(5) *Membranous sound production and transmission.* Improvement in the fidelity of sound production through telephonic and phonographic reproducers; reduction of inherent membraneous tones and noises; problem of sibilants and aspirates.

(6) *The acoustic qualities of confined areas.* Question of preventing leakage of sound through ventilating systems and wall-supports; reflecting and absorbing qualities of various building materials to be used from time to time; acoustic properties of halls, rooms, etc.; "sound-proof" rooms.

(7) *Auditory theory.* Further investigation of the human auditory mechanism and its pathology; intracranial conduction of sound; tonal gaps and "islands."

Specifically, then, it is the opinion of the writer that there exists in this field a threefold need:

I. There should be a closer affiliation of workers in acoustics. An association of those interested might be assembled under some such title as the American Acoustical Society.

II. A journal with this society as sponsor would become an outlet for the publication of papers on the general topics of acoustics.

III. If in the course of events progress is recorded, an endowment fund should be raised with perhaps industrial assistance for the purpose of erecting a central laboratory or institute where apparatus would become available for precise and intensive work. It would save the expense of multiplying elaborate research pieces in our various laboratories where they frequently lie idle for long periods of time. It might serve further for the exchange and loan of apparatus under a system of adequate guarantee against mishandling and breakage.

A number of our leading men working together at such an institute would not only lend zest to their own endeavors, but would offer a place for the training of younger men in the field. The institute would, moreover, provide for the industries that are concerned in the manufacture of acoustical apparatus a fund of information for their guidance and an attentive and trained "ear" for problems that arise in their practical work.

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PROPOSED FEDERATION OF AMERICAN BIOLOGICAL SOCIETIES

A CONFERENCE was held in Washington in April, 1922, at which a number of biological organizations were represented, to discuss plans for a federation of American biological societies. This meeting was held in pursuance of instructions given by the several societies at their annual meetings at Toronto and elsewhere in 1921. The Washington conference, after some debate, affirmed its belief in the desirability and feasibility of a federation of biological societies, and adopted a general plan in accordance with which such a federation might be established. An outline of this plan has already been published in this journal[1]. A committee was raised to work out the details of the plan and to prepare a constitution embodying these details.

This committee, which consisted of F. R. Lillie, C. W. Greene, I. F. Lewis, C. E. McClung, A. Franklin Shull, R. W. Thatcher, H. B. Ward, and B. E. Livingston representing the American Association, met in Woods Hole, Massachusetts, August 4 and 5, 1922. Professor Herbert Osborn substituted for Professor Livingston at this meeting.

For its own guidance, after some deliberation, the committee adopted certain fundamental principles upon which, in its opinion, any federation should be based. These principles are stated in the following resolution which was adopted by the committee.

Resolved, That it is the judgment of the society representatives considering the formation of a federation of biological societies that certain principles should be observed in setting up relations with existing organizations. These principles are:

1. The federation should, for its benefit, utilize other organizations in accordance with their nature and purposes.

2. The federation should, on the other hand, so direct its policies and methods as to strengthen the efforts of organizations with which it is affiliated.

3. The federation should avoid unnecessary duplication of effort and expenditure.

[1] SCIENCE, Vol. LVI, p. 184.

The concrete application of these principles in the development of a constitution was one of the principal tasks of the committee. How to use such organizations as the National Research Council and the American Association most effectively and in turn how to be of the greatest service to those organizations in the furtherance of the interests of biological science were problems that elicited much discussion. The committee believes that a satisfactory solution of these problems is contained in the constitution given below. This instrument will be submitted to the various societies for ratification or rejection at their annual meetings late in 1922, and it is important that all members of the biological societies which have been concerned in formulating plans of federation should become familiar with its provisions. The proposed constitution of the federation is as follows:

Proposed Constitution
for a
Federation of American Biological Societies

Article I. Preamble

In view of the existence of many biological societies in America, each preoccupied with its own special affairs and problems, in view of the assured interest of all these societies in the broader and more general aspects of the promotion of biological science, and especially in view of the need for improved means of contact and mutual aid between the pure and the applied branches of biological science, this Federation is established to facilitate constructive and mutually advantageous cooperation among the several special biological societies and to promote the major interests of biology.

Article II. Name

The name of this organization shall be the Federation of American Biological Societies.

Article III. Objects

The objects of the Federation shall be to stimulate investigation in the field of biology, to organize and promote the interests of bibliography and publication, to deal with questions of general interest in the field of biology, and in general to promote the solution of those broad problems which the specialized societies are not in a position to support effectively, and to do anything else which may serve these ends.

Article IV. Membership

Section 1. The membership of the Federation shall be by societies and not by individuals.

Section 2. The original members of the Federation shall be all those organizations that were concerned in the Preliminary Conference on Federation held in Washington, D. C., April 23, 1922, provided that each member society shall officially accept membership in the Federation.

Section 3. Any other organization working in the field of biology may become a member of the Federation upon invitation by the Council of the Federation and acceptance of membership.

Section 4. Any Society may terminate its membership in the Federation by official notification to the Council and completion of its obligations to the Federation.

Article V. Delimitation of Authority

The constituent societies of this Federation retain their complete autonomy.

Article VI. Council

Section 1. The management of the Federation shall be vested in a body to be known as the Council of the Federation of American Biological Societies. Each original member society shall be entitled to be represented in the Council by two representatives that the society may officially designate.

Section 2. The Council shall establish its own organization and enact its own rules and by-laws.

Section 3. The Council shall establish regulations governing the admission of additional organizations to membership in the Federation and shall determine their representation in the Council.

Section 4. The Council shall receive and decide questions referred to it by member societies; it may also independently promote the objects of the Federation.

Section 5. The Council shall act in close cooperation with existing agencies, such as the American Association for the Advancement of Science and the National Research Council.

Section 6. The Council shall appoint an Executive Committee, which shall have such duties and powers as the Council may prescribe.

Section 7. The Council shall appoint a Committee on Bibliography and Publication, with such duties and powers as the Council may prescribe. This committee shall act in cooperation with similar committees that may be appointed by the National Research Council and the American Association for the Advancement of Science.

Section 8. The Council shall arrange places and times for its own meetings. The Council shall assist the American Association for the Advancement of Science in making arrangements for meetings of any member society or group of

member societies, when officially requested by the member societies to do so.

Article VII. Finances

The financial affairs of the Federation shall be controlled by the Council, which may receive and administer funds for the promotion of the purposes of the Federation. The current expenses of the Council shall be met by contributions, and by assessments on member societies. The Council may recommend but not impose such assessments.

Article VIII. Reports

The Council may make an annual report to each of the member societies, setting forth the nature and extent of what has been accomplished by the Federation during the past year, and also pointing out, as far as possible, the general lines along which the activities of the Federation are to be directed during the coming year. The annual report of the Council shall include a financial statement.

Article IX. Amendments

Section 1. Amendments to the Constitution shall require the approval of a majority of the Council and of two-thirds of the member societies.

Section 2. Amendments may originate in member societies or in the Council.

Section 3. Notice of proposed amendments must be presented to the Secretary of the Council and mailed to all members at least one month before the meeting at which they are to be considered by the Council. Notice of approval of any amendment by the Council shall be submitted to the Secretaries of the Societies for action. On receipt of notice of the approval of any amendment by two-thirds of the member societies, the Secretary of the Council shall give notice of its adoption in writing to all member societies.

A. FRANKLIN SHULL,
Secretary of the Executive Committee *pro. tem.*

SCIENTIFIC EVENTS

BUST OF CHESTER S. LYMAN[1]

MR. CHESTER W. LYMAN, of the class of 1882, Yale College, has presented to the trustees of the Scientific School a portrait bust in marble of his father, the late Professor Chester S. Lyman. This piece of sculpture, made by Mr. James T. Porter, of New York, is a beautiful work of art and the artist has not only succeeded in depicting in the marble a likeness which is striking but has caught the essence of the subject's personality. The bust will stand in the faculty room, where it will perpetuate within the walls of the school not only the features but the spirit as well of one whose life was largely devoted to its welfare during the early years of its struggle for existence.

Chester S. Lyman was one of the early professors in the Sheffield Scientific School, having been appointed as professor of industrial mechanics and physics in 1859. In 1884 his chair was limited to astronomy, physics being made a distinct chair, and Dr. Charles S. Hastings was appointed at that date to fill this position. Professor Lyman was retired as professor emeritus in 1889 and died in 1890.

Dr. Hastings, now professor of physics emeritus, has kindly written the following appreciation of the late Professor Lyman's work:

The admirable portrait bust of the late Professor Chester S. Lyman, presented to the Sheffield Scientific School, gives the welcome opportunity to an old and grateful pupil to record some memories of his enviable place as a teacher.

A most interesting sketch of his remarkably intellectual, and even adventurous, life was printed in *The Popular Science Monthly* of September, 1887, by his son, Chester W. Lyman. The present note may, therefore, best confine itself to somewhat personal reminiscences.

In 1867 an acquaintance began which was of inestimable value to the present writer and which continued until the end of Professor Lyman's life. The kindness with which the freshman was received, the generous manner in which his letters of introduction were accepted, served to establish a friendship which is rarely equaled between teacher and scholar. The teaching was by no means confined to the classroom, but extended even to an unrestricted use of his private observatory and convenient little machine shop.

At that time the equipment of the department of physics was very meager. Notwithstanding this fact, such was the ingenuity of Professor Lyman in making necessary apparatus, his clearness of exposition, his profoundly philosophical feeling for the essentials of science, that there was certainly no better school for the earnest student of physics in the country. It was during this period, or a little earlier, that he invented and constructed his water-wave apparatus, which still seems to me the most perfect and remarkable

[1] From the *Yale Alumni Weekly*.