-trains of books accompanied the Khalifs in their journeys and expeditions.

In their educational system the Muslims paid attention to all sciences, religious as well as secular. According to an European writer, it was the glory of Islam that it gave to other sciences the same footing which it gave to the study of the Quran and the Hadith and Figh (that is, Muslim Jurisprudence), a place in the Mosque. Lectures in chemistry and physics, botany, medicine and astronomy were given in the mosque equally with lectures on the Quran and Hadith, for the mosque was the University of Islam in its great days,

and it deserved the name of university, since it welcomed to its precincts all the knowledge of the age from every quarter. The centre of Islamic culture in Europe, Spain, for nearly eight centuries set for all Europe a shining example of a civilized and enlightened state. Arts, literature and science prospered there as they then prospered nowhere in Europe. Students from France, Germany and England flocked in to drink from the fountains of learning which flowed only in the cities of Andalusia.

The general tenor of life in the Islamic world also distinguished itself from its European counterpart by the fact that it was highly progressive and civilized. This contrast can be best gauged from the remarks made by Draper in his excellent work, entitled *The Intellectual Development of Europe*. Turning his narrative to Muslim Spain, he writes:

From the barbarism of the people of Europe, who could scarcely be said to have emerged from the savage state, unclean in person, benighted in mind, inhabiting huts in which it was a mark of wealth if there were bulrushes on the floor and straw mats against the wall: miserably fed on beans, vetches, roots, even the bark of trees: clad in garments of untanned skin, or at the best of leather of perennial durability, but not conducive to purity — a state in which the pomp of royalty was sufficiently and satisfactorily manifested in the equipage of the sovereign, an ox-cart, drawn by not less than two yokes of cattle, quickened in their movements by the goods of pedestrian serfs, whose legs were wrapped in wisps of straws; from a people, devout believers in all the wild fictions of shrine-miracle and preposterous relics; from the degradation of a base theology, and from the disputes of ambitious ecclesiasts, it is pleasant to turn to the southwest corner of the continent, where under auspices of a very different kind, the irradiations of light were to break forth. . .

It is well known that Cordova, the Andalusian metropolis, had at the time reached the zenith of culture and civilization. It had seventy libraries and nine hundred baths and a population of about one million. Its advanced stage of development is well illustrated by the

fact that after sunset a man might walk through Cordova in a straight line for ten miles by the light of public lamps. Seven hundred years after this time there was not so much as one public lamp in London. The streets of Cordova were solidly paved. In Paris, centuries subsequently, whoever stepped over his threshold in a rainy day stepped up to his ankles in mud.

This having the contrast between medieval Islam and Christianity, would it not be proper to infer that it is the westward travel of civilization which forced Europe to liberate itself from its medieval moulds into the birth of modern civilization? As against such a view, one may put forth the view that the Renaissance of Europe, which was the precursor of its modernity, was mainly the outcome of the revival of classical Greek learning and that the role of Muslims was of little importance because of continued hostility between the Cross and the Crescent, which precluded the possibility of Europe's learning much from the Muslims. In other words, Europe drew from its own and not from Islamic resources in building up the impressive civilization which is the pride and boast of the modern man. A more charitable view perhaps, would be to credit Muslims with some share in the Renaissance for the reason that they preserved the classical learning and made it available to Europe when she became ripe enough to benefit from it.

In fact, dispassionate study of history would show that Muslims played a much more important role in building up modern civilization than is generally recognized. The origins of some of the basic features of modern civilization, its scientific advancement, its freedom from the bondage of ecclesiastical authority, its socio-political values like liberty, equality and fraternity, are all traceable to Islamic sources. The misunderstanding that generally hinders the recognition of truth is that many people consider the revival of Greek classics as the basic factor of the Renaissance and regard modern science as the child of Greek science. This, however, is an exaggerated and false notion. It is based on a highly inadequate knowledge of historical development as well as on an erroneous appreciation of the nature of modern science.

Science, in particular, has been defined as "the ordered knowledge of natural phenomena and the relations between them" and is based on observation and experiment. The hypotheses of sciences are formed on the basis of observed facts which, when confirmed

by criticism and experiment, are turned into Law of nature.

The first step towards scientific achievement, as we have seen, was the introduction of observation and experiment. It is this particular aspect which is markedly missing in what is erroneously called Greek 'science'. In fact the Greeks were over-theoretical, and over-abstract. They were primarily asking philosophical questions. Their minds were concerned with an eager generality. They demanded clear, bold ideas, and strict reasoning from them. All that was excellent; it was genius; it was ideal preparatory work. But it was not science as we understand it.

The case of Aristotle who is regarded as the greatest Greek scientist offers a valuable illustration. His merit as a scientist consists merely in the collection and classification of facts in which he is unrivalled. His 'science' was, however, not based on observation and experiment. He never resorted to experiment which alone could justify the conclusions that he arrived at. Aristotle believed, for instance, that men had more teeth than women; that bodies fall to the ground at rates proportional to their weight, etc. But it never occurred to him, that the teeth in the mouth of a woman could be counted and that the balls of different metals and weight could be thrown from a height to see whether they fell below at the same time or one after the other. This resulted from the Greek's over-occupation with the abstract as against the concrete. In the words of Oswald Spengler:

The Greek did not stay his course for such base purposes as the careful investigation and collation of facts. He saw them and rushed to create by pure insight or philosophy a theory of the universe. The Greek, throughout his culture, preferred abstract thought to the study of concrete facts. Almost careless of external facts, the Greek was free to devote himself to the world of thought.

The role of Islam in human history is of revolutionary importance insofar as it led to revolt against Greek traditions and Greek thought. As Iqbal has observed, the spirit of the Quran was anti-classical. It emphasized Nature and History as two important sources of knowledge. It saw the signs of ultimate reality in the sun, the moon, the lengthening out of shadows, the alternation of day and

night, variety of human colour and tongues, etc. In short, for purposes of knowledge, Islam turned the gaze of Muslims on the concrete, the finite. For, in the words of Dr. Muhammad Iqbal, "It is the intellectual capture of power over the concrete that makes it possible for the intellect to pass beyond the concrete." The Book of Islam produced a concrete spirit in the mind of Muslims as against the speculative thought which ignored all observation and experiment.

We may borrow from Iqbal in order to appreciate the basic change in outlook brought about by Islam which led to the development of modern science and scientific spirit:

This appeal to the concrete, combined with the slow realization that, according to the teachings of the Quran, the universe is dynamic in its origin, finite and capable of increase, eventually brought Muslim thinkers into conflict with Greek thought which, in the beginning of their intellectual career, they had studied with so much enthusiasm. Not realizing that the spirit of the Quran was essentially anti-classical, and putting full confidence in Greek thinkers, their first impulse was to understand the Quran in the light of Greek philosophy. In view of the concrete spirit of the Quran, and the speculative nature of Greek philosophy, which enjoyed theory and was neglectful of fact, this attempt was foredoomed to failure. And it is what follows this failure that brings out the real spirit of the culture of Islam and lays and foundation of modern culture in some of its most important aspects.

It is this Islamic revolt against Greek thought which gave birth to induction and thus gave rise to the methods of observation and experiment – the basis of modern science. It is a colossal mistake to suppose that the experimental method is an European discovery. Though Europe has been rather slow to recognize the Islamic origin of her scientific method, recent European researches exhibit a grasp of this essential point. Robert Birffault, for instance, in his *Making of Humanity* stresses the point repeatedly:

Science is the most momentous contribution of Arab civilization to the modern world; but its fruit were slow in

ripening. Not until long after Moorish culture had sunk back into darkness did the giant to which it had given birth rise in his might. It was not science only which brought Europe back to life. Other and manifold influences from the civilization of Islam communicated its first glow to European life. (p. 202).

Although there is not a single aspect of European growth in which the decisive influence of Islamic Culture is not traceable, nowhere is it so clear and momentous as in the genesis of that power which constitutes the paramount distinctive force of the modern world, and the supreme source of its victory, natural science and the scientific spirit. (p. 109).

He further stresses the point in these forceful terms:

The debt of our science to that of the Arabs does not consist in startling discoveries of revolutionary theories; science owes a great deal more to Arab culture: it owes to it its existence. The ancient world was pre-scientific. The Astronomy and Mathematics of the Greek were a foreign importation never thoroughly acclimatized in Greek Culture. The Greeks systematized, generalized, and theorized . . . Investigation, the accumulation of positive knowledge, the minute methods of science, detailed and prolonged observation and experimental inquiry were altogether alien to the Greek temperament. Only in Hellenistic Alexandria was any approach to scientific work conducted in the ancient classical world. What we call science arose in Europe as a result of the new spirit of enquiry, of new methods of investigation, of the development of Mathematics in a form unknown to the Greeks. The spirit and those methods were introduced into the European world by the Arabs.

These remarks of some of the impartial European historians of the 20th century may be substantiated by a dispassionate study of the contacts between the Muslim World and Christian Europe during the middle ages and of Europe's transition from the medieval to modern times. Such a study would make it obvious that the stirrings for the rebirth of Europe came from two main sources: the contact

with the Muslim world during the Crusades and the impact of Muslim Spain upon Europe.

When the hordes of Europe's crusading barbarians were ravaging the countries of the East, they saw almost everything sharply contrasting with the state of affairs in Europe. The Westerners learned many Muslim and Oriental ways and developed a taste for the luxuries of the region. All this promoted a demand for Eastern goods and accelerated the growth of commerce. The Italians who had acted as the transporting agents for the Crusaders, took full advantage of their opportunities to build up trading relations with the East. Travel was promoted, and the explorations of Marco Polo and others followed on the heels of the Crusaders. This still further encouraged trade between Europe and the Orient. The revived trade, according to Henry Elmer Barnes in his *History of Western Civilization* (Vol. I)

. . . promoted the use of towns and a more progressive element in European life. The science and culture of the Muslims were brought back to Europe and helped to create the remarkable intellectual revival of the twelfth and thirteenth centuries.

But the impact of Muslim Spain was of a much deeper significance. We have already seen that the Universities of Spain attracted students from many parts of Europe and these universities imparted instructions in all subjects: philosophy, chemistry, astronomy, etc. Thus the treasures of Muslim knowledge reached Europe through those European students who had drunk at the fountains of Muslim learning in Andalusia. It is in this manner that the scientific method was introduced to Christian Europe. Sir Roger Bacon, whose role in the history of the development of science is of an abiding value, is well known for having benefitted from the Muslims. This is evident from the fact that the school at Oxford where he was educated had been established for the propagation of Muslim learning by the Jews who had been driven out of Spain by the Christians and had reached England with William of Normandy. In this respect the remarks of Robert Briffault are very illuminating:

Neither Roger Bacon nor his later namesake has any title to be credited with having introduced the experimental

method. Roger Bacon was no more than one of the apostles of Muslim science and method to Christian Europe, and he never wearied of declaring that a knowledge of Arabic and Arabian science was for his contemporaries the only way to true knowledge. Discussions as to who was the originator of the experimental method like the fostering of every Arab discovery or invention on the first European who happens to mention it, such as the invention of the compass to a fabulous Flavio Gioja of Amalfi, of alcohol to Arnold of Villeneuve, of lenses and gunpowder to Bacon or Schwartz, are part of the colossal misrepresentation of the origin of European civilization. The experimental method of the Arabs was by Bacon's time widespread and eagerly cultivated throughout Europe; it had been proclaimed by Abelard of Bath, by Alexander of Neckam, by Vincent of Beauvais, by Arnold of Villeneuve, and by Renard Silvestris.

The overwhelming evidence of history is that the Renaissance of Europe has a direct Islamic origin and inspiration. Consequently, we find that the first manifestation of European awakening was a large-scale translation of Muslim books into various European languages. By this process also recovered the classical works of the Greeks and the Romans in Arabic which the Muslims had preserved at a time when Europe destroyed them, and also the valuable contributions made by Muslims to the treasure of human knowledge. It may be pointed out that during the course of translation some works were intentionally or unintentionally ascribed to the translators themselves.

It is in view of these facts that modern Western scholarship is increasingly coming to the realization that the modern civilization — particularly modern science which is the basis and the source of strength of modern civilization — has a direct Islamic origin. Citations from the writings of a few out of numerous noted European scholars would make this point clear. According to Robert Birrfault:

It was under the influence of Arabian and Moorish revival of culture . . . that the Renaissance took place. Spain, not Italy, was the cradle of rebirth of Europe. After steadily

sinking lower and lower into barbarism, it had reached the darkest depths of ignorance and degradation when the cities of Baghdad, Cairo, Cordova, Toledo, were growing centres of civilization and intellectual activity. It was there that new life arose which was to grow into a new phase of human evolution. The time when the influence of their culture made itself felt, began the stirring of a new life. The fact has been set forth again and again. But it has been nevertheless stubbornly ignored and persistently minimised.

According to another historian:

The light from which civilization was once more re-kindled did not arise from the embers of Graeco-Roman culture smouldering amid the ruins of Europe, nor from the living death of the Bosphorus. It had not come from the Northern, but the Southern invaders of the empire, the Saracens.

Another European writes:

It would not be forgotten that the marvelous achievement of the Italian Renaissance followed directly on the train of the Crusading period. It may be said confidently that the Renaissance rested upon a foundation of material prosperity secured by the Crusades; and it may even be that its vital sparks were struck and kindled by the clash of forces which the Crusades set in motion.

According to Sarton whose work on the history of sciences is regarded as the most brilliant:

When the West was sufficiently mature to feel the need of deeper knowledge, when it finally wanted to renew its contacts with ancient thought, it turned its attention first of all not to the Greek sources, but to the Arabic ones.

The other main factor, besides the introduction of the Muslim sciences and the contact with Muslim civilization which had a stimulating effect on man's march towards progress and which brought about the Renaissance in Europe, was the relaxation of the iron grip

of the Church and the emancipation of the individual in Europe. The old order, which existed there before Europe came into contact with the world of Islam (which had no priestcraft and refused to recognize the difference between lay and clerical, between spiritual and mundane as it was understood in Europe), had been the empire of the Church, the commune, the guild, the scholastic system: the individual was always part of some group, and had no existence apart from it. The new order brought about after the Reformation was the State, the National Church, the merchant, the individual. The old order had as fundamentals, authority and ascetism: the new had reason and joy in the whole of life. For a thousand years there had been as much authority in the social life of Europe as in her intellectual life. Man used to be bound to a bishop, a lord, a municipality, to a school or a body. Now, he proudly stepped on the stage himself, eager to develop his capacities for his own benefit, with bondless confidence in his will, his superiority and his infinite variety.

This change also resulted from Europe's contact with the Muslim world. According to Ernest Barker:

The Crusades, if they did not remove, at least weakened the old clear distinction between sacred and profane, the lay and the clerical, the temporal and the spiritual; they were the consecration of the fighting layman, and in their way they led to the emancipation of the laity. Henceforth, if may be claimed [that] priestly orders no longer dominated men, and a new lay attitude to the world replaced the ecclesiastical attitude of the Middle Ages.

All this inevitably leads one to the conclusion that the bases of modern civilization were laid by Muslim and that they played a basic and vital role in bringing this civilization into existence. At this point one feels constrained to express full agreement with the following words of Draper:

I have to deplore the systematic manner in which the literature of Europe has contrived to put out of sight our scientific obligations to the Mohammedans. Surely, they cannot be much longer hidden. Injustice founded on religious rancour and national conceit cannot be perpetuated forever.