REPORTS

GRANTS FOR RESEARCH OF THE VIRGINIA ACADEMY OF SCIENCE

DURING the ten years from 1929 to 1938 the Research Committee of the Virginia Academy of Science has received 102 applications for aid, totaling $9,090.57, and has given out in the form of grants $4,028.17, or 44 per cent. of the amount requested. This $4,028.17 is made up of $400.00 received from the American Association for the Advancement of Science during 1935–1938, and $3,628.17 from the income account of the endowment fund of the academy. Of the 102 applications, 40 were granted in full, 22 in part, and 40 were granted nothing.

The 102 applications came from 19 different educational centers within the state. These applications represent practically every field of work in science in which people in Virginia are interested.

The purpose of the Research Committee is the encouragement of research in Virginia. How much has research been encouraged by the work of the committee? We have no definite data on this point, but there is rather general agreement that the interest in research is increasing and that more and more research work is being done.

Probably the best evidence we have concerning the effect of the grants on the amount of research work being done is to be found by studying the number of papers that have been read before the academy as a result of the grants and the number of papers that have been published.

Our analysis shows that, as a result of the 62 grants made (in full or in part), 48 papers have been "read" and 66 papers have been "published." Of course, we are unable to state how many of these would have been "read" and/or "published" without help from the Research Committee. However, we can contrast them with the similar output from the applications that were refused. From the 40 applications that were refused, only 12 papers have been "read" and 5 papers have been "published." Of course, here again the evidence is not conclusive, as one reason for refusing a grant to some of these was the fact that the project was not well chosen. However, on the whole, this evidence seems to indicate that the grants have encouraged research in Virginia.

The Research Committee was established for the encouragement of research in Virginia. Almost of necessity it has been obliged to abide by this purpose, as it has not had sufficient money to support research. It has accordingly tended to encourage the young man and the man in the smaller college rather than to support the seasoned worker.

Numerous letters indicate that the recipient of a grant is greatly encouraged and heartened that the Research Committee has thus approved and aided his work. For example: "The funds given me, while of intrinsic value, were prized by me mainly for the mental boost which they imparted. To feel that my fellow scientists thought well enough of me to give me a grant was like a tonic. To be active with some problem and to see that others wish to help in your search is one of the finest things that can come to one."

Apparently the college administration has reacted favorably to this recognition of the importance of scientific research in the work of the college. In three cases, 50 per cent. of a grant has been made on the condition that the administration would supply the other half. In each instance this has been done. One says, "It has helped make the administration realize the importance of research." Another says, "It brought me appointment as chairman of a committee on research in the college, and letters of approval from the administration."

"The Virginia Academy of Science in encouraging research through such grants will probably find the intangible results far more important than the tangible ones. Such things as enthusiasm, spirit of inquiry, a more intellectual life and increased research advantages . . . may be difficult to measure, but are highly important."

E. C. L. MILLER,
Secretary

GRANTS FOR RESEARCH OF THE AMERICAN GEOLOGICAL SOCIETY

THIRTEEN grants in support of special research projects were authorized by the council at the December, 1939, meeting, as follows:

Carl Tolman, Washington University, St. Louis, will investigate mineralization in the Lamotte-Fredericks-town district of Missouri as one unit of a comprehensive study of the character, occurrence and genesis of the lead deposits of southeast Missouri. Although the deposits have been studied for years, many unsolved questions as to their origin still remain, and Professor Tolman hopes that in the Lamotte-Frederickstown district he may find some of the answers. $350.

R. Dana Russell, Louisiana State University, will continue his investigation of submarine deposits off the mouths of the Mississippi River. The work will be carried out during the year in cooperation with the United States Coast and Geodetic Survey. With a Piggot gun core samples will be taken from the sediments of the bottom for laboratory analysis and study. $700.

Amadeus W. Grabau, Peking, China, in searching the literature in connection with the preparation of Volume 5 of his series on *Paleozoic formations in the*

light of the pulsation theory. Professor Grabau went to China in 1920 as China Foundation research professor at the National University and chief paleontologist of the Chinese Geological Survey. In recent years opportunities and facilities for scientific research in China have been seriously impeded. The search of the literature is being made in American libraries by his assistant. $1,000.

B. L. Clark, University of California at Berkeley, will photograph and study Radiolaria from the Tertiary and Cretaceous formations of western North America to determine their value in stratigraphic correlation. Materials for study are being furnished through cooperation with oil companies of the west coast. $500.

A. Stoyanow, University of Arizona, will extend his studies of the Cretaceous of southeastern Arizona. Professor Stoyanow finds it necessary to compare fossils of his collection with those collected by others and will confer with paleontologists at Texas universities, at the National Museum in Washington, and at Philadelphia and Albany. $400.

T. S. Lovering, University of Michigan, will carry out mathematical experimental researches in thermal model theory in advancing his investigation of the flow of heat in the earth's crust during geologic time. The larger investigation has been under way for several years, and the grant will furnish research assistance, materials, and apparatus for establishing closer control of the thermal conductivity measurement. $900.

Leland Horberg, University of Illinois, will lead an expedition of three men into the eastern part of the Gros Ventre Range of northwestern Wyoming to complete a map, on which he has already spent considerable time, to study overthrust and high-angle faulting and the mechanics of the deformation, and to work out the diastrophic history. The area to be studied is claimed to be excellently located for structural studies, for within it are at least three types of structure related to both eastern and western Rocky Mountain trends. $430.

John Clark, Carnegie Museum, Pittsburgh, Pennsylvania, will spend four months with two assistants in Utah studying the Uinta formation with special reference to paleogeographic interpretations. He has already devoted two seasons to a study of the structural history of the Uinta Range, and the new work will contribute information on principles of fluviatile sedimentation and stream adjustment. $800.

F. G. Clapp, New York, N. Y., will prepare illustrations and complete a report on the geology of Afghanistan based on private field work during 1934–1938. $700.

Eugene N. Cameron, Columbia University, was granted assistance to complete the mapping of the Mount Prospect intrusive complex near Litchfield, Connecticut, and to provide chemical analyses of some of the rocks. The area includes about 12 square miles, and the complex series of rocks resembles the Cortlandt series of New York. The field work will require about 10 weeks. $475.

Robert T. Hill, Dallas, Texas, will continue his studies of the history of geology in the Southwest. Dr. Hill's popular articles on the Southwest are appearing currently in the *Dallas News,* and he is completing two volumes of more technical character. $1,800.

Bailey Willis, Stanford University, will undertake the revision of the geological map of North America, estimated to cost $7,500. The American Philosophical Society is cooperating with a grant of $1,000, and it is expected that other organizations will support the project. Mr. George W. Stose, of the United States Geological Survey, who collaborated with Professor Willis in preparing the existing map (1911 edition), will edit the revision and direct the drafting. Much new information has become available in the past 30 years in the United States, Canada, Mexico, the West Indies and adjacent parts of Central and South America. This will be classified and assembled in preparing an up-to-date map of the continent. $3,750.

Chester R. Longwell, Yale University, is directing the drafting of the tectonic map of the United States. A great many geologists have been cooperating with the Committee on Tectonics of the National Research Council, Division of Geology and Geography, in plotting the data available in different sections of the country. The American Association of Petroleum Geologists contributed a grant of $300 for drafting, and the Geological Society cooperates to make possible the final drafting of the first assembly of the sectional maps. $175.

SPECIAL ARTICLES

THE POSSIBLE IDENTITY OF VITAMIN H WITH BIOTIN AND COENZYME R

DURING work on the chemistry of vitamin H, the curative factor for egg-white injury, it became apparent that the properties of this vitamin were remarkably similar to those given in the literature for biotin, a yeast-growth factor, and for coenzyme R, a growth and respiration factor for many strains of the legume nodule organism Rhizobium.[1] The similarity in properties of biotin and coenzyme R has been pointed out during the past year by two independent

[1] F. E. Allison, S. R. Hoover and D. Burk, SCIENCE, 78: 217, 1933.