FISH SCALES WEIGH VALUE OF LAKES

How the economic value of various lakes as food producers can be weighed by the scales on fish caught in them, is explained by Homer R. Blen of Indiana University in a report to the Indiana Academy of Sciences.

"On the scales of most of our common fishes are a series of concentric rings which may be readily seen under a low power microscope," Mr. Bolen says. "These rings form alternate dark and light bands due to being closer together in some regions than in others. The dark bands represent periods of slow growth and the light bands periods of rapid growth. Since growth is dependent on food, the dark bands are undoubtedly formed during winter when feeding is partially suspended. Thus by counting the winter bands we can determine the age of the fish."

Mr. Bolen secured scales from a number of bluegill, yellow perch, and large mouthed black bass, from Winona, Shoe, and other lakes in Kosciusko County, Indiana. The fish caught were also weighed and measured. According to the age as shown by the scales, it was found the bluegills of Winona Lake increased more in length between the second and third year than did those caught in Shoe Lake. Yellow perch were also found to be of greater length at given ages in Lake Erie than in Winona Lake.

"If a species grows more rapidly in one lake than in others," claims Mr. Bolen, "it indicates that the food conditions are more favorable there. This may mean that food is more abundant or that competition is less severe. A systematic investigation of rates of growth of the fishes in inland waters will no doubt reveal some very interesting facts on the fertility of our various lakes. From an economic viewpoint it will mean a better knowledge of the possibilities of our lake resources."

PINEAPPLES MUST HAVE REGUALR "IRON RATION"

Pineapples with leaves pale and anemic for lack of iron, starving for iron though there was plenty of it in the soil, and cured finally by being sprayed with an iron solution, are actors in a strange romance of botanical research reviewed by Dr. William Crocker, director of the Boyce Thompson Institute for Plant Research.

The drama began when pineapple planters found that their crop was afflicted with a strange disease that made the leaves yellow and sickly-looking and, of course, greatly diminished the yield, a report to the Engineering Foundation says. Plant physiologists quickly demonstrated that the disease was simply iron starvation - for plants must have iron to make their leaves green just as animals must have it to make their blood red.

But chemical analyses showed that there was plenty of iron in the soil, also great quantities of lime, which had always been supposed to be "good for plants". Then followed the discovery that if there was too much lime the iron was not sufficiently soluble for plants to get it. The lime locked the iron up. Where the soil contained a great deal of manganese the story was the same. And since the two principl pineapple-growing regions under the American flag were thus afflicted - Porto Rico with too much lime, Hawaii with too much manganese - the situation looked serious.

Then a researcher for the Department of Agriculture, working in Porto Rico, found that these sick pineapples could be made healthy again by spraying their leaves with a solution of iron sulphate. Fifty pounds per acre, sprayed on the leaves, affected a complete cure; although 3,000 pounds per acre applied to the soil made no difference whatever - the lime took it all.

The new method of assuring thatpineapples "have their iron" at regular intervals has greatly increased the pineapple yield in both Porto Rico and Hawaii. The export of canned fruit from the latter region has exactly doubled.

This method of distributing iron by spraying has lately come to have other applications. In many federal pine tree nurseries in the West, where alkaline soils are common, the seedlings developed the same iron-starvation symptoms, which have been successfully overcome by iron sulphate sprays.

Directly or indirectly, animals and men get most of their salts from plants. A few years ago on certain pasture lands of New Zealand, sheep and cattle developed "bush sickness". This was an iron-deficiency disease. It was later found that if the plants in these pastures were sprayed with iron sulphate and certain other salts, the sickness disappeared.

TABLOID BOOK REVIEW

THE NATURAL HISTORY OF CRYSTALS. By A. E. H. Tutton. New York: E. P. Dutton and Company. $5.00.

This book is an outgrowth of the discovery of new methods of studying crystals, involving the use of X-rays. Previous ideas are reviewed and revised in the light of the new knowledge. There are many excellent plates from photographs, as well as structural diagrams as text figures.

PAN-PACIFIC RESEARCH INSTITUTE ESTABLISHED

The opening of the new Pan-Pacific Research Institute, which is to be an international establishment for the scientific study of food resources in the Pacific area, has been made possible by the gift to the Institution of the Castle home, one of the largest residences in Honolulu, together with four acres of adjacent land. It is expected that this will be the nucleus of a Pan-Pacific University, which has been planned for several years.

The organization of this institution will be unique in that it will be truly international. It will be neither American, nor Hawaiian, nor Japanese, nor the property of any other single nationality, but will be governed by scientists from all the countries of the Pacific.

The directorship of the institution has been offered to Dr. David Starr Jordan, chancellor emeritus of Stanford University.
