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*.

apparatus ever designed for the explanation of a highly complex phenomenon.

In 1869 Professor Lyman, accompanied by his colleague, the eminent astronomer, Professor Newton, went to Europe to purchase physical and mechanical apparatus from a fund given for that purpose by Peter Collier, of the class of 1861, Yale College. Aside from the requisite and familiar instruments of the physical cabinet not already at command, a remarkably full collection of acoustic apparatus was included. The recent discoveries of Helmholtz in the field of sound sensations had enormously enhanced the interest of physicists in that of acoustics, and Professor Lyman utilized this portion of the equipment not only in the classroom but also in a number of public lectures. It was in these lectures that he first made public his ingenious apparatus for compounding pendulum motions at right angles to each other. The enthusiasm with which his audiences received his clear expositions and admirably chosen illustrative experiments left an enduring impression on the memory of his assistant.

A mind so richly stored with the experiences of a singularly varied life could not be otherwise than stimulating in the highest degree to his more thoughtful students, but more than any other teacher known to the writer he awakened a personal affection among all of them which was as freely expressed as it was unusual.

EFFECTS OF FOREST FIRES ON FOOD AND GAME FISHES

THE *Fisheries Service Bulletin* calls attention to the fact that everyone is more or less familiar with the loss of valuable timber sustained each year from forest fires, but there are other serious losses of valuable natural resources from this cause that have received but comparatively little attention. We refer to the wild life of the woods and streams, and particularly to the game and food fishes. Based on a monetary valuation the loss of wild life from forest fires may appear insignificant compared with the loss of timber, but when we consider that the U. S. Forest Service estimates that some 6,000,000 people annually visit our natural forests, many or most of them interested in the fish and game, we become aware to some extent of the importance of the wild life of our forests. Any game and fish commission or conservation commission will be able to vouch for the real value of good fishing to a community.

In line with the growing tendency to place a large portion of the responsibility of conserving our natural resources on those who reap the greatest benefits therefrom, it seems proper to invite the attention of those persons who find pleasure and healthful recreation in fishing in the waters of our forests to the destructive effects of forest fires on the fish. There is a deplorable lack of reliable information and very few recorded observations on the subject. A few of the most immediate effects detrimental to fish life that may be expected to follow forest fires are a sudden rise in the temperature of the water, a lowering of its oxygen content, a change in its chemical properties, and destruction of shade. The slightly acid condition natural to most forest streams, and recognized as suitable for trout, is changed to alkaline from the ash deposited therein. A large amount of ash in the water may be expected to have a deleterious mechanical effect on the fish aside from the chemical changes.

These are but a few of the more obvious and immediate results of fires, and they take no cognizance of the most far-reaching though not immediately apparent effects that probably occur—the destruction of food, increased turbidity, decreased protection against floods and drought, etc. Reliable information on the subject is meager, though an appreciation of the loss of fish from this cause and a record of intelligent observations thereon are of importance. It will be appreciated if persons having knowledge of such occurrences will communicate it to the Bureau of Fisheries.

CONFERENCE ON WORLD METRIC STANDARDIZATION

No less than twenty-seven national scientific societies were represented in the Conference on World Metric Standardization which was held at the Carnegie Institute of Technology on September 6, simultaneously with the Pittsburgh meeting of the American Chemical Society. Dr. E. C. Bingham, of Lafayette College, presided, and opened the discussion.

The conference was called because it was deemed advisable to take cognizance of the organized opposition to the spread of the metric system which has developed in certain