appearance in later generations shows that the germ plasm has been affected and altered. The fact that the descendants of such individuals return to the original state upon their return to the original conditions would seem to indicate only that they have again shown their capacity to respond to a changed environment. We can not call either the original or the altered form normal, for each is "normal" to the particular set of conditions under which it develops. Moreover each form is capable of yielding descendants showing the parental characters only if the successive generations are maintained within the environmental range which produces that particular set of characters. In this sense we may regard the characters ordinarily shown by a species as being acquired, since these are maintained only under the conditions under which the species ordinarily lives and must, therefore, be regarded as developed in response to these conditions and impressed by these conditions on the germ plasm. A full description of a species should include not only the characters which we ordinarily recognize, but a statement of the conditions under which these develop, together with all other characters which the species may show under other conditions. Surely, the potential characters are as much a part of the species as the expressed characters. It is only the chance of the environment that makes one set of characters expressed and keeps another set suppressed and potential. We have not yet such a description of any species, but only when we have this can we believe that we really know the species.

As to the means by which the environment accomplishes its results we still know almost nothing. Results of great importance to this question will, I believe, be obtained in the future from careful experiments carried on for many years. I believe, for example, that the effect of use and disuse is still to be determined by a series of properly conducted experiments. For this the caves abounding in some parts of Virginia seem to offer an excellent opportunity to determine the manner in which many cave animals have become blind. Such work should be done under the auspices of some organization which could continue the studies with the necessary care for several decades or possibly centuries, but could be expected to yield results of fundamental importance and lasting value. Whether the environment can or can not produce new characters within a species, altering its inherent capacities, is still open to question. But, however this may be, we can not doubt that our species are what they are partly because of the molding action of the environment; and a true interpretation of the evidence shows, I believe, that, in many cases, the external conditions affect the germ plasm as well as the body material and consequently have their effects shown in a smaller or larger number of succeeding generations.

W. D. HOYT

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GRANTS IN SUPPORT OF RESEARCH

THE opinion seemingly is prevalent that research is inadequately supported in the United States of America and that small grants are especially difficult to secure. Undoubtedly it is true that larger resources could be used to advantage in the promotion of scientific inquiry. Nevertheless, it should be recognized that very large sums are now available for research and that numerous sources of small emergency grants exist.

This note is written chiefly because the opinion of many investigators appears to be at variance with the experience of committees on grants. The former tend to consider it either impossible to secure assistance or scarcely worth the effort. The latter, on the contrary, are frequently surprised by the scarcity of meritorious requests and the necessity of inviting or even urging investigators to present their needs. Not infrequently committees responsible for special funds are unable to make awards because of this dearth of applications.

The experience of the writer as one-time director of the Research Information Service of the National Research Council and as a member of the Committee on Grants of the American Association for the Advancement of Science convinces him that investigators too often are not familiar with even the more important sources of funds, and strangely careless about informing themselves and presenting applications which permit intelligent committee action. There seems also to be a reluctance on the part of some investigators to ask aid because of the possibility of refusal. This attitude is unfortunate alike for committee responsibility in the distribution of funds and for the progress of research. It is obviously and highly desirable that every investigator whose original work demands additional funds for its proper conduct make known his needs fully and convincingly to the officers of appropriate sources.

Although not all investigators may reasonably be expected to be familiar with the multitudinous sources and forms of support of research in this country, any intelligent and determined individual should be able to assemble pertinent information on need. The Research Information Service of the National Research Council two years ago issued a bulletin on "Funds available in 1920 in the United States of America for the encouragement of scientific research." This publication has been distributed widely and is still avail-

able to investigators who desire to utilize it. A revised edition is in preparation for issuance in 1924.

The Committee on Grants of the American Association for the Advancement of Science earnestly invites the attention of investigators to the fact that the Association distributes annually from four to five thousand dollars in small grants, usually of less than $500. The Committee often has too few applications for aid. It never has had too many good ones! This undoubtedly is the experience also of similar bodies. Whether or not available funds for small grants are entirely adequate, it is reasonably certain that existing funds are not being used to the best possible advantage because investigators do not take the trouble to get their needs before the administrators of appropriate sources.

In so far as possible the Research Information Service of the National Research Council will advise inquirers about possible and appropriate sources of support and will thus enable them to communicate directly with special committees or other bodies.

ROBERT M. YERKES,
Chairman

COMMITTEE ON GRANTS OF
THE AMERICAN ASSOCIATION

JACOB ROSENBLOOM

ON September 25, 1923, there died in Pittsburgh Dr. Jacob Rosenbloom, the eminent metabolist. In him America lost an ardent lover of science, and biochemistry a prominent contributor to its progress.

I met Dr. Rosenbloom thirteen years ago when he was twenty-five years old. At that time he was a living dynamo, working fifteen to eighteen hours daily in the laboratory on several problems in biochemical research simultaneously. His mind was one of the alertest that I have known. He constantly read the scientific literature published all over the world, and, with the most tenacious memory, retained and indexed his gleanings so that he could throw light at any moment on any problem in the very diverse fields of medicine and biochemistry.

His tastes were catholic. His reading was as diverse as literature itself. He spent very little time in the enjoyment of the trivialities of life. His laboratory and his library were his places of recreation and repose.

Dr. Rosenbloom was born in Braddock, Pennsylvania, on February 25, 1884. He received elementary and high school education in the local schools and then entered the University of Western Pennsylvania, from which he was graduated in the year 1905 with the degree of Bachelor of Science. His professor at the university was Dr. Francis Phillips, a man who has left his mark on American chemistry. Professor Phillips prophesied a brilliant future for Dr. Rosenbloom's chemical attainments, and he remained his friend and admirer until his own demise. From Columbia, Dr. Rosenbloom received the degrees of Doctor of Medicine and Doctor of Philosophy. Later on he was appointed biochemist in the Western Pennsylvania Hospital of Pittsburgh and assistant professor of biological chemistry in the University of Pittsburgh.

His specialty in medicine was the diseases of metabolism, and he was the first man in the United States to recognize such a specialty, to enter it and to find many imitators.

Dr. Rosenbloom was generous to a fault. His time, his purse and his labors were always at the command of his friends. One can conceive of the generosity of his mind when one is told that knowing that his time for research was limited, he published at his own expense a brochure entitled "1000 problems in biochemical research" and freely distributed it to his friends and enemies for them to grasp these suggestions and to work out these original thoughts of his.

He has contributed more than one hundred reports of original research to the various medical and biological journals of America, England and Germany. Those who have read his works will feel greatly the loss that science sustains.

Towards the later years of his young life, Dr. Rosenbloom devoted much time to the history of medicine and he had made several interesting contributions to that subject in the *Annals of Medicine* and in *Medical Life*. He has asked the author of these lines before he died, not knowing that he was going to die, to collaborate with him in the publication of a volume on "Critical Studies in the History of Medicine." This volume is ready and will soon be submitted for publication.

MAX KAHN

NEW YORK, N. Y.

SCIENTIFIC EVENTS

BRITISH AGRICULTURAL RESEARCH[1]

ROBERT HUTCHINSON, president of the National Association of British and Irish Millers, read a paper on "The Economic Basis of Wheat-growing in England" at the annual meeting of the fellows of the National Institute of Agricultural Botany on November 2. The only way, he said, of preventing the area under wheat from being further reduced was to raise the price to a profitable level. This is not impossible if a wheat is obtainable which combines with the productivity, the stiffness of straw and the resistance to disease of the best English wheats, the "strength" which puts so high a premium on the best Canadian wheats. "Strength" is the mysterious factor which

[1] From *Nature*.