that no definite ratio can be given for the total biota; the bottom flora and fauna, however, are major sources of food for the fish, especially the larger sizes, while plankton is the chief source during the first two years of life. With such a large surplus of plankton, it seems probable that 50 per cent. of it could be harvested for human food, if desirable and practicable, without decreasing the rate of fish production.

In spite of the fact that the annual production of fish appears unusually low in comparison with the other biological resources of Lake Waubesa, it compares very favorably with the beef production of pasture land, for example, excellent pasture is required to produce 200 to 300 pounds of beef per acre per year. It may be pointed out also that the fish yields in 1938 and 1939 were more than 500 pounds per acre in this lake, with a maximum of 550 pounds per acre in 1939. The latter yield is approximately twice as large as the maximum beef production of first-class pasture land.

OBITUARY

WILLIAM ALBERT SETCHELL

WILLIAM ALBERT SETCHELL, professor emeritus of botany of the University of California, died in Berkeley on April 5, 1943. Had he lived ten days longer he would have reached his seventy-ninth birthday. Professor Setchell was born in Norwich, Connecticut, on April 15, 1864. He graduated from Yale University with the degree of A.B. in 1887. He then entered Harvard University for graduate study and received the degrees of A.M. and Ph.D. at that institution in 1888 and 1890, respectively. He was appointed instructor in biology at Yale in 1891 and remained in that position until 1895, when he was called to a full professorship and headship of the department of botany of the University of California; this he held until his retirement in 1934, after which he became professor emeritus.

In 1920 Dr. Setchell was married to Mrs. Clara Ball Caldwell, who died on September 4, 1934.

Professor Setchell enjoyed membership in several professional societies, but in addition he was honored by election to several organizations of special distinction. He was a fellow of the American Association for the Advancement of Science, of the American Academy of Arts and Sciences, the California Academy of Sciences and the Torrey Botanical Club. He was a member of the National Academy of Sciences, the American Philosophical Society and the Washington Academy of Sciences in this country, and of several distinguished societies abroad. Among these latter were Société Biogéographie, Société Linnéenne de Lyon, Botanical Society of Japan, the Linnaean Society of London and the Kunglig Vetenskaps och Vitterhets Samhället i Göteborg.

In the field of science to which he devoted his life Setchell made a distinguished record. Thoroughly competent though he was in botanical taxonomy in general, his distinction lay in his monumental contributions to algology and especially to marine algology. From the cooperative researches which he carried on through most of his life with the late Professor Nathaniel Lyon Gardner, there resulted in published form several large volumes on the marine algae which are among the most thoroughgoing and impressive in the world. Moreover, he was never a narrow student of taxonomy. He was as much interested in the causes of the geographic distribution of algae as in their orderly classification, and his contributions to our knowledge of the rôle of temperature in the distribution of algae have received world-wide notice. Setchell was one of the early students of plant genetics in this country and inaugurated the fundamental genetical studies on Nicotiana which have since been carried on with distinction by Professors Goodspeed and Clausen.

His versatility in his field of science was paralleled by his general versatility. With the classical background of his college training he combined a flair for writing and speaking in graceful and humorous vein, thus making him a companion sought after by circles of laymen as well as of scientists. His appreciation and critical appraisal of the best in literature and music went far beyond that of most laymen. Through his possession of so many and varied qualities of mind and spirit he gained numerous friends in Europe and in other continents which he visited on several occasions. These friends regarded him with affection as well as respect. Likewise, in this country his friends were legion and he was especially gifted in appealing to young men from every biological field who always surrounded him in numbers. Many a young man in biological work in this country received inspiration and material aid from him, as well as wise counsel and lasting friendship.

Those of us who knew Professor Setchell intimately not only admired his hearty personality, fine learning and expertness with the marine algae, but in addition regarded him as an example of the best in American scholarship and manhood. He was a great algologist, a sturdy American and a loyal and devoted friend. All who knew him will mourn his loss to us.

CHAS. B. LIPMAN

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