

Editorial & Publishing Offices :

MACMILLAN & Co., LTD.  
ST. MARTIN'S STREET  
LONDON, W.C.2



Telegraphic Address :  
PHUSIS, LESQUARE, LONDON

Telephone Number :  
WHITEHALL 8831

No. 3474

SATURDAY, MAY 30, 1936

Vol. 137

## Science and Citizenship

DURING the past generation, scientific men have generally adopted an attitude of indifference to politics, and active interest or participation in political controversy has been discouraged by the leaders of British science. It must be admitted that there is much to justify a policy of aloofness. The world of political discourse is pre-eminently emotive, and political controversy proceeds with little regard for the standards which make up the professional ethic of scientific workers. The wrong things are done for the right reasons: the right things are done for the wrong reasons. Effective action calls for an opportunism alien to the temperament of genuine research, and the issues which divide political parties have little relation to the creative possibilities of applying science on a larger scale to the advancement of human welfare.

The position of agriculture is a sufficient illustration of this irrelevance. Within the framework of competitive private enterprise British agriculture has declined, while a lop-sided mechanical technology has brought forth increasing urban congestion increasingly vulnerable to chemical and aerial warfare. That biotechnology would receive a powerful impetus, and that science in general would benefit from the collectivisation of agriculture as part of a rational population policy, is a view which would receive a sympathetic hearing from many scientific workers who are not collectivists in principle. Also this is probably the last thing which our political collectivists would ever think of doing.

Of late there have been signs that representative leaders of the scientific movement realise a new danger in repudiating the responsibility of the scientific worker as citizen. The retiring address of Sir Frederick Gowland Hopkins from the

presidential chair of the Royal Society, Sir John Orr's recent book and articles, and pronouncements by Prof. F. Soddy, Sir Daniel Hall, Dr. Julian Huxley, Prof. J. B. S. Haldane and others are symptomatic of a new orientation; and there is little doubt that they have the ear of the younger men of science. For various reasons—the betrayal of scientific freedom in present-day Germany, the frustration of medical progress by large-scale unemployment, the impetus which biological research has received from collectivist agriculture in the Soviet Union, and the shadow of a war which may destroy civilisation—there is a new awareness of social responsibility among the rising generation of scientific workers. There are no doubt many who agree with the views expressed in the letter on "Scientific Workers and War" which appeared in *NATURE* of May 16, in addition to those who signed it.

In great formative periods of British science, the man of science has been keenly alive to the social implications of his work. The "Invisible College" was formed by men inspired, as Spratt, its first historian tells us, by Bacon's eloquent plea: "The true and lawful goal of science is that human life be endowed with new powers and inventions." Boyle himself reiterated the common objective that "the goods of mankind may be much increased by the naturalists' insight into the trades". The British Association was formed to carry on the same task. Neither the character of political controversy nor the shortcomings of present parties is a sufficient reason for the attitude repudiated in an address entitled "Science in a Changing World" delivered at the Royal Institution on May 15. The man of science is a citizen as well as a scientific worker. If contemporary political discussion takes little stock

of the possibilities of human welfare which science can offer, it is his special responsibility to emphasise it by popular exposition or in an expert advisory capacity to any parties which will listen and act accordingly. The suggestion that he is neglecting his serious business if he does so is reminiscent of the Wee Free Minister who said that a man who plays golf neglects his business, neglects his wife and neglects his God. No one ventures to criticise the efficiency of a man of science because he is caught red-handed in the act of golf.

There are several ways in which scientific workers can exercise their responsibilities as citizens without committing themselves to a party label. One way is to co-operate with such organisations as the Next Five Years Group, P.E.P., the Malnutrition Committee, or the Engineers' Study Group, whose activities have been referred to in these columns already. Another is to press the claims of new personnel equipped with knowledge to bring the method of science into the field of social inquiry.

In his purely professional capacity the scientific worker remains an integral part of the society in which he lives, whether he chooses to accept responsibility for the uses to which science is put or prefers to make the plea that it is not his fault if poison gas is used against human beings instead of locusts. The extent to which pure

science is subsidised is a measure of social confidence in its capacity to provide fresh food for applied science. In its turn, the encouragement of applied science depends on the social machinery for distributing as well as producing its amenities. What is called over-production is a misleading synonym for under-consumption, and under-consumption means that existing social machinery is embarrassed by "new powers and inventions". The continued progress of science therefore depends on the organisation of consumption.

The popular appeal made by the proposal for a moratorium on inventions is a real danger which now threatens scientific progress. The undercurrent of press criticism which places the blame for unemployment on a supposedly too rapid growth of technical knowledge is reinforced by fear of the vast destructive potentialities which science has conferred on warfare. To reflect that the responsibility lies with the Government may reassure the conscience of the individual man of science. One may well doubt whether such reflections will satisfy the plain man, or save science from the wreckage, if events shape as Mr. Wells forecasts. Brilliant cultures have been eclipsed in the past, and followed by ages of darkness. This may be the fate of our own social culture. If so, social aloofness may prove to have been the betrayal of the scientific movement.

## Lowell: Traveller and Astronomer

### Biography of Percival Lowell

By A. Lawrence Lowell. Pp. x+212+5 plates. (New York: The Macmillan Co., 1935.) 12s. 6d. net.

THE life of Percival Lowell by his brother, the president of Harvard College, tells of a very attractive and enthusiastic man. His parents, who belonged to the aristocracy of Boston, brought him up to see that, whether rich or poor, he ought to do a life's work. Born in 1855, he graduated with distinction in 1876, and after a year's travel spent six years in business as the head of a large cotton mill. He resigned this post in 1883, and went to Japan to study the language and manners of the people. With Prof. Perry he made a trip from Tokio over the mountains to the other side of the island and was struck by the influence of the West on the political conditions of the country. On his return he accepted with diffidence an appointment as foreign secretary and counsellor

to a mission from Korea to the United States. On his return to Japan he accompanied the mission to Söul. He gives an account of this journey with a study of the Koreans in his first book "Chösou—the land of Morning Calm—A Sketch of Korea".

A most interesting chapter taken from an article by Lowell in 1886 in the *Atlantic Monthly* describes the retreat of the Japanese Embassy from Söul after a Korean *coup d'état*. In 1888 he wrote "The Soul of the Far East" and contrasted the 'impersonalism' of the East with the individuality of the West. This book was translated into many languages and was greatly appreciated by such different critics as Dr. Pierre Janet, the French neurologist, Lafcadio Hearn and Dr. Clay Mackenzie, a Unitarian missionary to Japan.

Lowell made two further visits to Japan. One of these coincided with the murder of Mori, a progressive Japanese minister, of which he gave