

ON RELEVANCE OF IBN SĪNĀ TODAY

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INTRODUCTION

History of Science, as it has been written and taught, provides a long list of contributions of European scientists and the Western culture area, starting with Greek and skipping over the medieval period, to those at the beginning of European renaissance and then on to the contemporary period. In these descriptions, the contributions made by the scientists of Asia, India and West Central Asia and the major developments of Asian culture area, are rarely mentioned. Their contributions, if mentioned at all, are made out to be marginal to the mainstream of scientific tradition. Today, when the millenary of the birth of a tenth century Asian scientist, Ibn Sīnā, is being celebrated, we must ask ourselves why we should do so. Are we doing so for purely nationalistic reasons or is there a deeper reason, besides taking pride in one of the earlier scientists of Asia ?

The countries of Asia and Africa, which were colonies of European powers, started achieving independence after the Second World War. After having gained independence, they began the process of their development on the one hand, and started looking for their cultural roots, identity and their distinctiveness on the other. In doing so, they started discovering the fallacies of ideas and concepts evolved by European powers and inculcated in their subject races to suit their political and economic objectives. One of these concepts was that science and technology was an European phenomenon and the features which go to make a scientific mind—capacity to observe, experiment, scientific integrity, logical consistency and courage of conviction—were not possessed by the oriental mind. By implication, it was suggested that since people of Asia did not have this bent of mind, science could not have developed in Asia.¹

Further, the colonisation disrupted direct relationships between the different countries of Asia. These countries, over the centuries, had interacted with each other through exchange of ideas in different fields of science and areas of scholarship in technology, socially and culturally as well as politically. Successive developments in certain parts of Asia had deeply influenced the other parts of the continent. As a result of colonisation, the people of Asia came into contact with the West and

began to look at each other through the eyes of Europeans. This had wide-ranging effects in their relations with each other. This is so even now when, as free nations, they are trying to re-establish their older relations and developing cooperation for achieving their development.

In this paper, therefore, we would explore some of these dimensions in the context of the life and work of Ibn Sīnā and his relevance to some of the contemporary problems.

SCIENTIFIC TRADITION AND REMEMBERING SCIENTISTS OF BYGONE DAYS

Scientific tradition, as we know, is different from other traditions of scholarship, insofar as it represents a tradition of cumulative knowledge. Information and knowledge acquired by different scientists is sorted out, and the grain picked up serves as a base for acquiring more knowledge. The process of accretion is of a dual nature, that of rejection and acceptance. What is not in conformity with new observations and experiments is rejected and what is in conformity with these is accepted. In this process the younger scientists, standing on the shoulders of their predecessors, are able to see farther and are also responsible for modifying, or even totally changing or completely rejecting the hypotheses, theories or ideas of their predecessors. Each discovery made by younger scientists and the results achieved modify or change the conceptual framework or theories developed by older scientists, however great they might be. History of science is full of records which testify to this process. Further, because of the cumulative nature of scientific knowledge, one reads only the latest literature. A scientist working in the eighties of the present century would hardly look at the literature of the sixties, much less of the last century. Unless, of course, it is for historical reasons, *i.e.* research in history of science.

The question, therefore, arises : why should one celebrate the centenaries or millenaries of scientists of the bygone ages ? Further, if we do so, then in paying homage to them, which particular aspect of their contribution are we to remember or honour them for ? This question is all the more important and significant when we happen to honour one who does not belong to our country.

We remember Ibn Sīnā as he represents the tradition of science, which is true for all ages, in which search for knowledge and zeal for acquiring it are unparalleled. At a very young age, Ibn Sīnā showed thirst for knowledge, ability to learn, and mental calibre. In his autobiography he mentions :

“From then onwards I took to reading texts myself ; I studied the commentaries until I had completely mastered the science of logic. Similarly, with Euclid...²

“I now occupied myself with mastering the various texts until all the gates of knowledge were open to me. Next I desired to study medicine and proceeded to read all the books that have been written on the subject.....³

“I was now a master of logic, natural sciences and mathematics. I, therefore, returned to metaphysics ; I read the metaphysics (of Aristotle), but did not understand its content and was baffled by the author’s intention ; I read it over forty times, until I had the text by heart. Even then I did not understand it...”⁴ Until Ibn Sīnā came across, by chance, a book by Abu Naṣr al-Farabi, *On the Objects of the Metaphysics*, and says : “I returned home and hastened to read it, and at once the objects of that book became clear to me, for I had it by heart”.⁵

There is an interesting incident quoted by his disciple and also his biographer, Abū ‘Ubaid al Juzjani, which is worth mentioning : One day during the course of a discussion one of his contemporaries, Abu Mansoor, chided him for his lack of knowledge in philology and his eagerness to express opinion without having studied the subject. According to Abū ‘Ubaid : “The Master was stung by this rebuke, and devoted the next three years to studying the books on philology ; he even sent for the *Tahdhīb al-balāgha* of Abu Mansur al-Azhari from Khurasan. So, he achieved a knowledge of philology but rarely attained.”⁶

Ibn-Sīnā’s times were particularly difficult. The difficulties arose as a result of political instability. He lived in an area which was divided into small kingdoms, very often at war with each other and the fortunes of these kingdoms were fluctuating with the size of their resources and, therefore, of their armies. These difficulties were accentuated as a result of petty jealousies at the courts, and often due to intolerance of new ideas and unorthodox views held by Ibn Sīnā. However, Ibn Sīnā does not mention these in his autobiography ; we know of these only from other sources. For instance, Abū ‘Ubaid says : “They then asked him to take the office of Vazier, and he accepted ; but the army conspired against him, fearing for themselves as a result of his action against them; they surrounded his house, sent him off to prison, pillaged his belongings, and took all that he possessed. They even demanded of the Amir that he should be put to death...”⁷ Despite this, however, when the Sultan fell ill, Ibn Sīnā was called to treat him.

The most interesting feature about Ibn Sīnā is that despite all the turbulences and personal problems, he continued to contribute to knowledge. According to Abū ‘Ubaid : “Meanwhile he remained in hiding in the house of Abū Ghālīb, the druggist. I requested him to complete the *Shifa*, and he summoned Abū Ghālīb and asked for paper and ink ; these being brought, the master wrote in about twenty parts (each having eight folios) in his own hand the main topics to be discussed ; in two days he had drafted all the topics, without having any book at hand or source to consult, accomplishing the work entirely from memory”.⁸ Later, he was captured and imprisoned. “While imprisoned in the fortress he had written the *Kitāb-al-Hidaya* (Book of Guidance), the *Risāla Haiy ibn yaqzan* (“Living Son of the Wakeful”) and the *Kitāb-al-Qaulanj* (Book of Colic).⁹

Ibn Sīnā's learning was not merely bookish ; he also acquired knowledge through observation and may be experimentation, in particular in the field of medicine. He himself says : "I also undertook to treat the sick, and methods of treatment derived from practical experience revealed themselves to me such a baffling description."¹⁰

He was, it appears, a critical person and did not accept anything and everything which was taught to him or was in fashion those days. This would be evident from his remarks about the Ismaili propagandist : "had listened to what they had to say about the spirit and the intellect, after the fashion in which they preach and understand the matter...but my spirit would not assent to their arguments."¹¹ His attitude to alchemy shows another dimension of his outlook. Alchemy in those days was a much sought-after science, since it was closely associated with the objective of transformation of baser metals into gold and in the preparation of Elixir of Life. A large number of charlatans and adventurers, like those who now-a-days masquerade as "gurus", claimed to possess the secret art and benefitted at the expense of credulous nobles and kings. Ibn Sīnā was one of the few amongst a large number of medieval scientists who exposed the charlatans and adventurers masquerading as alchemists. He disbelieved in alchemy for the reason that, according to him, the differences in the structure of metals were more deep-seated than what could be modified by change of colour.

These qualities—search for knowledge, perseverance, scientific integrity and courage—are basic qualities. It is desirable to remind ourselves of these qualities, which Ibn Sīnā cultivated in a most difficult period, particularly these days when one very often notices the practice of qualities, which are contrary to the tradition of science, in the pursuit of personal and limited gains. Further, Ibn Sīnā deserves to be remembered, besides for the above qualities which he showed in his person, also for his intellectual integrity and for challenging the commonly accepted views. The latter he did not merely base on his personal opinion, biases or prejudices, but on the basis of the then existing knowledge and the understanding of natural phenomena. Contrary to the then common beliefs he advocated new ideas, because of which he was often accused of not being a Muslim. The latter is evident from his couplet, written perhaps in reply to such accusations :

تکفر چو منی گزاف د آسمان تیود۔ حکم ترا از ایمان من ایمان نہ بود
 دہر چو من کی داویم کافر۔ پس دہر دہر یک مسلمان نہ بود۔

'It is not so easy and trifling to call me a heretic
 No belief in religion is firmer than mine own
 I am the unique person in the whole world and if I am a heretic
 Then there is not a single Musulman anywhere in the world.'

Both the accusation and Ibn Sīnā's assertion of his beliefs are interesting. The accusation reflects intolerance of new ideas and efforts to confine human intellectual efforts to narrow limits. The reply represents an assertion of belief and that new knowledge and ideas can only reinforce the belief and not diminish it.

Human history is full of examples of the pull of conservative forces, which in the name of religious beliefs or political ideology, exert pressure against intellectual advances, new ideas and social growth. History is also full of examples of courage of conviction of religious and political leaders who refused to be cowed down, and enabled humanity to reach new intellectual horizons and help society attain new dimensions. Ibn Sīnā did exactly the latter.

This dimension of his personality also deserves to be remembered in contemporary India, when we notice that many scientists, a number of them quite eminent, tend to have a duality of approach, one based on scientific knowledge and the other based on common prejudices, ideas and concepts which are contrary to science. Some of the lessons that we can learn from him are logical consistency, scientific method of arriving at conclusions and an intellectual integrity which refuses to compromise with the above.

Should we remember him for these qualities only ? Surely every scientist of some eminence has these qualities ; why then should we go back to him, particularly when he was not an Indian ? This takes us to a wider problem of history of science.

EUROPEAN ATTITUDE TO ASIAN SCIENTIFIC AND TECHNOLOGICAL TRADITION

We have been brought up in the tradition of European science, whereby it has been inculcated in us that modern science began in Greece, and after the Dark Ages, the European mind again picked it up and then gave it to the rest of the world. The contributions of Asian societies, India, China, Egypt, Babylonia and other West and Central Asian countries in antiquity and during the medieval period are considered marginal, if at all. Only a few pages, as if it is a side commentary to the mainstream of science—the latter made out to be a European stream—are devoted to it. For instance, writing on Arabic medicine, an eminent historian of science, Sherwood Taylor, says :

“The Arabs gave a high place to their physicians, who were usually of another race—Persian, Jew, or Syrian Christian. They made very little original contributions to medicine but kept alive the knowledge of the Greeks and added little to it. In the Eastern Caliphate, Rhazes, Haly Abbas and Avicenna (to use their Latinised names) wrote voluminous works almost entirely taken from the Greeks.”¹²

The meaning of this is obvious and so is the purpose that Eastern mind was incapable of developing science ; at best it could be a carrier of ideas and knowledge developed by the Europeans.

The question which we must face and try to answer is : Why this was so ? Was it based on the then existing knowledge or a part of political policy to denigrate the Asian scientific achievements and then to use science and technology as an instrument of European hegemony over Asia ? The full meaning of this would be clear from the understanding of the nature of European Renaissance. According to George Sarton : "To return to the Renaissance it was, among other things, a revolt against medieval concepts and methods. Of course, every generation reacts against the former one ; every historical period is a revolt against its predecessors, yet in this case the revolt was sharper than usual. It is not sufficiently realised that the Renaissance was not simply a revolt against scholasticism ; it was also directed against Arabic influences (especially those represented by Avicenna and Averroes)."¹³

Why this movement against Avicenna (Ibn Sīnā) and Averroes (Ibn Rushid) in particular ? The reasons for this lay in the fact that both Ibn Sīnā and Ibn Rushid represented the highest standards of science and scientific tradition of Asia which dominated the intellectual life of Europe through the translation of their works into Latin and other European languages. It was this influence and the tradition which they wished to do away with and minimise as much as possible. This hostility to Asian thought was not a new tradition in Europe. It was exactly the same in antiquity when Greeks having borrowed from Asian and Egyptian scientific traditions reacted against this tradition¹⁴ in exactly the same manner as Europeans did during Renaissance after borrowing from Arabic scientific and technological tradition. The effort by the Europeans to link their own scientific and technological tradition with that of Greece, to mention the intervening period as dark ages and to marginalise the Asian tradition, was part of the political effort to paint science and technology as purely a Western phenomenon. The political purpose behind this was to create a sense of inferiority amongst the Asians and use science and technology as an instrument of hegemony.

While the reaction against the scientific tradition was particularly sharp, it was not so against the mystical and obscurantist tradition of Arabic and Persian and Indian learning. On the contrary, one may notice definitive attempts, while suppressing the facts about the scientific tradition, to extol the obscurantist tradition and pseudo-philosophical learning. The result of these policies has been that Asian cultures are today unaware of their own scientific and technological tradition and heritage, and understand science and technology in terms of what Europeans have taught them. In fact, it would also not be wrong to say that people of non-European culture area consider that their culture and civilisation and their tradition is limited to what has come to be known as the "spiritual" tradition. There is a need, therefore, to look into our past with a fresh outlook and to link up our present, which at the moment looks dichotomised with the past. However, in

doing so, we must take a lesson from Europe that instead of linking it with the irrational and obscurantist tradition, we should link it with the rational, scientific tradition.

NEED FOR A NEW LOOK AT OLD KNOWLEDGE

The main impact of Ibn Sīnā in India, as it was in Europe, was in medicine. The contributions which are dismissed or minimised by European scholars were both in theory and in practice. The medical system developed in Europe is based on mechanical philosophy and has the basic concept of an average man. However, recent developments in the field of science and specifically medicine have brought to the fore the individuality of people, importance of diet, climate and systematic approach. The contributions of Ibn Sīnā have added significance in the present context, when serious doubts are being raised at the mechanical approach and its consequences. It may be worthwhile trying to study the treasure which is available, examine the knowledge in the context of present day development and make an effort to develop a new conceptual framework and theory of medicine, discarding the present one with its limited and narrow approach.

Incidentally, the Unāni system which was developed in West Asia and to which Ibn Sīnā contributed to such a large degree came to India and interacted with Āyurveda and developed considerably into an effective system and is used as one of the major systems of India. This system, under the impact of Europeanisation, became extinct in the land of its origin and now when efforts are being made to revive it, India is again helping these countries to do so. In other words, old relationships, exchange of ideas, flow of information and mutual help have once again been re-established.

There is yet another reason why we should have a second and fresh look at our past. Today we find ourselves at the end of an euphoria generated by the advances in science and technology, particularly since World War II. We, however, notice that the dreams have not been fulfilled. Misuse of science and technology for exploitation of men, society and nations, pursuit of narrow and limited goals and endeavour to increase private profit at social cost have all forced us to look at both the developments and the direction which these have taken. This has brought to the fore on the one hand the need for science and technology to be integrated with social, cultural and ethical values and on the other the need for modifying or changing the earlier values in consonance with existing knowledge and future possibilities in order to achieve the human and social goals that we set for ourselves.

Unfortunately for us, we have neither looked at concepts and values of the contemporary society, whose concepts and values we have been adopting uncritically, nor have we met the challenge of critical examination of the past. Consequently, the continuous working out and reshaping of the intellectual framework

of society and science, which is the need of the hour, have not been met by our culture.

It is in this context that Ibn Sīnā is important, for he represents the truly international tradition of science and technology, which was delinked by European scholars and made to look as a minor marginal religious tradition with the objective of Europeanisation of the scientific movement. A re-assertion of this tradition would be a major step towards true internationalisation of science and technology through different periods of history and culture areas.

INTERACTION OF SCIENTIFIC AND TECHNOLOGICAL DEVELOPMENTS IN ASIA

A cursory glance at the history of scientific thought and technological developments in India reveals one feature, that India, Central Asia and West Asia have been continuously interacting with each other to enrich each other and to help in each other's developments. These enrichments took place through traders and travellers, through scholars who came in search of knowledge or patronage, or through migration of people. This goes back to the mists of antiquity, and moves on from one period to another and through religions, first through Buddhism and later through Islam.

The first organised effort, of which we have records, to imbibe Indian knowledge in China was through Chinese travellers and Buddhist monks, who came to India to seek knowledge and enlightenment. What they took with them left a deep impression on their future developments. In West Asia, it was through *Baitul Hikma* during the reigns of Abbasid Caliphs in Baghdad. It was during this period when Indian scientific texts on astronomy, mathematics, and medicine were translated into Arabic and became the foundation of Arabic Renaissance, of the further development of science and technology in West Asia and North Africa. The level and degree of impact of the scientific and technological exchange can be judged by the fact mentioned by Ibn Sīnā. Referring to Ismaili propagandists, he mentions : "Presently they began to invite me to join the movement, rolling in their tongues talk about philosophy, geometry, Indian arithmetic, and my father sent me to a certain vegetable seller who used Indian arithmetic, so that I might learn from him."¹⁵

This statement of Ibn Sīnā that such people as vegetable sellers were conversant with and used Indian arithmetic to their advantage clearly reveals the impact of Indian science. This also incidentally indicates the culture of society, where even such people as vegetable sellers were in the know of specialized subjects. One wishes that in our own time, the level of education could be such that specialized science was part of the attainment of common people and their culture. Finally, the statement also reveals that on the culture then prevalent no person was low enough to be a teacher.

Al-beruni (973-1048), a contemporary of Ibn Sīnā, (they were occasionally in touch with each other), wrote one of the finest books, *Kitāb al-Hind*, which could be taken as a compendium of Indian sciences and which is not only the best medieval treatise on Indian mathematics and other sciences, but perhaps also the first book which is a comparative study, and aims at synthesis, of the Indian, Greek and West Asian knowledge of science. Al-Beruni came to India and learnt at the feet of scholars in India, despite the prejudices and practices then prevalent.

The reverse flow started when West Asian, Central Asian and North African progress in science reached its zenith, and also when people from these areas came, settled down here and established their empires. It would be of some interest to fully know and understand the degree and the extent of scientific and technological exchange which had taken place and the degree to which this exchange had affected each other's development in science and technology. Unfortunately, there is considerable misunderstanding about this exchange, which has been deliberately perpetuated as a part of the political exigencies during the colonial rule.

There are many myths in history of science, particularly with regard to the growth and development of science in India. Some of these suggest that India did not contribute much to science and technology during the medieval period. The great savant among the historians of science, the late George Sarton, says.

“To begin with, Hindu culture was stifled, if not stamped out, in many places by Muslim conquerors. The patronage of Muslim courts went naturally to Muslim scholars.”¹⁶

Later, he goes on to elaborate the same view :

“The Muslim invaders, if they did not destroy Hindu culture and what remained of Buddhist culture, were utterly indifferent to any culture but that of Islam. They encouraged their own learned men and drew their knowledge and inspiration from Western sources—that is Arabic and Persian.”¹⁷

Historical researches carried out on medieval Indian history give a picture contrary to the above and have gone a long way to dispel the general colonial view built up and perpetuated by the British in furtherance of their political objectives in India, which had also seeped into European outlook and scholarship.

As a result of my own studies, supported by Indian National Commission for History of Science, a book of source material on medieval science and technology has been compiled. It comprises a bibliography of about 10,000 manuscripts written in India in Sanskrit, Arabic and Persian. This is, by no means, a complete catalogue since it leaves out a large number of books, in different private collections, in various Indian languages, which developed during this period on science and technology. If Sarton was right, then this tremendous scientific activity would not have taken place. Obviously, Sarton was misled owing to lack of knowledge

of the Indian development and also, perhaps, because of prejudices created and promoted by the British political philosophy.

Asian countries, having become independent, are now busy in promoting science and technology and in doing so they need to collaborate with each other. In this context, it is desirable, in fact necessary, to do away with the prejudices promoted by the erstwhile colonisers which are coming in the way of effective collaboration, and to re-establish relationships which have been part of our cultural heritage and tradition. In doing so, we could bring to surface, once again, the scientific tradition of our culture area and thus reinforce the scientific and technological movement promoted since independence. Such an effort would also be helpful in doing away with intellectual colonisation, fighting against irrationalism and in helping us to make science an integral part of our culture and outlook once again.

Ibn Sīnā stood for the scientific tradition. He and his contemporary Al-Beruni had a considerable impact on India, though the full impact requires to be studied. Today, when we choose to honour Ibn Sīnā, we do so out of respect we have for him as a scientist, scholar, philosopher, out of respect, for a person who had zeal for knowledge and humility and desire to learn, and for his promoting the secular scientific tradition. The celebration of his millenary also represents a step forward to do away with the intellectual colonisation of the West and to re-establish the collaboration and co-operation amongst Asian nations. It is also to revive our scientific tradition and also to help learn our past as it was without the prejudices and without the tainted glasses provided by the West.

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- ⁴*ibid.*, p. 12.
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