

that salvation of international democracy of science and of its objective lies in a world-wide organization. Energy put into such an organization is probably desirable if those contributing this energy do not use it all up in world-wide organization. I believe that a much larger amount of energy put into national organization would be justified, both here and in Great Britain, the only two remaining strongholds of democracy. If these strongholds can be fortified and main-

tained, there will be rallying places that will ultimately be the means of saving science. Charging out into the enemy's country when our own fortresses are being weakened, I believe is not the most satisfactory solution of the difficulty. By putting and keeping our own house in order, I believe that most can be accomplished for our foreign brethren.

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## THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

### MEETING OF THE EXECUTIVE COMMITTEE

At the autumn meeting of the Executive Committee, held in Washington, D. C., on October 30 and 31, Drs. Cattell (*chairman*), Birkhoff, Caldwell, Chamberlin, Compton, Conklin, Livingston, McKinley, Moulton and Ward were present. A great deal of time was given to considering such matters of general policy as changing emphasis in the aims of the association and the character of its meetings, methods of extending its membership and influence, the promotion of broad symposia, the function of branches of the association and the use of the radio. Although these discussions did not crystallize into final form for recommendations to the council, they contained the promise of possible important developments in the work of the association.

### MEMBERSHIP

At September 30, 1937, the total membership of the association was 18,303, of whom 744 were in arrears on their dues for one year and 490 for two years. During the fiscal year ended September 30, 1937, the membership of 528 persons lapsed for non-payment of dues, 355 members resigned from the association, and 198 members died. During the same period 35 members were reinstated and 1,107 new members were elected. Thirty-nine members became life members upon the payment by each of them of \$100 to the association. The office of the permanent secretary sent out 37,754 letters for the purpose of obtaining new members. Heretofore all memberships of the association began as of October 1; henceforth, by vote of the executive committee, they may begin as of the first of any month.

### FINANCIAL

Although the financial reports of the permanent secretary and the treasurer of the association are subject to audit, certain provisional figures may be presented now. The total income of the office of the permanent secretary for the fiscal year October 1, 1936, to September 30, 1937, was \$86,541.86. The

total expenses of the office of the permanent secretary were \$84,647.99, of which \$52,083.49 was for subscriptions for journals for members (including foreign postage), leaving a net balance of income over expenses of \$1,893.87, or about 2.2 per cent. of the total income. The net expense of the Atlantic City meeting was \$1,133.59, and of the Denver meeting, \$3,763.95. The net profit to the association of the scientific exhibit at Atlantic City was \$1,817.68.

The treasurer of the association reported cash receipts from all sources of \$20,447.66 and total cash disbursements of \$16,650.39. The cash balance of the treasurer at the beginning of the fiscal year was \$15,524.43 and at the close of the year was \$19,321.71. The treasurer reported that total assets of the association at the close of the fiscal year amounted to \$271,087.07, of which \$19,321.71 was in cash and the remainder in securities and mortgages. Of the latter, \$108,836.45 was in endowment funds for promotion of scientific research.

The budgets of the office of the permanent secretary and of the treasurer were referred to the council with the approval of the executive committee. The executive committee appropriated to the Committee on Grants the sum of \$2,000 for allotments in aid of research, and enough from the funds available for the purpose to make allotments for research through the state academies of science in accordance with methods heretofore in use.

### ITEMS RELATING TO FUTURE MEETINGS

*Indianapolis Meeting:* The problem of the nomination of fellows of the association was referred to the Secretaries' Conference for consideration. The permanent secretary was authorized to have printed complimentary tickets for admittance to the general sessions of the association and to the exhibits. The appointment of the prize committee was placed in the hands of Professor F. K. Richtmyer (*chairman*) and the permanent secretary. It was voted that a suitable diploma be provided to accompany the \$1,000 prize.

*Ottawa Meeting:* Dr. Ward was appointed to repre-

sent the officers of the association in working out with the Ecological Society of America a symposium for the Ottawa meeting. Other suggestions for cooperating with Canadian scientists for the purpose of developing a strong program were approved.

*Richmond Meeting:* Dr. McKinley presented the plans developed by Dr. Walter L. Treadway, Assistant Surgeon General of the U. S. Public Health Service, for a symposium on mental health. The executive committee approved the plans and invited Dr. Treadway to organize and take charge of the symposium, with the assistance in administrative details of the secretary of the Section on Medical Sciences.

*Milwaukee Meeting:* The dates set for the Milwaukee meeting were June 19 to 24, 1939.

#### MISCELLANEOUS REPORTS

Dr. Harvey Fletcher, who was the representative of the association at the Nottingham meeting of the British Association for the Advancement of Science, sent in an interesting report on the methods of our English cousins of conducting general scientific meetings. He commented particularly and approvingly of the interesting general addresses and the enjoyable social functions. Dr. Caldwell presented a report by Dr. Harry A. Carpenter, who represented the association at the Tokio, Japan, Conference of the Science Section of the World Education Federation. Dr. Caldwell was directed to express to Dr. Carpenter the appreciation of the executive committee for representing the association at the Tokio meeting. Dr. Caldwell made a report on plans for weekly broadcasts on science under the auspices of the association, and the permanent secretary was authorized to attempt to put the plans into effect. Dr. Caldwell reported on the Indianapolis program of the American Science Teachers Association and also on the formation of branches of the association. A report from Dr. Gregory D. Walcott, chairman of the Committee on Source Books, was presented; the permanent secretary was directed to express to the committee the association's appreciation of the splendid progress made.

#### APPOINTMENTS OF REPRESENTATIVES

Dr. Ward was appointed the representative of the association in any group discussions pertaining to the Rocky Mountain Tunnel Project. Dr. Malcolm H. Soule was appointed the representative of the association at the Third International Congress for Microbiology, to be held in New York City in the summer of 1939. Dr. Franz Boas was appointed the representative of the association at the International Congress of Anthropology and Ethnology, to be held in Copenhagen, Denmark, from August 1 to 6, 1938. Dr. Selskar M. Gunn and Dr. Reginald R. Gates, of the University of London, King's College, were appointed representatives of the association at the twenty-fifth session of the Indian Science Congress, to be held in Calcutta, India, from January 3 to 8, 1938.

#### MISCELLANEOUS ACTIONS

The executive committee voted that the inscription on the medal accompanying the Theobald Smith Award, the first of which is to be presented to Dr. Robley D. Evans at Indianapolis, shall be: "Awarded in (year) to" on the first line, with the name of the recipient immediately below. Following the report that the bibliography on "Conserving Our Natural Resources" is now ready for free distribution, the executive committee passed a vote of thanks and appreciation to Dr. Joseph Wheeler, Chairman of the Committee on Popular Science Reading Lists. Three fellows were elected upon recommendations of the Sections on Physics and Medical Sciences. The Association for Symbolic Logic, having 196 members, of whom 48 are members of the association and 32 are fellows, was admitted to the relationship of an affiliated society. The executive committee voted its appreciation to Dr. W. W. Campbell for his letter on general operations of the association, in which he expressed the opinion that two meetings per year are inadvisable and that the programs should have more general papers and fewer that are narrowly technical.

F. R. MOULTON,  
*Permanent Secretary*

## SPECIAL ARTICLES

### THE NATURE OF PAPAIN ACTIVATION

AMONG the enzymes that digest high molecular proteins and therefore are designated proteinases, the papainases distinguish themselves by the property of being activated in the presence of SH compounds or of HCN. This activation was considered for some time to be due to a reduction process.<sup>1</sup> Doubts regarding this interpretation arose when it was discovered that activated papain is capable of digesting simple

substances such as hippurylamide<sup>2</sup> and that this digestion can be activated and inhibited by processes which can scarcely be regarded as reductions and oxidations. Thus the hydrolysis of hippurylamide or of carbo-benzoylisoglutamine was inhibited by phenylhydrazine, while the digestion of albumin peptone was activated by the same reagent.<sup>3</sup> This contrasting

<sup>2</sup> M. Bergmann, L. Zervas and J. S. Fruton, *Jour. Biol. Chem.*, 111: 225, 1935.

<sup>3</sup> M. Bergmann and W. F. Ross, *Jour. Biol. Chem.*, 114: 717, 1936.

<sup>1</sup> T. Bersin, *Ergebnisse der Enzymforschung*, 4: 68, 1935.