

THE IOWA ACADEMY OF SCIENCE

THE forty-first annual meeting of the Iowa Academy of Science was held with the State University of Iowa, at Iowa City on May 6 and 7, 1927, with 253 members and visitors in registered attendance.

Special features of the general meeting were: the president's address, "The Evolution of an Idea," by Dean C. E. Seashore, in which he traced the idea that a specific trait can be measured quantitatively; "New Interpretations of Glacial Deposits in Iowa," by Dean George F. Kay, dealing with the present status of the Iowan drift problem; "The Rise of Sap in Plants," by Professor A. L. Bakke; and the annual Friday evening lecture by Professor E. C. Stakman of the University of Minnesota on "Racial Specialization of Pathogenic Fungi."

The reports of the standing committees on conservation and publicity in high schools concerning research careers in science were especially timely and thorough.

President D. W. Morehouse, of Drake University, was awarded a grant from the Academy Research Fund¹ of \$200, or as much thereof as may be necessary, for the investigation of a nebula (dark) in Cygnus.

The officers and section chairmen for the forthcoming year are as follows:

Officers

President—L. D. Weld, Cedar Rapids.

Vice-president—G. F. Kay, Iowa City.

Secretary—P. S. Helmick, Des Moines.

Treasurer—A. O. Thomas, Iowa City.

Editor—G. H. Coleman, Iowa City.

American Association for the Advancement of Science Representatives—D. W. Morehouse, Des Moines; and C. E. Seashore, Iowa City.

Section Chairmen

Bacteriology—C. H. Werkman, Ames.

Botany—R. A. French, Dubuque.

Chemistry—N. O. Taylor, Iowa City.

Geology—F. A. Wilder, Grinnell.

Mathematics—Roscoe Woods, Iowa City.

Physics—J. A. Eldridge, Iowa City.

Psychology—J. E. Evans, Ames.

Zoology—H. W. Norris, Grinnell.

The Academy convened in nine different sections for the presentation of 178 papers of special interest. Reports from these special sections, prepared by the retiring section chairmen, follow:

¹ This fund is made possible by the American Association for the Advancement of Science refund of 50 cents for each Iowa Academy-American Association for the Advancement of Science member.

BACTERIOLOGY

(By Jack J. Hinman, Jr., Iowa City)

The address of the retiring section chairman concerned the development of our present ideas for the measurement of the quality of water. The outstanding paper of the session was probably that by Dean R. L. Buchanan, of Ames, entitled, "Common errors in the application of physico-chemical concepts to the physiology of bacteria." Other important discussions were on the bacterial blackening of canned vegetables by C. H. Werkman and Helen J. Weaver; the germicidal efficiency of alkaline washes used in cleaning beverage bottles by Max Levine, J. H. Buchanan, Grace Lease and E. E. Peterson; and on soil bacteriology by L. W. Erdman, R. H. Walker and Harry Humfield. Medical phases of work were the subjects of papers by C. S. Linton who discussed the detection of trichina, and by H. D. Palmer who described two cases of mycotic infection which had come under his observation.

BOTANY

(By G. W. Wilson, Fayette)

The program of the botanical section was varied and of exceptional interest. Castetter continued his reports on the germination of cucurbit pollen, Bakke compared inhibition in sweet and field corn, and the synthesis of amino acids in plants was presented by Loehwing. Wylie continued his studies on cicitarization of leaves, and leaf fall in *Populus* was studied by Marts.

Ecological papers were presented by Pammel, Shimek and Miss Hayden; Miss Blagg gave a preliminary list of Mosses of Iowa, Prescott a similar list of Algae; and Martin presented studies on various fungi.

CHEMISTRY—INORGANIC AND PHYSICAL

(By Jacob Cornog, Iowa City)

The most novel research among the thirty reported at the Inorganic and Physical Chemistry Section was by Poulter and Frazer. In this investigation they allowed zinc to come in contact with sulphuric acid under a pressure of 16,000 atmospheres and obtained hydrogen sulphide as one of the end products.

ORGANIC CHEMISTRY

(By Henry Gilman, Ames)

G. H. Coleman and D. Craig obtained nitrogen, ammonium chloride, benzalacetophenone dichloride and a C-chloro-N-di-chloroamino ketone from the reaction between nitrogen trichloride with benzalace-

tophenone. G. H. Coleman and C. R. Houser obtained primary amines in yields up to 90 per cent. (with benzylmagnesium chloride) in the reaction between monochloramine and Grignard reagents. L. C. Raiford and W. C. Stoesser prepared the 2- and 6-monobromo and 2, 5- and 5, 6-dibromo vanillins and investigated their chemical behavior. L. C. Raiford and G. Thiessen reported on the effect of substituents in the formation and the reactions of certain ethers, particularly diphenyl ether. H. Gilman and J. Robinson have prepared a number of organo-lead compounds that are being tested in connection with cancer, anti-knock compounds and in some plant diseases. H. Gilman, J. E. Kirby, R. E. Fothergill and S. A. Harris reported on some abnormal reactions of organomagnesium halides, particularly benzyl-, cinnamyl- and related organomagnesium halides, and the unique reactions of nitro compounds, like o-nitro-benzaldehyde, towards the Grignard reagent.

GEOLOGY

(By A. C. Tester, Iowa City)

Eighteen papers were presented by thirteen different members of the Geology section. Two new ideas, outstanding in their general interest, were suggested. W. H. Norton presented evidence derived from a study of well cuttings which indicates that a gypsiferous, saline series of Silurian age underlies much of southern and western Iowa. Those beds occupy the same relative position as the Niagaran dolomites which outcrop in northeastern Iowa. A. C. Tester believes the late Comanchean seas covered western Iowa, for much fossil material of a friable nature has been found in the glacial drift and certain stratigraphic evidences warrant this conclusion.

MATHEMATICS

(By J. F. Reilly, Iowa City, Secretary)

The sixteenth regular meeting of the Iowa section of the Mathematical Association of America was held in conjunction with the annual meeting of the Iowa Academy of Science at Iowa City on May 6 and 7. The attendance was forty. A program of nine papers was presented, and in addition two addresses, one by the retiring chairman, Professor J. V. McKelvey, Iowa State College, on "Discontinuities and Prerequisites," the other by Professor Dunham Jackson University of Minnesota, on "Trigonometric Interpolation." Professor Jackson was present by invitation. Officers in addition to the section chairman were elected for the coming year as follows: *Vice-chairman*, Professor E. E. Moots, Cornell College; *secretary*, Professor J. F. Reilly, University of Iowa.

PHYSICS

(By M. E. Graber, Sioux City)

The attendance at the Physics section was unusually large, and some 28 papers were presented, covering special fields of pure physics, and the pedagogy of the subject. The physics section dinner was well attended, and immediately following this an interesting address on "The Applications of Ultra-Violet Light" was given by Professor J. W. Woodrow, of Ames. The report of the Committee on Research was presented by Professor G. W. Stewart, of the University of Iowa.

PSYCHOLOGY

(By C. A. Ruckmick, Iowa City)

The Psychology section was attended by about thirty-five psychologists of the state and by about an equal number of visitors outside of this group. Seventeen papers were read centering on the following problems: pitch perception in singing and speaking; pitch perception of beating intertones; the vocal mechanism; sound localization; description and objective record of emotions; visual "punning" in relation to *Gestalt*; visual perception of distance among young children; the optimal tempo in the rhythms of walking, running and skipping; muscular tonus of stutterers; psycho-physiological measurements of college athletes; a rating scale for the social behavior in young children; aptitude tests for college physics; the improvement of teaching psychology in elementary classes; and the study habits of college students. There was considerable discussion of most of these papers.

ZOOLOGY

(By L. S. Ross, Des Moines)

Twenty-eight papers, of which a few were read by title, were presented before the Zoology section. Of these, twelve were on physiological subjects; anatomy and entomology had four titles each; ecology and protozoology three each; and ornithology and pathology one each. One fact presented that was a surprise to the members is that bank swallows may have a variation of sixteen or eighteen degrees F. in temperatures, the nestlings varying even to a greater extent. Another paper directed attention to an error that appears in certain laboratory manuals relative to the innervation of the ampullae of Lorenzini of the spiny dogfish. On the whole the meeting of the section was as interesting as any in recent years.

P. S. HELMICK,
Secretary.