tive Committee never attempted to bargain. Perhaps the honest objectivity of its reports and recommendations was politically naive and tactically bad.

A second reason may lie in an early decision both by the Inter-Society Committee as a whole and by the Executive Committee that they wanted very much to avoid the kind of situation which arose in the 79th Congress. A Senate majority and a majority of scientists had then agreed on S. 1850. Dissenting groups of scientists had agreed to support that bill. A few men prevented its passage by introducing a rival bill and withdrawing their support from S. 1850. In 1947 the picture differed. What had been a minority amendment became a majority bill. The Executive Committee felt that it might have killed that bill by starting a fight. Its real desire for peace may have inhibited stronger action in support of amendments to S. 526.

A third reason may lie in the great weight attached to the advice of a few very prominent scientists. The Congressmen most directly responsible for science legislation appeared to attach much less importance to the views of a two-thirds majority of scientists than they did to those of a few particularly prominent ones. The prestige of a few names was used to support S. 526 and to rebuff any suggestions for change in that bill.

The 80th Congress will reconvene in January. The effort to secure a National Science Foundation should be renewed then. There is now almost unanimous agreement on the necessity of a National Science Foundation. The Senate has twice and the House of Representatives once passed such a bill. The President has repeatedly endorsed it. The Steelman Committee report carries strong arguments in its favor. The great majority of scientists, individually and through their associations, have spoken in its favor. This unanimity of support should be remembered in planning for 1948. The argument is no longer whether we should have a Foundation or not. It is one of what kind of Foundation we should have. It is agreement on the specific features of a Foundation that is now necessary. If scientists are willing and able, without important dissenting individuals or groups, to work for the early enactment of the kind of bill which the majority of scientists consider best, if they are willing to work individually by presenting their case to their own Congressmen, a generally satisfactory National Science Foundation law in 1948 is a strong possibility.

The Inter-Society Committee for a National Science Foundation will meet in the Louis XVI Room of the Sherman Hotel in Chicago at 10:00 A.M. Sunday, December 28.

Obituary

Lorande Loss Woodruff
1879–1947

Lorande Loss Woodruff, Colgate professor of protozoology at Yale University and director of the Osborn Zoological Laboratory, died at his home in New Haven after a long illness on June 23, 1947, in his 68th year. With his passing the Corporation of the Marine Biological Laboratory loses a member of more than 40 years standing and the Board of Trustees one who had served faithfully for 24 years.

Woodruff was born in New York on July 14, 1879, and received his education in his native city, graduating from Columbia University with the A.B. degree in 1901 and the Ph.D. in 1905. Before completing his graduate work he was appointed assistant and later instructor in biology at Williams College, where he remained until he was called to Yale in 1907. There he served successively as instructor, assistant professor, and professor until his death. He became chairman of the Department and director of the Osborn Zoological Laboratory in 1938, but took leave of absence in November 1946 on account of ill health.

His connection with the Marine Biological Laboratory began in 1905, when he attended the summer session as investigator and instructor in the invertebrate course and was elected to membership in the Corporation. Four years later he joined the staff of the course in embryology, of which he remained a member until 1914. During the absence of Dr. Calkins in the summer of 1927 he was in charge of the course in protozoology. Elected to the Board of Trustees in 1923, he served with them until his death, and during the years 1930–32 he was a member of the Executive Committee.

Coming to Yale at a time when a radical reorganization of the instruction in biology was to be undertaken, Woodruff took part from the first in teaching general biology and in 1910 assumed full charge of the general course in Yale College. This he built up into one of the soundest and, at the same time, most popular courses in the University. Through the years thousands of students listened to his masterly lectures, later incorporated in his

textbook, *The foundations of biology*, which has been very widely used and has run through 6 editions.

Woodruff's research was exclusively in the field of unicellular organisms. Beginning with his doctoral dissertation, which was done under the direction of the late Prof. Calkins and published in 1905, he made many contributions to our knowledge of the life history of ciliates, their division rate, nuclear reorganization, and the effect of environmental factors on their life cycle. He is perhaps best known for the famous pedigreed race of *Paramecium aurelia*, which was carried for 8 years with daily isolation of the products of division, thus precluding conjugation and showing that these organisms can reproduce asexually indefinitely without dying out. In the first 8 years over 5,000 generations were obtained, and afterward the culture was carried in a less rigorous manner, though sufficiently carefully to exclude conjugation except possibly between closely related individuals. The culture has now reached more than 24,000 generations without loss of vigor. In the course of this work Woodruff and Erdmann discovered that, corresponding to the rhythms in division rate, the nuclei of the paramecia undergo a reorganization process which they termed 'endomixis' and which they described as a form of nuclear reorganization without syncaryon formation. This stirred up much discussion, and more recently the process has been described by others as autogamy, involving fusion between micronuclei from the same cell.

His research naturally attracted graduate students, and throughout the years many have written their dissertations under his direction and carried his methods to new centers, just as his assistants and students in the course in general biology, many of whom have become teachers, have spread his ideas of the teaching of biology throughout the land.

Woodruff was intensely interested in the history of science. Early in his career at Yale he organized a course in the history of biology which he continued throughout his life. He was a collector of scientific books of historical significance. He published a number of essays and addresses in this field and organized two series of lectures on the history of science under the auspices of Gamma Alpha Fraternity, which were later published in book form under his editorship. A paper on "Baker on the Microscope and the Polype" led to a friendly encounter with a descendant of Trembley, the famous author of the treatise on *Hydra* published in 1744.

Woodruff was chairman of the Division of Biology and Agriculture of the National Research Council in 1928–29. He was a member of many scientific societies, including the National Academy of Sciences, the American Society of Zoologists, of which he was secretary-treasurer in 1907–09 and president in 1942, the American Physiological Society, the American Society of Naturalists (vice-president, 1923), the American Association for the Advancement of Science (Fellow), and others. He was a member of Phi Beta Kappa, Gamma Alpha, and Sigma Xi, having been president of the Yale Chapter of the last in 1915. He lectured on protozoology at four summer sessions of the Mountain Laboratory of the University of Virginia. For two terms of three years each he was an associate editor of the *Journal of Morphology*. In 1935 he received the Townsend Harris medal from the College of the City of New York, where he had been as a student before entering Columbia

For one who was closely associated with Woodruff for nearly 40 years, it is difficult to realize that this intimate relation has been forever broken. The association was one of mutual trust throughout and without serious disagreement. He was always on the side of high standards, which he applied to himself as well as to others. Indeed, this was one of his outstanding qualities, as was his intense loyalty to the institutions he served. He was quiet and reserved, but with a kindliness that meant much to those about him. With all of his reserve he could be deeply moved, and he never recovered from the shock of Mrs. Woodruff's death, which came with such cruel suddenness in March 1946.

The members of the Corporation of the Marine Biological Laboratory desire to record their sorrow over the loss of one of their body, a friend and fellow servant whom they will miss acutely and whose memory they will always cherish.

ROSS G. HARRISON

Yale University

[The above memorial was read at the meeting of the Corporation of the Marine Biological Laboratory, Woods Hole, August 12, 1947.]