the laws of survival of tissue grafts or with individual differentials, and certainly to all immunologists.

The high standard of production of this book is complimentary to the publisher and editors, and much of its contents to research men in this country. Among the latter E. C. MacDowell and associates of the Carnegie Institute deserve special mention for their large share in recent contributions.

JACOB FURTH
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SOCIETIES AND MEETINGS

THE AMERICAN DIABETES ASSOCIATION

THE American Diabetes Association, a new organization founded in 1940, held its first annual meeting in Cleveland on June 1, 1941, the official family including Honorary President Elliott P. Joslin, President Cecil Striker, First Vice-President Herman O. Mosenthal and others prominent in the field of diabetes. Active members are physicians, but all interested in the aims of the association are eligible for election as associate members. It is dedicated to the problems of the diabetic, medical, social and economic, and aims to elevate standards of medical treatment by dissemination of the knowledge of diabetes, coordination of activities of associated groups, collection and publication of statistical data and encouragement of research in all phases of the subject. A volume has been issued containing the proceedings of the meeting.

This volume includes a secretarial report by Samuel S. Altshuler, Detroit; a presidential address by Cecil Striker, Cincinnati; "Sir Frederick Banting," by C. H. Best, Toronto (reprinted from SCIENCE, 93: 243, 1941); an address by Elliott P. Joslin, Boston, "Diabetes Yesterday, Today and Tomorrow"; and papers on "The Prevention of Diabetes," by R. E. Haist and C. H. Best, Toronto; "The Etiology of Diabetic Acidosis," by Arthur Mirsky, Cincinnati; "Comments on Nutritional Requirements," by Russell M. Wilder, Rochester, Minnesota; "Standards of Diabetic Therapy," by Herman O. Mosenthal, New York City, and "Avoidance of Degenerative Lesions in Diabetes Mellitus," by Julian D. Boyd, Robert L. Jackson and James H. Allen, Iowa City.

Haist and Best report that degenerative lesions of the pancreatic islets and the resultant diabetes which occur in dogs during administrations of sufficient doses of pituitary extract (Houssay-Young) can be prevented by diets low in carbohydrate and high in fat with supplementary insulin administration and suggest trial of the method in incipient human diabetes. Wilder draws attention to conclusions of the Committee on Food and Nutrition of the National Research Council as to vitamin requirements of normal diets and suggests that they be considered in prescribing diets for diabetics. Mirsky reviews the history of the conception that ketosis in diabetes depends on a limitation of glucose oxidation, contending that it depends rather on a limitation of storage as glycogen in the liver. Mosenthal asks for a revision of the doctrine that any elevation of the blood sugar concentration above the norm is necessarily to be combatted in all types and degrees of diabetes, and brings evidence to show that it is better ignored in some situations. Boyd, Jackson and Allen support the proposition that degenerative sequelae of diabetes (cataracts, arteriosclerosis, etc.) are late results of inadequate control of the diabetes, a view not shared by many writers. The discussion of all papers which are exceptionally full and illuminating lead to a harmonization of a number of erstwhile variant views.

R. T. WOODYATT
CHICAGO

REPORTS

PROJECT GRANTS OF THE GEOLOGICAL SOCIETY OF AMERICA

THE Council of the Geological Society of America has authorized the following project grants:

General Structure, Geomorphology and Stratigraphy—$2,950.

F. J. Pettijohn, University of Chicago, will spend six weeks in a detailed study of the Huronian-Archean contact in the Menominee and Calumet districts of Michigan. Preliminary study of basal conglomerates has proven the pre-Huronian age of the granite northeast of the Menominee. It is proposed to extend this work into the Calumet district, where post-Huronian granites are reported, in order to differentiate the two granites. $200.

Lowell R. Laudon, University of Kansas, will complete a five-year study of the stratigraphy of the Mississippian of New Mexico. The contribution to the stratigraphy and geologic history of New Mexico will also make possible a comparison with the Mississippian of the upper Mississippi Valley and the Rocky Mountain province. $250.

Paul A. Siple, United States Antarctic Service, Miami University, Ohio, will construct several large-scale maps of the Bay of Whales region of Ross Shelf Ice, Antarctica, from oblique photographs taken by the Byrd Antarctic Expeditions of 1929 and 1934 and the United States Antarctic Service in 1940. The maps will serve as a basis for determining quantitative deformation of the ice, and model theory suggests that further detailed studies will

contribute to understanding tectonic features of the earth's crust. $1,500.

H. E. Wood, 2nd, University of Newark, as chairman of a committee of the Society of Vertebrate Paleontology, will select copy for and supervise preparation of a series of colored plates representing important type localities or significant described sections to accompany a paper on the Continental Tertiary of the Rocky Mountains and High Plains. The project will provide a test of the value of colored plates as a tool for the use of stratigraphers. $1,000.

Paleontology—$1,135.

Claude W. Hibbard, University of Kansas, will collect Pliocene and Pleistocene vertebrate fossils from unconsolidated gravels in Clark County, southwestern Kansas, in extension of six seasons of field work in adjacent counties. The gravels of fossiliferous beds are put through screens of proper size to recover small fragments and teeth. The work to date has produced four new High Plains Pliocene and Pleistocene vertebrate fossils, descriptions of which have been published. $450.

M. K. Elias, State Geological Survey of Nebraska, will spend six weeks in central Colorado collecting the Walchia flora from lower Pennsylvanian rocks. Walchia was formerly regarded as a Permian plant, and the beds that Elias will study are the oldest conifer-bearing beds known. $325.

Robert G. Chaffee, Academy of Natural Sciences, Philadelphia, will set up an inter-museum card catalogue of vertebrate paleontolgical specimens of North America. $360.

Geophysics—$4,700.

N. B. Keevil, Department of Physics, University of Toronto, will study the distribution of radiogenic heat in North American granitic rocks. Radioactivity measurements are made, and a rapid method of requisite accuracy is being developed from previous work upon 1,000 rocks. Representative specimens will be obtained from geological surveys, universities, museums and mining companies. The project will provide a reliable average value for the rate of production of radioactive heat in North American granitic rocks and determine the extent of regional geothermal anomalies on this continent. $2,500.

G. P. Woollard, Princeton, New Jersey, will continue his investigation of the subsurface geological conditions along the eastern seaboard by a magnetic and gravitational survey. The survey to date has extended from New England to Washington and will now be extended to Florida. Reports on the transcontinental survey in 1940 and the more detailed examination along the northeastern seaboard in 1941 are in hand for early publication. $2,200.

Economic Geology—$400.

John S. Brown, Balmat, New York, will study the relation of porosity to ore deposition in the metamorphosed Grenville limestone of St. Lawrence County, New York. Porosities of diamond drill cores have been determined, and Dr. Brown will now carry out a thin-section study of the same cores to determine the size of openings. A preliminary report has been published in Technical Paper 1194, American Institute of Mining and Metallurgical Engineers, "Factors of Composition and Porosity in Lead-Zinc Replacements of Metamorphosed Limestone." $400.

Glacial Geology—$140.

Chauncey D. Holmes, University of Missouri, will make a detailed study of glacial transport and progressive changes in the shape of tillstones of known origin in west-central New York. The region is especially favorable for the study because the glacial ice moved at right angles to the strike of lithologically distinctive formations. The study was begun in 1937, and two papers have been published, one in the *American Journal of Science* and one in the *Bulletin of The Geological Society of America.* $140.

SPECIAL ARTICLES

THE "SULFANILAMIDE EFFECT" OF SUBSTANCES DEVOID OF SULFO GROUPS

SULFANILAMIDE and its derivatives reduce *in vitro* the speed of bacterial growth; complete bacteriostasis is attained as the maximal effect.[1] The effect of sulfanilamides is inhibited by p-aminobenzoic acid.[2] The efficiency of sulfanilamides is explained by their structural similarity to p-aminobenzoic acid; they displace this "essential metabolite"[3] or "growth factor"[4,5] from its enzyme's surface. The competition of essential metabolites of the carbonic acid type with analogous sulfonic acid compounds has been demonstrated by McIlwain, applying nicotinic acid amide ⇆ pyridin-3-sulfonic acid amide[6] and α-amino acids ⇆ α-amino sulfonic acids,[7] further by Kuhn, Wieland and Möller[8] with pantothenic acid ⇆ sulfopantothenic acid. The following two observations demonstrate that analogous substances devoid of sulfo groups are also able to displace p-aminobenzoic acid.

[1] J. Hirsch, in press.
[2] D. D. Woods, *Brit. Jour. Exp. Path.*, 21: 74, 1940.
[3] P. Fildes, *Lancet*, 1: 955, 1940.
[4] S. D. Rubbo and J. M. Gillespie, *Nature*, 146: 838, 1940.
[5] R. Kuhn and K. Schwarz, *Ber. Deuts. Chem. Ges.*, 74: 1617, 1941.

(1) THE ANTIBACTERIAL EFFECT OF P-AMINOBENZAMIDE AND ITS INHIBITION BY P-AMINOBENZOIC ACID

Material for inoculation: 24 hours culture of *B. coli*

[6] H. McIlwain, *Brit. Jour. Exp. Path.*, 21: 136, 1940.
[7] H. McIlwain, *ibid.*, 22: 148, 1941.
[8] R. Kuhn, Th. Wieland and E. F. Möller, *Ber. Deuts. Chem. Ges.*, 74: 1605, 1941.