

## THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

### THE REGULAR SPRING MEETING OF THE EXECUTIVE COMMITTEE

THE executive committee of the American Association held its regular spring meeting at the Cosmos Club in Washington on Sunday, April 27, with the following members present: Cattell, Compton, Curtiss, Hildebrand, Kellogg, Lillie, Livingston, Millikan, Morgan, Wilson. There were two sessions, one in the forenoon and the other in the afternoon. The following items of business were transacted.

1. The minutes of the last meeting of the committee were reported as having been approved by mail.

2. The permanent secretary presented a report on association affairs. The new fellowship-nomination plan, adopted at the Des Moines meeting, has been put into operation. While it may need some slight modifications, it appears to work very satisfactorily, and from now on there should be very few members eligible to fellowship who do not receive nomination. In this connection fellows are reminded that any member may be nominated for fellowship by any three fellows. Blanks for such special nominations may be had from the Washington office.

About 7,000 invitations have been sent out since the Des Moines meeting, inviting non-members to become enrolled in the association. It is planned to send out about 15,000 invitations this spring, especially to engineers, and about 50,000 invitations are to be sent out next October.

A new booklet on the organization and work of the association has been prepared, also a brief circular. These may be had on request directed to the Washington office. The new booklet contains lists of members of the several section committees.

Preparations for the Cleveland meeting next winter are well advanced. The Hotel Statler has been named general-headquarters hotel for the meeting. The Cleveland Convention Bureau and the educational institutions of Cleveland are actively engaged on the preliminary arrangements. The American Statistical Association, the American Sociological Society, the American Economic Association and the American Political Science Association all report that they will meet at Cleveland in convocation week. Most of the organizations that usually meet with the association will be meeting with it at Cleveland.

3. The Texas Academy of Science was elected to be an affiliated academy.

4. To fill a vacancy in the section committee of Section D (Astronomy), caused by the recent death of Dr. Ralph H. Curtiss, the executive committee elected

Dr. H. T. Stetson, of Perkins Observatory, Delaware, Ohio, to be a member of that section committee, his term of office to expire at the end of the calendar year 1930.

5. The executive committee accepted a report that "Symbols for Heat and Thermodynamics" and "Graphical Symbols for Use in Radio Communication" had been approved for the association by its special committee acting in cooperation with the American Standards Committee. Dr. A. E. Kennelly is chairman of the special committee of the association.

6. The sum of \$500 was appropriated, from the available funds of the treasury, for the cooperative project of the committee on the place of science in education (Dr. Otis W. Caldwell, *chairman*). This appropriation is to be added to the funds already raised by the committee on the place of science, to be disbursed by the permanent secretary on order of Dr. Caldwell.

7. On recommendation of the executive committee of the Pacific Division, the description of the territory of that division was modified to read as follows: "The Pacific Division (organized in 1915) includes members resident in Alaska, British Columbia, Washington, Oregon, California, Idaho, Nevada, Utah and the Hawaiian Islands." This constitutes an amendment to Article VI, Section 2, of the By-Laws and Rules of Procedure. Mexico, the Philippine Islands and other islands of the Pacific were included in the territory of the division and these regions are now removed.

8. It was voted that Dr. Carl Alsberg be asked to serve on the executive committee in the place of Dr. Joel H. Hildebrand during the latter's absence from the country.

9. A special committee was appointed to consider the relations between the natural sciences and the social and economic sciences in the Pacific region. This committee consists of Carl Alsberg (*chairman*), Arnold B. Hall, A. O. Leuschner, Charles B. Lipman and E. G. Martin.

10. The rules for the award of the American Association prize of \$1,000 were modified by the following amendment: The award is to be first announced in connection with the meeting following the one at which the paper appeared on the program and the subject of the paper is to be specially presented in a public lecture at that meeting.

11. The rules for the award of the American Association prize were amended as follows: Papers by invited speakers and presidential and vice-presidential addresses are not eligible for the prize.

12. It was voted that the summer meeting of the association for 1931 shall be held at Pasadena, probably in the third week of June, the hosts for the meeting being the California Institute of Technology, the Mount Wilson Observatory and the Huntington Library.

13. It was voted that the winter meeting of 1931-32 shall be held at New Orleans from Monday, December 28, 1931, to Saturday, January 2, 1932.

14. It was voted that the association looks with favor upon New Haven as the place of the summer meeting of 1932 and upon San Francisco as the place of the summer meeting of 1934.

15. The general plan for radio talks to be given from time to time under the auspices of the Association Press Service was approved, as presented by the director of the Press Service.

16. In response to a suggestion from the director of the Press Service, Austin H. Clark, a special committee was named to consider the relations of the approaching New Orleans meeting to Latin America and to present plans for that aspect of the meeting. This special committee consists of Austin H. Clark (*chairman*), A. V. Kidder and Burton E. Livingston. It was empowered to add to its membership if additions seem desirable and was asked to present a report to the executive committee at its fall meeting, next October.

17. President Thomas H. Morgan was appointed to be the official representative of the American Association at the approaching semi-centennial of the University of Southern California, June 4 to 6, 1930.

18. Dr. Vernon Kellogg was appointed to be the official representative of the American Association at the tenth session of the Centenary of the Independence of Belgium, to be held at Brussels from June 28 to July 2, 1930.

19. A special committee, consisting of Austin H. Clark (*chairman*), Dayton C. Miller and Burton E. Livingston, was named to arrange for general and popular lectures for the approaching Cleveland meeting.

20. The appointment of Dr. H. W. Mountcastle as executive secretary of the Cleveland local committees was approved by the executive committee.

21. The permanent secretary asked that he be released from that office at as early a date as might be practicable, stating that he desired to devote more time and attention to his own field of plant physiology than would be possible in connection with his association duties, and a special committee, consisting of J. McK. Cattell, Edwin B. Wilson and Burton E. Livingston, was appointed to study the general administration of the association with respect to the retirement of the present permanent secretary and to report to the executive committee at its next meeting.

22. It was voted that the next meeting of the executive committee would occur at Washington on October 19, 1930.

BURTON E. LIVINGSTON,  
*Permanent Secretary*

## SPECIAL ARTICLES

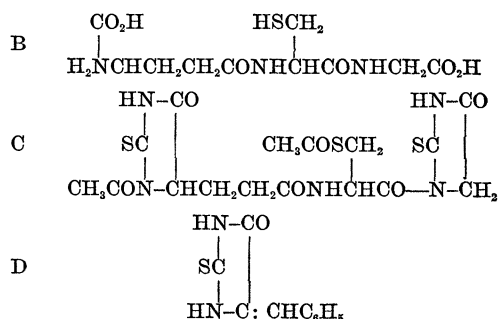
### THE STRUCTURE OF GLUTATHIONE

RECENTLY, clear evidence has come from two independent sources<sup>1,2</sup> that glutathione is a tripeptide derived from glutamic acid, cysteine and glycine. Twelve such dipeptides are possible. Six of these are eliminated by the fact<sup>3,2</sup> that the free amino group is that of glutamic acid.

The fact that Hopkins<sup>1</sup> obtained glycylcysteine anhydride by boiling glutathione with water is extremely strong evidence that glycine and cysteine are directly linked, and this consideration eliminates the two structures<sup>4</sup> in which both carboxyl groups of glutamic acid are involved. A study of the products obtained on oxidation with hydrogen peroxide<sup>3,2</sup>

strongly suggests that it is the  $\gamma$ -carboxyl of glutamic acid which is concerned in peptide formation. Thus glutathione is a peptide of unique type and must apparently be either (A)  $\gamma$ -glutamylglycylcysteine or (B)  $\gamma$ -glutamylcysteylglycine.

The proof that the substance is correctly represented by formula B has now been obtained by its condensation with ammonium thiocyanate in acetic anhydride, which yields a product (C), nearly insoluble in water, containing two thiohydantoin rings.



<sup>1</sup> F. G. Hopkins, *J. Biol. Chem.*, 84: 269-320, 1929.

<sup>2</sup> Kendall, McKenzie and Mason, *J. Biol. Chem.*, 84: 657-74, 1929.

<sup>3</sup> Quastel, Stewart and Tunnicliffe, *Biochem. J.*, 17: 586-92, 1923.

<sup>4</sup> Kendall's tentative choice (footnote 2) of one of these structures was made before this evidence was published.