

the book contains many references to papers published in 1940. For a first edition there are remarkably few errors, typographical or otherwise. The author has called to his aid several collaborators; A. G. Karlson to write the chapter on the genus *Erysipelothrix*, C. T. Rosenbusch on the *Pasteurella*, S. H. McNutt on the *Brucella*, and L. H. Schwarte on "Filterable Viruses and Virus Diseases." With only a few exceptions, the illustrations were taken from that excellent collection of photomicrographs of bacteria contained in Nowak's "Documenta Microbiologica."

The arrangement of the chapters is not unusual. After two parts devoted to general biology of microorganisms and principles of immunity which together make up twelve chapters, the remaining 28 chapters are devoted to descriptions of the organisms and viruses which are pathogenic for animals. The pathogenic protozoa have been omitted on the assumption that protozoa, in the veterinary curriculum, will be considered in the course in parasitology rather than in bacteriology. This is not the case, in some institutions at least, and the reviewer feels the book is incomplete in this respect.

The author has done his best work in the portions of the book devoted to the description of organisms. These are clearly and systematically presented, and a short list of references is given for each section so the more ambitious student may read more widely if he desires. The portion relating to general biology is

rather elementary, but the chapter on disinfection is better than is usually found in such text-books.

Students of veterinary medicine need a strong grounding in the bacteriology of milk and milk products, since many of them find themselves rather intricately involved in problems surrounding milk production and handling after graduation, and, for this reason, the reviewer misses a section devoted to this subject. In the crowded curriculum of veterinary schools to-day, there seldom is any opportunity for students to obtain much work in the bacteriology of milk, except in the course in pathogenic bacteriology. A chapter on this subject would, in the opinion of the reviewer, serve a much better purpose than the one on "Bacteriological Technics and Methods," which will be skipped by most teachers who are giving a laboratory course along with the lectures because it is inadequate as a laboratory guide and superfluous when one is used.

No two teachers have ever agreed on the exact content of any course or on how a course can best be given. Whereas the reviewer differs from the author in some respects on what he has selected and what he has left out of his book; nevertheless, it is his opinion that this text is well written, accurate and, of the group of shorter dissertations useful as student texts and brief reference, the best that we have in its field.

W. A. HAGAN

CORNELL UNIVERSITY

THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

A PROPOSED REVISION OF THE CONSTITUTION OF THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

FROM the time of its formation in 1848, the American Association for the Advancement of Science has been a democratic organization, directed and managed by a representative body under a published set of statements and rules.¹ The original "Objects and Rules of the Association" were amended and became its first constitution in 1851. A partial revision occurred in 1856 and some "constitutional troubles" were "finally disposed of" through the adoption of a new constitu-

tion in 1874, when the association was incorporated under the laws of the Commonwealth of Massachusetts. With occasional amendments to care for continual advance and improvement through experience, the constitution of 1874 remained in force for 46 years. Before 1887, the "standing committee" of the association controlled association affairs; through an amendment adopted in that year, the standing committee became the council, which has been the governing body since that time. By 1917 the constitution of 1874 had been rendered somewhat unsatisfactory because of the remarkable development of the association and its increasing activities. A special committee on constitution revision, consisting of J. McKeen Cattell (*chairman*), Herman L. Fairchild and Daniel T. MacDougal, began its studies in that year; on its recommendation the present constitution was adopted at the third St. Louis meeting two years later. With a few minor amendments, that constitution has been in force since January 3, 1920.

On December 30, 1939, feeling that a new revision of constitution and by-laws had again become desir-

¹ Much information on the history and development of the American Association may be found in the volumes of its Proceedings and Summarized Proceedings. Special reference should be made to Herman L. Fairchild's "History of the American Association for the Advancement of Science" (SCIENCE, 59: 365-369, 385-390, 410-415, 1924); to Austin H. Clark and Leila Forbes Clark's "Background and Origin of the American Association for the Advancement of Science" (Summarized Proc., 1929-1934: 15-30, 1934); and to F. R. Moulton's "Brief History of the Association" (Summarized Proc., 1934-40: 1-57, 1940).

able, the executive committee of the council appointed a special committee on constitution revision, consisting of B. E. Livingston (*chairman*), E. R. Long and F. R. Moulton. After prolonged study, with helpful criticism and suggestion from other members of the executive committee, the special committee presented a proposed new constitution on April 27, 1941. In accordance with action taken by the executive committee on that date, the proposed revision is now published for consideration by the members of the council and others. Suggestions for improvement are requested to be sent, before July 1, to Dr. F. R. Moulton, Permanent Secretary, A. A. A. S., Smithsonian Institution Building, Washington, D. C. The present constitution is reprinted here for comparison. All suggestions received will be duly considered by the special committee and the executive committee, and it is hoped that a final draft may be approved by the council and presented, as a proposed constitutional amendment, before a general session at the next annual meeting of the association, which will open on December 29, 1941, in Dallas, Texas. Article 11 of the present constitution provides that an amendment may be adopted by a unanimous vote at a general session or by a majority vote at two consecutive annual meetings.

The special committee has made a preliminary study of the present By-Laws and Rules of Procedure, which will naturally require revision when a new constitution becomes effective. Amendments to By-Laws and Rules may be adopted by vote of the council, without reference to a general session (By-Laws and Rules, Article XI), and a proposed revision of them is to be presented to the council at the Dallas meeting.

The proposed revision of the constitution and the constitution of 1920 follow:

BURTON E. LIVINGSTON
ESMOND R. LONG
FOREST R. MOULTON

*Special Committee of the Executive
Committee on the Revision of the
Constitution of the Association*

APRIL 27, 1941

PROPOSED REVISION OF THE CONSTITUTION

Published by order of the Executive Committee
of the Council

ARTICLE I—OBJECTS

The object of the Association is to advance science, as by promoting intercourse and cooperation among those who are interested in science, contributing to a general understanding and appreciation of the methods and objects of science, holding scientific meetings, publishing scientific journals, monographs and books, providing aid for scientific research, making awards for meritorious sci-

entific accomplishments, and cooperating with other scientific societies, institutions, and agencies.

ARTICLE II—MEMBERSHIP

Section 1. Any person, institution or organization desiring to support the objects of the Association may be elected to membership by the Council. The membership of the Association shall consist of members and fellows as follows: (a) annual members, (b) life members, (c) sustaining members, (d) honorary members, and (e) fellows.

Section 2. (a) Annual members. Annual members shall pay such annual dues as the Council shall determine.

(b) *Life members.* A person who pays to the Association at one time a life-membership fee of one hundred dollars may be elected a life member, exempt from the payment of dues. The Council may provide for the election of emeritus life members under such conditions as it shall determine. Life-membership fees shall be a part of the permanent funds of the Association.

(c) *Sustaining members.* A person who pays to the Association a sustaining-membership fee of one thousand dollars may be elected a sustaining member, exempt from the payment of dues. Sustaining-membership fees shall be a part of the permanent funds of the Association.

(d) *Honorary Members.* The Council may provide for the election of honorary members under such conditions as it shall determine.

(e) *Fellows.* A member who is professionally engaged in scientific work or has made a notable contribution to science may be elected by the Council to be a fellow. Election of a member as a fellow does not change his membership dues.

ARTICLE III—OFFICERS

Section 1. The officers of the Association shall consist of a President, a Vice President from each section who shall be Chairman of the Section, a Permanent Secretary, a General Secretary, a Treasurer, and a Secretary of each section, all of whom shall be elected by ballot from fellows of the Association by the Council at annual meetings of the Association. The term of office of the President and the Vice Presidents shall be one year; the term of office of other officers shall be four years. The officers shall perform the usual duties of their respective offices under the direction of the Council during their respective terms of office or until their successors shall have been elected.

Section 2. The Permanent Secretary, the Treasurer and such other officers as shall be designated by the Council shall be bonded at the expense of the Association for such amounts as the Council shall determine.

ARTICLE IV—COUNCIL

Section 1. The direction of the affairs of the Association, including the election of its officers, the control of its finances and publications, and the determination of its policies, shall be vested in the Council of the Association.

Section 2. The Council shall consist of (a) the President, the Vice Presidents, the Secretaries of the Sections,

the Permanent Secretary, the General Secretary, the Treasurer, the members of the Executive Committee, (b) one fellow elected by each Division of the Association, (c) one fellow elected by each affiliated Academy of Science, (d) two fellows elected by each affiliated society having more than 100 members who are fellows of the Association and one fellow elected by each affiliated society having not more than 100 members who are fellows of the Association, and (e) eight fellows, two elected each year by the Council for a term of four years. Twenty members of the Council shall constitute a quorum for the transaction of business.

Section 3. There shall be an Executive Committee of the Council which shall have power to act for the Council when the Council is not in session. The Executive Committee shall consist of twelve members: The President, the Retiring President, the Permanent Secretary, the General Secretary and eight fellows elected by the Council, two each year for a term of four years. A member of the Executive Committee shall not be eligible for reelection until one year shall have elapsed after he has served a full four-year term. A majority of the members of the Executive Committee shall constitute a quorum for the transaction of business.

Section 4. There shall be a Finance Committee consisting of the Permanent Secretary, the Treasurer and four other members elected by the Council, one each year for a term of four years, one of whom shall be elected by the Council as Chairman of the Finance Committee for the term of his office as a member of the Committee. The chairman shall be bonded at the expense of the Association for such amount as the Council shall determine. A majority of the Finance Committee shall constitute a quorum for the transaction of business.

ARTICLE V—SECTIONS

Section 1. The Association shall consist of the following sections: Mathematics (A), Physics (B), Chemistry (C), Astronomy (D), Geology and Geography (E), Zoological Sciences (F), Botanical Sciences (G), Anthropology (H), Psychology (I), Social and Economic Sciences (K), Historical and Philological Sciences (L), Engineering (M), Medical Sciences (N), Agriculture (O), Education (Q), and such other sections or subsections as the Council shall determine. Each member of the Association may designate the section or sections in which he wishes to be enrolled.

Section 2. Each Section shall have a Chairman who shall be elected by the Council on nomination by the Section Committee. Chairmen of the Sections shall be *ex officio* Vice Presidents of the Association. Each Section shall have a Secretary who shall be elected by the Council for a term of four years.

Section 3. Each section shall have a Section Committee consisting of (a) the Chairman and the Secretary of the Section; (b) four fellows of the Association, one elected each year by the Section for a term of four years; and (c) those Council representatives of affiliated societies and academies whose special fields lie in the general field of the Section.

Section 4. The Section Committee of each Section shall promote the objects of the Association in its own field; it shall prepare section programs for meetings of the Association either separately or in cooperation with other sections or societies; and, with the approval of the Council, it may organize an Executive Committee of the Section and other sub-committees.

ARTICLE VI—DIVISIONS AND BRANCHES

Section 1. Regional Divisions and Local Branches of the Association may be organized, by vote of the Council, for the purpose of promoting the objects of the Association in their respective territories.

Section 2. Each Regional Division or Local Branch shall elect its officers for such terms as it shall determine and shall hold meetings and conduct its affairs as it shall deem desirable, subject to the relevant provisions of this Constitution and of the By-Laws of the Association and to such special provisions as the Council of the Association shall establish.

ARTICLE VII—ASSOCIATED AND AFFILIATED SOCIETIES

Section 1. By vote of the Council a scientific society may be made an Associated Society or an Affiliated Society of the Association for the purpose of advancing more effectively the interests of science and of the society.

Section 2. Each affiliated society having not more than 100 members who are fellows of the Association and each affiliated academy shall be entitled to elect one fellow of the Association as its representative in the Council of the Association; each affiliated society having more than 100 members who are fellows of the Association shall be entitled to elect two fellows of the Association as its representatives in the Council of the Association. Associated societies shall not have representation in the Council of the Association.

ARTICLE VIII—MEETINGS

Section 1. The Association shall hold Annual Meetings at such times and places as the Council shall determine. Other meetings of the Association or of its sections may be held upon authorization by the Council.

ARTICLE IX—PUBLICATIONS

Section 1. Summarized Proceedings of the Association and directories of officers and members shall be published at such times and in such manner as the Council shall determine. By authorization of the Council the Association may publish journals, monographs and books.

ARTICLE X—FUNDS

Section 1. The Permanent Secretary shall collect the dues of members and other monies payable to the Association, except income on its permanent funds, and shall be custodian of these monies and shall make disbursements of them as the Council shall direct.

Section 2. The Treasurer shall be custodian of the permanent funds of the Association and other funds placed by the Council in his charge, under such conditions as the Council shall determine; shall collect income from

the funds in his charge and shall disburse monies as the Council shall direct; and shall administer bequests and gifts in accordance with the provisions of the donors. He shall sell such securities and properties of the Association, and he shall buy such securities and properties for the Association, with the permanent funds of the Association, as the Finance Committee shall direct by formal votes recorded in its minutes.

Section 3. The income from the membership fees of sustaining members and life members, while they are still living, may be appropriated by the Council for any purposes; after their deaths, the income from such funds shall be appropriated by the Council only for research.

ARTICLE XI—AMENDMENTS

Section 1. This Constitution may be amended at any general session of an annual meeting of the Association by a vote of nine-tenths of the members present, or by a majority vote of the members present at each of two general sessions held at consecutive annual meetings, provided that any proposed amendment shall have been published by the Association in its official journal not less than three months prior to its presentation for adoption.

THE PRESENT CONSTITUTION

In force since January 3, 1920*

ARTICLE 1—OBJECTS

The objects of the Association are to promote intercourse among those who are cultivating science in different parts of America, to cooperate with other scientific societies and institutions, to give a stronger and more general impulse and more systematic direction to scientific research, and to procure for the labors of scientific men increased facilities and a wider usefulness.

ARTICLE 2—MEMBERSHIP

Persons willing to cooperate in the work of the Association may be elected to be members by the Council. Members who are professionally engaged in scientific work or who have advanced science by research may be elected to be fellows. *The Council shall fix the admission fees and dues (Dec. 27, 1934).* A member who pays at one time the sum of one hundred dollars to the Association becomes a life member and is exempt from further dues. A person who gives one thousand dollars to the Association may be elected to be a sustaining member and is exempt from further dues.

ARTICLE 3—OFFICERS

The officers of the Association shall be elected by ballot by the Council, and shall consist of a President, a Vice President from each section, a Permanent Secretary, a General Secretary, a Treasurer and a Secretary of each Section. The President and the Vice Presidents shall be elected for one year, the other officers for four years. The officers shall perform the usual duties of these offices, under the direction of the Council.

* From Summarized Proceedings, 1934-40, pages 61, 62. Amendments adopted since 1920 are shown in italics, with dates of their adoption in parentheses.

ARTICLE 4—COUNCIL

The Council shall consist of the President, the Vice Presidents, the Permanent Secretary, the General Secretary, the Secretaries of the Sections, and the Treasurer, *the members of the Executive Committee, ex officio, if they are not otherwise members of the Council (Dec. 27, 1923),* of one fellow elected by each *division, affiliated state academy, and (Dec. 27, 1932) affiliated society,* and one additional fellow from each affiliated society having more than 100 members who are fellows of the Association, and of eight fellows, two elected annually by the Council for a term of four years. There shall be an Executive Committee of the Council, consisting of the President, the Permanent Secretary, the General Secretary and eight members elected by the Council, two annually for a term of four years, who shall be *ex officio* members of the Council. The Council may appoint standing or temporary committees to make reports, to assist in the conduct of the work of the Association and to promote its objects.

ARTICLE 5—SECTIONS

The Association shall be divided into the following Sections: A, Mathematics; B, Physics; C, Chemistry; D, Astronomy; E, Geology and Geography; F, Zoological Sciences; G, Botanical Sciences; H, Anthropology; I, Psychology; K, Social and Economic Sciences; L, Historical and Philological Sciences; M, Engineering; N, Medical Sciences; O, Agriculture; P, *Industrial Science (Dec. 28, 1936);* Q, Education. Members of the Association shall be members of that Section or of those Sections under which their work or their interests fall. Members of the Section shall nominate to the Council a Chairman, who becomes *ex officio* a Vice President of the Association and whose term of office shall be one year, and a Secretary, whose term of office shall be four years. These officers, together with four fellows, one elected annually by the Section for a term of four years, and the representatives on the Council of affiliated societies in the same field shall form a Sectional Committee. This Committee shall arrange the scientific programs of the meetings and may form sub-sections or hold joint meetings with other sections or other societies. It may appoint committees and shall in all ways promote the objects of the Association within its own field.

ARTICLE 6—DIVISIONS AND BRANCHES

Regional Divisions and Local Branches of the Association may be formed by vote of the Council. Such Divisions and Branches may elect officers, hold meetings, appoint committees, enter into relations with other societies and promote within their fields the objects of the Association.

ARTICLE 7—ASSOCIATED AND AFFILIATED SOCIETIES

National and local scientific societies may, by vote of the Council, become associated with the Association. Those Associated Societies which the Council shall designate as Affiliated Societies shall be represented on the Council and on the Sectional Committees as provided in Articles 4 and 5.

ARTICLE 8—MEETINGS

The Association shall hold an annual meeting at such time and place as may be determined by the Council. Other meetings of the Association and of the Sections may be authorized by the Council. The Divisions and the Branches may hold annual and other meetings.

ARTICLE 9—PROCEEDINGS

The proceedings of the Association and the list of officers and members shall be published in such manner as the Council may direct.

ARTICLE 10—FUNDS

The Permanent Secretary shall collect the annual dues and make expenditures as directed by the Council. The

Treasurer shall deposit or invest the permanent funds of the Association, as provided for trust funds by the laws of the state of Massachusetts or the state of New York. Bequests and gifts will be administered in accordance with the provisions of the donors. The payments from sustaining and life members form part of the permanent fund, and the income (after the death of the member) shall be used for research, unless otherwise directed by unanimous vote of the Council or by a majority vote at two consecutive annual meetings.

ARTICLE 11—ALTERATION OF THE CONSTITUTION

This Constitution may be amended at a general session by unanimous vote or by a majority vote at two consecutive annual meetings.

SPECIAL ARTICLES

FETAL ENCEPHALOMYELITIS: PRENATAL INCEPTION OF INFANTILE TOXOPLASMOSIS¹

HUMAN toxoplasmosis, first encountered as an encephalomyelitis in infants and verified by the experimental transmission of the infection to animals (Wolf, Cowen and Paige, 1939),^{2, 3, 4} has since been found to produce an encephalitis in older children (Sabin, 1941),⁵ and a predominantly pulmonary infection in adults (Pinkerton and Henderson, 1941),⁶ the organism again having been successfully isolated in each instance. Although toxoplasmosis is known to be widespread among rodents and birds, the manner in which man acquires the infection has not yet been discovered. From the first, however, it had been felt that the infantile form of the disease was congenital.^{3, 7, 8, 9, 10} The symptoms and signs began at birth or shortly thereafter. The chronic appearance of the pathological lesions, which were often extensively calcified, made it unlikely that they could have developed during the short extrauterine period. These findings suggested that the disease had begun as a fetal encephalomyelitis.^{3, 7}

The considerations which weighed against this assumption were: (1) the mothers were all apparently

healthy and some had had healthy children prior and subsequent to the birth of the infected child, (2) evidence of placental infection was lacking, and (3) evidence of the occurrence of adult human toxoplasmosis had not been furnished. The last objection is now overcome with the recent demonstration of adult toxoplasmosis.^{6, 11} The first inconsistency, the fact that the mothers seemed healthy, may mean, as has been suggested elsewhere, that they harbored a latent infection. The common occurrence in lower animals of such clinically inapparent toxoplasmic infestation would lend support to such a possibility. Placentas have not, as yet, been available in these human cases, except in one instance in which the poor state of preservation made it unsatisfactory for study.

The suspicion that this infantile encephalomyelitis begins before birth is not original with the authors. Three cases^{9, 10, 12} identified from the literature and reclassified as infantile toxoplasmic encephalomyelitis^{3, 7, 8} were considered by the original authors to be instances of congenital disease, although proof was lacking.

Information acquired from additional cases coming to autopsy in this institution and further experimental data, which will be reported in detail elsewhere,¹³ prove that infantile toxoplasmosis may begin as a fetal encephalomyelitis. One infant (B.R.) had given evidence of hydrocephalus *in utero*, necessitating cranioclasia for delivery. The child was born at term, was normally developed, except for the enlarged head, and was viable up to the time of delivery. The stillborn child on pathological examination presented an advanced toxoplasmic encephalomyelitis with extensive calcification of the lesions and an associated chorio-

¹¹ H. Pinkerton and D. Weinman, *Arch. Path.*, 30: 374, 1940.

¹² R. Richter, *Arch. Neurol. and Psychiat.*, 36: 1085, 1936.

¹³ B. H. Paige, D. Cowen and A. Wolf. In preparation.

¹ Supported in part by grants from Child Neurology Research (Friedsam Foundation) and the Matheson Commission.

² A. Wolf, D. Cowen and B. H. Paige, *SCIENCE*, 89: 226, 1939.

³ *Idem*, *Am. Jour. Path.*, 15: 657, 1939.

⁴ *Idem*, *Jour. Exp. Med.*, 71: 187, 1940.

⁵ A. B. Sabin, *Jour. Am. Med. Assoc.*, 116: 301, 1941.

⁶ H. Pinkerton and R. G. Henderson, *Jour. Am. Med. Assoc.*, 116: 807, 1941.

⁷ A. Wolf and D. Cowen, *Bull. Neurol. Inst. N. Y.*, 6: 306, 1937.

⁸ *Idem*, *Bull. Neurol. Inst. N. Y.*, 7: 266, 1938.

⁹ J. Janků, *Casopis lékařů českých*, 62: 1021, 1923.

¹⁰ C. M. Torres, *Compt. rend. Soc. Biol.*, 97: 1778, 1787, 1797, 1927.