

# -:- NORTHWEST SCIENCE -:-

Published quarterly by the Northwest Scientific Association

Entered as Second Class Matter, April 5, 1927, at the Post Office at Cheney, Washington. Office of Publication, Cheney, Washington. Subscription Price to Members, Including Dues, One Dollar per Year; to Non-Members, One Dollar.

Volumes 1 to XV, 1927 to 1941, each \$1.25.  
All Fifteen Volumes, \$15.00

Editor, Otis W. Freeman, Cheney, Washington

VOL. XVI, NO. 2

MAY, 1942

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According to Secretary H. F. Raup, only 69 members out of 240 to whom notice of dues for membership in the Northwest Scientific Association was sent, have paid their \$1.00 for 1942. He would much appreciate having the members promptly send him their \$1.00 dues to Cheney, Washington.

The sudden death of Prof. J. H. Ramskill, of the Department of Forestry, University of Montana, and a former president of the Northwest Scientific Association, came as a shock to his many friends and fellow scientists. An obituary will appear in the next issue of Northwest Science.

## Symposium on Management of Impounded Water in the Pacific Northwest

Management of Storage Lakes of the Four Northwest States

**Thomas Large**

In the Northwest states west of the middle of Montana there are some 87 lakes or reservoirs which are now utilized for storage water. There are also in this area 78 sites which have been surveyed and found suitable for additional reservoirs. Such lakes are used for storage of water for mining, for irrigation and farm use, for hydroelectric power and in some instances, for im-

provement of the site for recreational or sport purposes. In the greater number of these reservoirs, it is common belief, that such water storage, because of the "draw-down" at unseasonable intervals or because of excessive "draw-down" is highly destructive of the growth along shores which furnish food and favorable cover or protection for wild water fowl and for young fish,

insect and other animal foods needed for the promotion of growth of game fish.

In so far as is known, this meeting is the first ever called for airing of this subject in its biological aspects. In his preconvention circular to members of the American Limnological Society, Dr. Paul S. Welch, Secretary of that organization, suggested that if sufficient titles were received from members wishing to appear on the program held in connection with the A.A.A.S. at Dallas, Texas, a special time would be set aside to discuss the subject of storage lakes, so important to the Southwest. When their program appeared, however, only two papers were listed. (Both of these were by men who would have appeared on the program in Spokane had not the opportunity to appear on the national program taken them to Dallas.)

Frankly speaking, no one knows much about this subject. Yet every one to whom Dr. Hatch has written in preparation for the program for this symposium has agreed that it is a live subject of high importance. This gives us an ideal set-up for starting a volunteer research program on a cooperative basis. One does not have to be a trained Limnologist to furnish significant information of importance in such a cooperative venture.

Acre for acre water can produce, some believe, as much as the land. As with fertile and infertile land there are fertile and infertile lakes. Limnologists suggest the names for three grades of lakes on basis of relative productivity. (Oligotropic, mesotropic and eutropic indicate grades of poor, medium and excellent.) There is possibility of modifying the conditions which are responsible for the unsatisfactory states just as there is possibility of building up an unsatisfactory condition of farm fertility. To make a farm

raise more corn is not so simple as merely planting more corn. Likewise the way to have more fish in our lakes is not so simple as merely going to the fish hatchery and getting a can of fish and dumping it into the lake. In the state of Michigan an informed and progressive Institute for Fisheries Research has worked out and offered to the public many plans by which local groups may at little expense do many things to restore the original productivity to lakes which have not been benefitted by over energetic Homo.\*

For the storage lakes, however, formulas have not been worked out. Hence meetings such as this for pooling our knowledge. No idea prevails that such lakes should be returned to their original condition by removal of dams already constructed. There may be situations where construction of two low dams in place of one, thus spreading the stored water over a greater area to secure lower heads, may preserve the original natural fertility of the lake and the original crop of fish and waterfowl be even improved. But in general it should be understood that the Limnologists have a long way to go in improving conditions for high fertility even in normal lakes and in our present state of lack of information much research must be done before we may presume to do more than very cautiously advise some improvements which seem to deserve experiment. For research of this type at this time no federal aid need be expected nor need we expect that already established governmental agencies go far out of their way to put over programs not already approved by congress.

With this situation understood it may be seen as a wide open field for private research. A field to be exploited by the ambitious seeker for material for theses for budding Masters and Doctors. Albeit it may not be an unpleasant field and it may lead literally through pleasant pastures and by still waters.

\* "Improvement of Lakes for Fishing", Institute for Fisheries Research, Univ. of Mich., Ann Arbor, Mich., 1938.