British Manpower

SEVERAL governmental and professional agencies are concerned with a continuing supply of scientists and technologists to meet this country's expanding needs in defense and industry. These agencies, however, have failed to impress the Congress and the public with the magnitude and urgency of the problem, and comparatively few students of the subject emphasize sufficiently the imperative need for expert teachers in the several fields of science and technology. Comparable situations confront the other industrial nations, and the acute concern that is developing in the United Kingdom with regard to manpower has recently been set forth in the *Fifth Annual Report of the Advisory Council on Scientific Policy (1951–1952)*, from which the following excerpts have been taken.

The Committee on Scientific Man-Power was appointed by the Advisory Council on Scientific Policy in December, 1950. Our terms of reference are "to study the future needs of scientific and technological man-power for employment both at home and abroad." . . . We cannot pay our way in the world or discharge our obligations unless there is a large increase in national production. . . . This must be accomplished with a labor force that is aging fast and which is relatively stable in numbers. . . . The number of young persons reaching the age of 15 was 740,000 in 1939 and 635,000 in the present year. There will be little improvement until 1960. . . . The implications are unmistakable. Manpower must be used with the greatest efficiency. . . . We need to increase both absolutely and relatively the number of scientists in our industries. . . . In 1949–50 the number of American university degrees awarded in science and technology was 110,000, whereas in Great Britain the total . . . was only 14,000. Even when we allow for the difference in the size of the labor force in the two countries, America is thus turning out, and presumably employing, nearly three times as many scientists as we are in Great Britain. . . .

The current demand for scientists arising from industry, the defense program, government service, and plans for assisting the undeveloped areas of the world is so great that we can see no prospect of supply exceeding demand. . . . There is likely to be a long-term shortage of practically all kinds of scientists, and every effort should be made to increase the supply, with particular emphasis on chemists, chemical engineers, electrical engineers, mechanical engineers, and physicists. At present the supply of geologists, civil engineers and metallurgists appears to be equal to the demand. There is some unemployment of men trained primarily in the basic biological sciences. . . .

About 7 per cent of pupils remain at school after the age of 17. . . . A large potential reserve of university students is contained in the number who leave school before the age of 17. . . . The ranks of those who are at present attracted to an arts course provide another potential source of science students. The number of students of pure and applied science at British universities has more than doubled since the war. The numbers in medicine have changed little, whereas those in arts have increased. . . . We do not advocate the diminution in the importance of the humanities in our universities, but many arts graduates are finding it difficult to obtain employment. . . . The technical colleges could be geared to increase their output of scientists within a comparatively short time, but what is clearly needed as well is the further expansion of facilities for scientific education in the universities. . . .

Although present-day science graduates are adequate as scientists, they tend to lack a sufficiently broad education, not only in a general sense but also in the field of science. . . . The narrow specialist is rarely able to step outside the confines of his own particular interests. . . . Particular attention needs to be drawn to the difficulty of finding good science masters. . . . It may become necessary to take special measures to increase the numbers of science teachers in the schools. . . . We need to look now to a steady growth in the facilities for training scientists.

SCIENCE, founded in 1880, is published each Friday by the American Association for the Advancement of Science at the Business Press, 10 McGovern Ave., Lancaster, Pa. Entered as second-class matter at the Post Office at Lancaster, Pa., January 13, 1948, under the Act of March 3, 1879. Acceptance for mailing at the special rate postage provided for in the Act of February 28, 1925, embodied in Paragraph (d-2) Section 34.40 P. L. & R. of 1948.

All correspondence should be sent to SCIENCE, 1515 Massachusetts Ave., N.W., Washington 5, D. C. The AAAS assumes no responsibility for the safety of manuscripts or for the opinions expressed by contributors. Four weeks' notice is required for change of address, and an address stencil label from a recent issue must be furnished. Claims for a missing number will be allowed only if received within 60 days from date of issue.

Annual subscriptions, $7.50; single copies, $.25; foreign postage, outside the Pan-American Union, $1.00; Canadian postage, $.50. Special rates to members of the AAAS.

The AAAS also publishes THE SCIENTIFIC MONTHLY. Subscription and advertising rates on request.

Cable address: ADVANCESCI.