

The philosophic claim is made that a single life germ might hold all the potency and promise of the entire organic world. But why restrict the beginning of life to a single germ? And why restrict the organic synthesis to one occasion? No good reason appears for supposing that the combination of forces on the surface of the mature earth was ever essentially unlike

the present, and the circumstances which produced the primordial life must have been constant. This implies the probably continuous creation of organic matter to the present time. The amoeba either has retained its simplicity through countless generations of organic evolution during a vast length of time or it is of recent creation.

SCIENTIFIC EVENTS

INTELLECTUAL FREEDOM

THE following manifesto signed by 1,284 scientific workers, of whom sixty-four were members of the National Academy of Sciences, and eighty-five college presidents and deans and directors of industrial laboratories and experiment stations, has been issued:

In an article entitled "The Pragmatic and Dogmatic Spirit in Physics," which appeared in the April 30 issue of *Nature* (with strong editorial disapproval), wide publicity is given to the official Nazi position on science and scientific research. In essence the article is an attack on all theoretical physics, and, by obvious implication, on scientific theory in general. It introduces the official racialism of the Nazis to divide physicists into good, *i.e.*, non-theoretical and "Aryan," and bad, *i.e.*, theoretical and Jewish. Similar notions have appeared in many popular magazines and scientific journals in Germany, in the addresses and writings of the Minister of Education, of university rectors and deans, of scientists and non-scientists. Apart from racial theories, furthermore, science and art are subject to ruthless political censorship. These ideas have found concrete expression in the dismissal and persecution of over 1,600 teachers and scientists (by the fall of 1936) from German universities and research institutes (and now Austria and Italy too), and in the restriction of higher education to students having the "proper" political and racial qualifications.

American scientists, trained in a tradition of intellectual freedom, hold fast to their conviction, that, in the words of the resolution adopted by the American Association for the Advancement of Science, "Science is wholly independent of national boundaries and races and creeds and can flourish only when there is peace and intellectual freedom." If science, to quote the A.A.A.S. resolution again, is to continue to advance and spread more abundantly its benefits to all mankind—and who can attack that goal?—then the man of science has a moral obligation to fulfill. He must educate the people against the acceptance of all false and unscientific doctrines which appear before them in the guise of science, regardless of their origin. Only in that way can he insure those conditions of peace and freedom which are essential for him and for the progress of all mankind.

It is in this light that we publicly condemn the Fascist position towards science. The racial theories which they advocate have been demolished time and again. We need only point to the work of Heinrich Hertz in physics, Fritz Haber and Richard Willstätter in chemistry, Ludwig

Traube, Paul Ehrlich and August Wassermann in biology and medicine, all German Jews and all empirical scientists. The charge that theory leads to a crippling of experimental research is tantamount to a denial of the whole history of modern physics. From Copernicus and Kepler on, all the great figures in Western science have insisted, in deed or in word, upon the futility of experimental research divorced from theory.

We firmly believe that in the present historical epoch democracy alone can preserve intellectual freedom. Any attack upon freedom of thought in one sphere, even as non-political a sphere as theoretical physics, is in effect an attack on democracy itself. When men like James Franck, Albert Einstein or Thomas Mann may no longer continue their work, whether the reason is race, creed or belief, all mankind suffers the loss. They must be defended in their right to speak the truth as they understand it. If we American scientists wish to avoid a similar fate, if we wish to see the world continue to progress and prosper, we must bend our efforts to that end now.

THE ASSOCIATION OF SCIENTIFIC WORKERS

THE resolution of the American Association for the Advancement of Science (SCIENCE, February 4, 1938) and recent actions of the British Association bear witness to a widespread interest on the part of scientific workers in the increasingly critical development of social problems. Members of the staff of Harvard University, the Massachusetts Institute of Technology and other institutions in Boston and Cambridge, Mass., have formed an Association of Scientific Workers, having as its aims: (1) to bring scientific workers together to promote an understanding of the relationship between science and social problems, (2) to organize and express their opinions on the steps to be taken towards the solution of these problems, (3) to promote all possible action on the conclusions reached.

The contribution of scientific workers to world progress is to-day larger than ever before. Nevertheless, they are faced with economic and international developments which continually become more critical. As a group they have virtually no control over the applications of science, and are without the means of expressing their opinions as to how these developments should be met. The only expressions of opinion