
CURRENT SCIENCE — 50 YEARS AGO

Science and Society*

EVER since men began to live in organised society, in which the law of the jungle was replaced by tradition and custom, there has been speculation as to the past and the future of humanity. There have been those who placed the golden age in the dim past and looked upon the successive stages of human history as years of decay and decline; others have visualised changes in society as cyclic in character; but the idea of progress which has dominated recent social thought is a child of the later eighteenth century, and it was the hope of the unlimited progress of humanity, which illumined the age of Reason in the later eighteenth century. Condorcet spoke of a "science of man," but it was left to others like Comte and Spencer to work out in detail a science of society, which has come to be known as sociology, whose 'laws' gave the earlier dreams of progress a body and a direction. Under the influence of the great changes of the Industrial Revolution, these early students of sociology conceived of humanity as moving towards a state of things in which industrialism would be the dominant note, and peace among mankind and goodwill towards all would prevail.

This progress was not supposed to prevail among all sections of humanity, nor was it continuous; many believed with Leslie Stephen that "Progress is the rare exception; races may remain in the lowest barbarism or their development be arrested at some more advanced stage; actual decay may alternate with progress, and even true progress implies some admixture of decay." The early years of the twentieth century seemed to deepen the note of interrogation, and the check to the industrial progress of some of the European countries, the rise of Japan, and the uneasy stirrings in their age-long sleep of other Eastern nations roused the apprehensions of Europe. Accordingly more than a quarter of a century ago, Mr. Balfour examined the possibilities of decadence among the advanced nations of Europe and the chances of advance into the van-

guard of progress by Oriental peoples, who were till then believed to be static. Mr. Balfour ruled out the latter possibility, holding that "progress is with the West; with communities of the European type." He was of opinion that the progressive character of the nations of the West would be supported and reinforced by the social force that had come into being, "new in magnitude if not in kind, viz., the modern alliance between pure science and industry." We have been told how fruitful that alliance has been by Mr. Keynes in his striking description of the "extraordinary episode in the economic progress of man constituted by the age which came to an end in August 1914."

Science had no doubt done wonders for the economic progress of men, but the same date that closed the epoch of economic munificence also opened a devastating episode in the history of man, in which science armed man with weapons of terrific capacity for destruction. The War in which thousands of millions of capital and millions of human lives were destroyed was followed by a short period of seeming prosperity and settlement. Then came the great Depression, which revealed another aspect of science in relation to society. Mankind has been living since 1929 in the shadow of this great economic catastrophe, lacking employment and food, not because the bounty of nature has been exhausted nor because science has come to a stop in its progressive control of natural forces, but entirely because social organisation has proved itself incapable of adjustment to the new discoveries of science, which, it has been proclaimed on all sides, has placed abundance beyond dreams for the first time within the reach of mankind. Man has stood helpless, hungry and cold, before the plenty that science has produced for him. Coffee has been thrown into the sea, wheat has been burnt in furnaces, and pigs have been slaughtered by the million, and mankind is starving.

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Change there must be, though should be mastered by man. But where is change taking us, and how far is the control of natural forces placed in the hands of

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man helping him to raise himself? "The future of man," remarks Professor Julian Huxley, "if it is to be progress and not merely a stand-still or a degeneration, must be guided by a deliberate purpose." It is true that the formulation of an agreed purpose for man as a whole will not be easy, because in spite of the wave of internationalism that swept over the world at the close of the Great War, national animosities are simmering, and within each nation, the cleavage between classes has been sufficiently wide to make much needed economic and social reforms within a nation hard if not impossible. Men have been brought up on a code of conduct based on the supreme interests of the individual, and social instincts are not yet sufficiently powerful in the individual members of a community. Therefore it is of great significance that Sir Josiah should suggest that "the whole body of ethics needs to be re-worked in the light of modern corporate relations." It is interesting to recall in this connection that Mr. Keynes prophesied several years ago that there would be great changes in the code of morals because drastic economic changes would vitiate the social value of hitherto cherished virtues like thrift.

The great task before nations at the present time is to realise their interdependence and the utter futility of the belief that one community or a section of a community can prosper while the other communities or the other sections are in misery. The bounty that modern discovery enables men to obtain from nature may at last enable them to free themselves from the age-long haunting economic problem, and at last engage in the pursuit of higher values of life. Men are assisted in meeting the call upon them only in part when the technical problems of the impact of science upon society are solved. More is wanted, and that is social control of scientific discoveries for the advancement of human values and not for mutual destruction. It is therefore comforting to read that at the same session of the British Association which listened to the learned President's call for a new technique and a new outlook in the application of science to social life, Sir Richard Gregory condemned the use of scientific research and invention for inhuman ends, and advocated the conservation of social and spiritual values with scientific teaching and research while Sir Daniel Hall called upon men of science to join in the fight for freedom, condemning the entrusting of science, which meant power, to "power-mongers".

NEWS

FAILURE OF NUCLEAR POWER PLANT IN CHERNOBYL, UKRAINE, USSR

A nuclear power plant in Chernobyl, Ukraine, USSR, failed in late April. Chernobyl is about 130 km north of Kiev and 640 km southwest of Moscow. Radioactive material, including cesium, cobalt and iodine from the 1000-MW facility has been detected in the air over Finland, Sweden and Denmark and in rain over Sweden at levels 10 to 100 times normal background. Scientists in the United States say that the Chernobyl nuclear reactors are not enclosed in thick concrete containment buildings as are reactors in the United States and most other countries. Thus if a failure occurs, there is little to

stop a plume of radioactive material from spreading over large areas. Soviet authorities say that 'those in need are being given aid'. However, numerous injuries and at least six fatalities are reported to have occurred. Soviet spokesmen maintain that the accident is the first of its kind, but rumours persist that a 1957 nuclear accident caused injuries and deaths in the southern Ural Mountains. (*Environ. Sci. Technol.*, Vol. 20, No. 6, 1986, p. 535; The American Chemical Society, 1155, 16th Street, N. W. Washington D.C. 20036, USA).