has carried on a number of oxygen determinations, particularly during the colder months.

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THE VITALITY OF BURIED SEEDS

Two long-term seed tests have been started in the United States, and are still in progress. The first was started by Dr. W. J. Beal at the Michigan Agricultural College. In this test, one half of the kinds germinated after forty years. The other was begun by the Seed Laboratory, Bureau of Plant Industry, U. S. Department of Agriculture, in 1902 at Arlington Farm, Virginia. At the end of twenty years, fifty-one of the 107 kinds planted were viable. Other sets of seeds in both tests remain buried and will be taken up and germinated at intervals. These two tests have been particularly suggestive with respect to revegetation and crop rotation in relation to weed control.

It now seems desirable to put down a more comprehensive long-time series of tests to determine the effect of typical soil and climatic conditions on the length of time seeds will remain alive when embedded in the soil. Such a test is now being planned by the Seed Laboratory, Bureau of Plant Industry, U. S. Department of Agriculture. The success of the project will require the cooperation of many interested organizations and individuals. Suggestions as to characteristic areas with reference to both soil and climate will be welcomed as well as suggestions as to the kinds of seeds of particular interest in these typical localities. It is expected that the seeds used will be of the crop of 1931, and that they will be placed in the ground during the fall of that year.

E. BROWN

SPECIAL CORRESPONDENCE

RESEARCH AT THE MELLON INSTITUTE DURING 1929–30

SINCE Mellon Institute was established in Pittsburgh nineteen years ago, about thirty-five hundred companies have benefited directly, either as individuals or as members of industrial associations, by the work carried out under the institution's industrial fellowship system. Robert Kennedy Duncan, the originator of this procedure, envisioned as its goal ideal industry, which would "give to all broader opportunities for purposeful lives." The double function of the institute as a technical experiment station and as a training school for industrial scientists is manifested by the successful products and processes worked out under its auspices and by the regiment of earnest researchers who have here gained knowledge and experience that they are now applying in wider fields.

In his seventeenth annual report to the institute's board of trustees, just issued, Director Weidlein has summarized the progress during the fiscal year ended February 28, 1930. A quantitative measure of the activities is afforded by the funds contributed by the industries in this period for the support of research, which reached the sum of $929,109.02, showing an increase of 16 per cent. over the preceding year. At the close of the year, sixty-one problems were under investigation, twenty-one by multiple industrial fellowships and forty by individual industrial fellowships. Eight studies are being supported by industrial associations. Five additional fellowships will begin work during the spring. One hundred and forty-three industrial fellows and fellowship assistants are carrying on the experimental work. During the calendar year 1929, publications by members of the institute included seven bulletins, fifty research reports and fifty-nine other papers. Sixteen United States patents were issued to industrial fellows.

The institute expends its income not only in conducting research for the industries and in the extension of its library and experimental facilities, but also in sustaining its department of research in pure chemistry and in supporting certain investigations of general importance to public welfare, such as, for example, the comprehensive study of air pollution now in progress.[1] The fellowship on pure research, maintained since 1915, was perpetuated in 1927 as a separate department. In this way the institute is giving constantly increasing attention to the encouragement of research on fundamental chemical problems. This attitude is the result of altruistic motives and of the realization that such studies are necessary as a background and stimulus for industrial research. Since this department was established, it has published nineteen papers on various subjects in pure organic chemistry. Most recently its work has been on the acidic carbohydrates occurring in plants.

Of the sixty-one fellowships now active, twenty-nine, approximately half, have been in operation for five years or more. Fifteen have completed more than ten years of work. These facts bear witness to the growing realization by industrialists that long-time, fundamental research is profitable.

Information concerning the subject-matter and progress of many of the fellowships is not releasable. The following developments during the year are

[1] On the institute's air-pollution investigational program, see L. W. Bass, SCIENCE, 70: 186, August 23, 1929.