

# SCIENCE AND CULTURE

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EDITORIAL

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The call that brings “Science and Culture” into existence is truly the call of the times. For, it is obvious to every thinking man that India is now passing through a critical stage in her history, when over the cultural foundations of her ancient and variegated civilisation, structures of a modern design

are being built. It is necessary that at such a juncture the possible effects of the increasing application of discoveries in science to our national and social life, should receive very careful attention; for if the present is the child of the past, it may with equal emphasis be asserted that the future will be the child of the present. The present generation by its policy and action will shape the course of the future.

There are many views of civilisation amongst thinkers. Some of them regard civilisation as a steady and continuous advance in material power, in social organisation, in political and economic life. According to this view civilisation has been so far a phase in the evolutionary process of man’s existence on this globe. Others regard civilisation as a cyclic process, passing through long periods of preparation for birth followed by periods of growth, development, and decay. Amongst the protagonists of the second view are to be found such men as the Egyptologist Sir Flinders Petrie and the German philosopher Otto Spengler who expounded his ideas in the learned volumes of the *Untergang des Abendlandes*. He talks of these periods picturesquely as the spring, the summer, the autumn, and the winter, and defends his thesis by a careful survey and analysis of the civilisations that prevailed on our globe viz. the Egyptian, the Babylonian,

the Graeco-Roman, the Hindu, the Chinese, the Arabic and the West-European. The first three ran through their full cycle (which is estimated to vary between 1500 to 3000 years) and are now dead, the next three are passing through their long winter. The West-European civilisation which is at the present time dominating the world, has passed through its summer and according to Spengler has now entered its depressing autumn. What will be its ultimate destiny?

We may not try to answer this question, but we may ask ourselves whether Spengler’s analysis is correct. Are the courses of civilisations to be thought of in terms of the phases of power, prosperity and activity of the dominant races which pass before us on the screen, or in terms of their total contributions in thought, in science and material prosperity which are left as heritage to the succeeding generations? When we talk of the old and the new stone age, the chalcolithic and the iron age, the age of steam and electricity, we are thinking of civilisation as a continuous growth, marked by steady additions in moral and material power as well as in thought. It is refreshing to find that in his new book *Man and Technics*, Spengler seems to have reverted to the first view and probably there is no essential difference between the two. The dominant races which are the principal actors in the drama of any particular civilisation may pass off the stage due to some cankerous growth in their body politic, but their traditions and achievements remain and act as a lesson stimulating cultural growth among the groups which take their place on the stage. Many examples may be given from history but one will suffice. The Graeco-Roman creators of the Mediterranean civilisation disappeared from Italy about 500 A. D., but the barbarians who stepped in their place on the stage picked up the threads of progress where they had been left, and created an entirely new

culture viz., the modern West-European civilisation marked by its science, its technic and conquest of Nature. When probably the creators of this civilisation will pass off the stage, their heritage will fall on the Russians, the Japanese, the Africans; and may we not expect also on the representatives of the Ancient East, now just emerging out of their long winter into a fresh cycle of activity? Has not such a stage begun already? It is in this hope that we may examine the cultural foundations of Indian civilisations.

In regard to the historical development of Indian civilisation one may say that it has begun receiving attention only recently. No European savant can now contend, as some used to do two decades ago, that India emerged from a barbarous stage two thousand three hundred years ago as a result of contact with the invading Greeks from the West. The discovery of the Indus valley civilisation in 1923 by the late Mr. R. D. Banerjee has once for all shattered that view. But this discovery also proved that the commonly accepted view held by Indian savants of pre-British days that the Indian civilisation started with the Vedic Aryans is equally erroneous. It now appears that the Indian civilisation is pre-Aryan and probably autochthonous and had a long period of development prior to the Aryan conquest of India ; this may be at least as old, if not older than the Egyptian. About 3000 B. C. the Indians lived in well-planned and well-built cities, knew the use of copper, practised spinning and weaving, undertook trading expeditions to distant Ur of the Chaldees, and probably as Von Hevesy has shown also to the far Eastern Polynesian Islands. Probably the religious beliefs like Saivism\* in which the dead were supposed to take the form of beasts and attend on a meditating deity Siva (or the lord of the departed spirits or beasts) and Jainism (negation of belief in a personal God and belief in right conduct and great men) are, as Mr. R. Chanda contends, as old as the days of Mohenjodaro and Harappa. The Aryans who, like the latter day Turks flowed from the steppes of central Asia into India on the east and into civilized Babylonia and pre-Greek Hellas on the west, had probably not much civilisation of their own to boast of, but, adopted like the pre-Turks and the Turks between 500 B.C. to 1500 A.D., the superior civilisation of the countries into which they poured. In India, they created the civilisation reflected in the Vedas, the great epics, and in Buddhism. They brought a sense of political and cultural unity in the regions constituting the Indian continent and

its vast medley of people composed of different ethnic stocks. We do not know the precise story of these movements as we do in the case of Egypt or Babylonia where, thanks to the spade of the archeologists the past up to 3300 B. C. has been very satisfactorily unearthed. But as Messers Masson-Oursel, Willman-Grabowski and Stern remark in their *Ancient India and Indian Civilisation*, the vast Sanskrit literature of India in its mystical legends is full of echoes of mighty happenings of the past. We can think of a day when the spade of the archeologist will disinter the bases of these legendary stories, and some of the mystic figures of the past may again be conjured to life in flesh and blood. Coming to more historical times, we find how the great Mauryan empire which extended over a larger area than even the present British, anticipated many of the modern movements for unity. The great Asoka tried to knit the vast people into a homogeneous community by adopting Buddhism, which may be regarded as the first religion of the world that appealed to the whole mankind instead of a particular tribe, as the state religion and imposing the script\*\* (viz., the Brahmi) and one language (that of the chancery of the central court at Pataliputra) over the far-flung regions of his empire. We also know in subsequent ages, the disintegrating forces of provincialism, communal and foreign interests, and foreign invasions laid in the dust the edifice sought to be built by many successive dynasties, how the struggle between imperialism and provincialism continued for about one thousand years, till Hindu civilisation was overwhelmed by the conquering invaders from Central and Western Asia.

The Muslim conquerors brought with them the elements of Islamic culture then passing through its glorious summer and tried to impose this on an alien population imbued with totally different ideas of life and civilisation. These attempts met with some success, but failed to create a common civilisation, partly because the protagonists of the two cultures held steadfastly to their dogmas, but mainly on account of the fact that they were unable to impart a dynamic impulse to the ancient social system, whose rigidity remained unaffected.

During the last one hundred and eighty years, India has again come into contact with another culture viz., that of the Western Europe which dominates the world to-day. This civilisation differs from the earlier ones in the

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\* Figures of cult images on seals indicate that the people, of Indus, worshipped humans and superhumans resembling Siva and the Jain Tirthankaras seated and standing in the postures of yoga.

\*\* Or rather two, the Brahmi and the Kharosthi in the north-west.

enormous increase of scientific knowledge, in the increase of power of man over the forces of nature and in the intensive application of scientific discoveries to all branches of human activity. This has revolutionised man's way of living, having brought different groups of men formerly living in complete isolation into almost daily contact, and tending to make the whole human society into one economic and cultural unit. India has not escaped the effects of the contact, but it has always taken a long time for a country with a distinct tradition of its own to assimilate an alien culture, particularly when forced upon it by its conquerors.

In the case of India, the period of contact has not been long enough and the clash is not yet over. It is true that the West-European culture has gained very considerable ground and has succeeded in shaking our ancient social structure and our belief in time-honoured religious dogmas and practices, in disturbing the economic life of the country, and in modifying the very ways of our thought. But though the two cultures stand face to face as thesis and antithesis, the synthesis is not yet insight.

There still remains a large section of the population not much touched by the changes and even the literate and urban classes cannot wholly reconcile themselves to the idea of the subjugation of their old system by the new conditions which are being created by modern science. We find therefore amongst our leaders a considerable number, who are incapable of seeing the great and inevitable part which the new age of technic will play in India's destiny and the lasting contribution that it is likely to make to the future of Indian civilisation. In the vernacular literature particularly, one very frequently comes across overdrawn pictures of imaginary good old days when nobody is supposed to have had anything to complain of, and a tendency to attribute all present troubles to the evil effects of science. One of the solutions usually offered is the total rejection of all modern technic for manufacture of the necessities of life, based upon the applications of scientific knowledge. It is a fact that large sections of the masses have suffered terribly from the effect of industrialism as practised in India today, which amounts to an exploitation of the masses for the benefit of a few. The great success of Gandhism is due to the fact that it expresses genuine sympathy with the victims of an aggressive and selfish industrialism, but we do not for a moment subscribe that, better and happier conditions of life can be created by discarding modern scientific technic and reverting back to the spinning wheel, the loin cloth and the bullock cart. On the contrary we hold that if the

discoveries of science are properly and intensively applied, they will offer far better solutions to our bewildering economic, social and even political problems.

It is true that large scale application of science to industry has given rise to a series of acute problems all over the world, but it should be recognised that these troubles are of two types viz., national and international. The national problem consists in the adjustment of the dislocation created by policies of industrialisation adopted by different countries, the remedies which have been suggested being the development of natural resources, state regulation of economic life and rationalisation of industry. The international problem consists in protecting home industries by artificial regulation of foreign trade and betterment of the methods of production at home. With respect to our country, we would hold with Mahatma Gandhi that the spinning wheel and the bullock cart should be protected so long as the state cannot provide for the victims of unemployment; on the otherhand, there should be unremitting effort to adopt the modern technic to all the needs of industrial and economic life, and old antiquated methods should be discarded without a sigh or tear when the proper insurance against unemployment has been made.

It is to preach this middle path that "Science and Culture" makes its debut before the public. Its object is dissemination of scientific knowledge amongst the public and advocacy of its application to all walks of life as far as practicable. The need of such a journal has long been felt, for, though India can now boast of a large number of workers in different branches of science some of whom have, by their contributions won international positions, their labours are mostly confined to their technical subjects. It is true that they are neither wanting in capacity, nor are lacking in will to instruct the people by means of well-written articles about the progress of science and the advantages of their application to the economic and cultural life of the country. But the absence of a medium of publication solely devoted to this purpose has long been felt. "Science and Culture" has been assured of the co-operation of a large number of eminent scientists in its efforts. It will publish articles written in popular language by experts about the recent contributions to knowledge in various branches of science. It will publish articles discussing Government policy in technical matters like rural reconstruction, transport, power development, industrial policy and such others which have their basis on science. It has started well with an article by Dr. N. K. Bose, Ph.D., Irrigation Research Officer of the Punjab, who discusses

the rural reconstruction scheme recently brought forward by the Bengal Government, and supports very strongly the idea of establishment of a River Physics Laboratory originally advocated by Prof. M. N. Saha in his presidential address to the 21<sup>st</sup> Indian Science Congress held at Bombay in January 1934. Besides these, considerable space will be reserved for correspondence which will be open to all scientists. Some space will also be devoted for short

research notes on scientific as well as cultural topics. An additional feature will be reviews of books and reports of activities of Government research and technical departments. Lastly, the view will be always kept in mind that science is important only as long as it conduces to the development of culture and serves the cause of human progress. □

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### **Note:**

This is the first Editorial of the Journal Science and Culture published in June 1935 written by its founder Editor – Professor Megnad Saha during the British India period. Some educated Indians challenged English claims of superiority of science and felt the need for an association where scientists and other educated Indians could interact and exchange ideas in order to promote science and instill a scientific temper among the masses to reap the benefits of science. In order to give it a proper shape the Indian Science News Association (ISNA) was established in 1935 by Acharya P. C. Ray, being the founder President, Professor Shyama Prasad Mookerjee, Sir U.N. Bramachari and Dr. S.C. Law (founder Vice-Presidents), Professor Megnad Saha and Professor Bidhubhusan Ray (founder Secretaries) and Professor N.R. Sen (founder Treasurer) of the Association along with some other distinguished thinkers and personalities as members with the prime objective of *“dissemination of scientific knowledge amongst the public”*. **Interestingly, the first issue of the Journal Science and Culture was published in June 1935, while the ISNA was founded on 9<sup>th</sup> July 1935.** This is the 88<sup>th</sup> year of publishing continuously the Journal Science and Culture.

Science and Culture is not just a journal of natural science, but also a journal of cultural science. Its holistic founders believed that one discipline could not be completely divorced from the other, preferring to focus on research and development of science, society and culture, making it a unique and truly multidisciplinary science journal. Many of the editorials of Science and Culture made notable impacts on formulating plans on matters of national interest. River Valley Schemes and Calendar Reform, advocated earlier by Science and Culture, received recognition from both the state and Central Governments and finally materialized by the Governments. The Journal is being enriched by thoughtful article from luminaries of India and also having articles from eminent foreign scientists including Nobel Prize winners. **Indian Science News Association (ISNA) is conducting the prestigious memorial and endowment lectures in the name of Acharya P.C. Ray, Prof. M.N. Saha, Prof. P.C. Mahalanobish, Prof. S.N. Bose, Prof. D.M. Bose, Prof. S.K. Mitra, Prof. B.C. Guha and Urmila and Mrinal Dewanjee Endowment lecture and a few others.** Besides, ISNA is also organizing a 12-week Annual Training Programme on Science Communication and Media Practice since 1980 in collaboration with Vigyan Prasar, DST, Govt.of India. This is the 35<sup>th</sup> year of running the course successfully. Besides, ISNA is also arranging Science Communicators Meet for last fifteen years. The course is very popular and a number of participants to this course has subsequently found jobs in various media.

**Pandit Jawaharlal Nehru**, the first Prime Minister of India and the architect of modern India in his message stated : *“Science and Culture are of the essence of life today, in war and peace, and any periodical which serves the cause of science and culture performs a service to India and humanity”*. Presently, the Journal is listed in Thomson Reuters Master List, UGC-Care List and also indexed in UK-based CAB Abstracts.

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