

the University of Missouri, professor of anatomy; Dr. Richard V. Lamar, professor of pathology; Dr. Virgil P. Sydenstricker, Augusta, professor of medicine; Dr. Ralph H. Chaney, Rochester, Minn., professor of surgery, and Dr. Harry B. Neagle, Adrian, Mich., professor of preventive medicine and hygiene.

DR. ARTHUR J. HILL, of the department of chemistry of Yale University, has been promoted to an associate professorship in organic chemistry, and Herbert W. Rinehart, Ph.D. (Yale, 1922) has been appointed an instructor.

DR. LLOYD L. SNAIL, of the University of Washington, has been promoted to an assistant professorship of mathematics.

DR. HARRY V. ATKINSON, of the University of Illinois Medical School, has been appointed associate professor of pharmacology in the department of medicine of the University of Texas.

DISCUSSION AND CORRESPONDENCE

BACTERIAL PLANT DISEASES IN THE PHILIPPINE ISLANDS

THAT fungus diseases of plants are numerous and destructive in the Philippine Islands is a well established fact. The extent of damage resulting from this class of organisms is great. Cane is reduced by Fiji disease up to 30 per cent.; the mung bean has suffered so severely that entire crops have been total losses, seedlings of tobacco, tomato and some other plants are severely handicapped by being parasitized by soil harbored fungi. Rusts take their toll yearly, not to mention the serious losses due to forest and timber destroying fungi.

On the other hand, bacterial diseases are scarce and especially so on hosts which have not been introduced from a temperate climate.

Tobacco and other solanaceous as well as some non-solanaceous plants are attacked by *Bacterium solanacearum* E. F. S., an organism which, without a doubt, has been introduced with certain host plants from temperate regions.

Citrus is attacked by the citrus canker organism, cabbage by *Pseudomonas campestris*

(Pamm.) E. F. S., beans by *Pseudomonas phaseoli* E. F. S., cotton by *Ps. malvacearum* E. F. S., and parsley by an organism not previously described. So far as present information is concerned these bacterial diseases represent the entire number which are parasitic on economic hosts in central and southern Luzon. With the possible exception of citrus canker and the previously undescribed disease of parsley none of the diseases, or even more, none of the hosts are indigenous to the Philippines and there is no doubt that the diseases were imported for the most part with the hosts, from temperate regions.

The writer has been searching carefully for bacterial diseases and has made many isolations from numerous hosts in an effort to discover the cause of certain unreported maladies. In every case, with the exception of the parsley disease, no bacterial organism capable of initiating disease was found.

The scarceness of bacterial diseases is obvious and those which are commonly found, with the exception of citrus canker, have been brought, in all probability, with their respective hosts. This statement holds true for central and southern Luzon, only, for no work has been possible elsewhere.

COLIN G. WELLES

COLLEGE OF AGRICULTURE,
LOS BANOS, P. I.

SWORDFISH TAKEN ON TRAWL LINES

MR. HENRY D. WHITON, of New York, recently informed me of the capture of several swordfishes near New York late in December, on trawl lines set for tilefish, the information coming to him through Mr. Haroldson, the sailing master of his yacht. At my request Mr. Whiton asked the sailing master to look up details. He reported that four schooners took 13 swordfishes as follows: *William A. Morse* 2, *Columbia* 3, *Ruth M. Martin* 3, and *Benjamin W. Latham* 5. The swordfishes were all entangled in trawl lines set for tilefish at a point 110 miles southeast of Ambrose Channel lightship, the trawls being set at depths varying from 95 to 125 fathoms. All the swordfishes were taken during the period between Decem-

ber 20, 1921, and January 1, 1922. Their weight varied from 250 to 300 pounds.

With this information I called at the office of the Atlantic Coast Fisheries Company, owners, at Fulton Market, where Mr. J. M. Matthews, in charge of the office, after interviewing Captain Emil Rasmusen of the schooner *Ruth M. Martin*, made the following statement:

While fishing for tilefish 120 miles E. S. E. of Ambrose Channel lightship, a swordfish was found on the trawl line when hauled to the surface. The fish was entangled in the trawl apparently in an effort to obtain some of the tilefish that had been hooked. The tilefish near where the swordfish was entangled were cut and bruised, indicating that they had been attacked. There was no indication that the swordfish had been hooked or had taken any bait. The trawl line was looped around the sword close up to the head and wrapped around the body several times. On this trip three swordfish were taken on the trawls in the same manner. One weighed 265 pounds and had a sword about five feet in length. The other two weighed 254 and 185 pounds, respectively. The tilefish trawl had 320 hooks nine feet apart. The fishing ground is on the edge of the Gulf Stream.

I then interviewed Captain Jack Rasmusen of the schooner *Benjamin W. Latham*. He reported having taken five swordfish on tilefish trawls during the holidays, with a total weight of 990 pounds, the trawls being set at depths of 70 to 115 fathoms.

The masters of all four vessels stated that swordfish had never been caught in this manner before so far as they knew. There were no signs of swordfish at the surface when any of the trawl catches were made.

In going into the details of the matter, I was interested chiefly in ascertaining whether the swordfishes had actually gone to the bottom in search of food, but there does not seem to be any positive evidence on this point. The masters of the vessels thought that the unusual catches on the trawl lines were first felt at about 25 fathoms below the surface. All the swordfishes were much tangled up in the lines and most of them were dead when brought up. They probably attempted to raid the trawls

while they were being lifted, and it is possible that some of them did so at depths considerably greater than that at which they were first noticed.

CHAS. HASKINS TOWNSEND
THE AQUARIUM,
NEW YORK,

MEXICAN ARCHEOLOGY

TO THE EDITOR OF SCIENCE: A somewhat inaccurate account of the communication on "Recent archeological discoveries in Mexico" that I made to the Royal Anthropological Society in London on November 22, 1921, having been reprinted in SCIENCE (April 7, 1922) from *Nature*, I would be obliged if you would permit me to refer those interested in the subject to the exact report of my text printed in *Man* (January, 1922), to rectify the following inaccuracies:

It was in 1909, not "in 1920" that specimens of the sub-gravel type were first brought to my notice. It was in the great pyramid of the Sun at Teotihuacan and not in the recently uncovered and reconstructed "small pyramid" that Señor Gamio pierced a tunnel. It was an age of two thousand years and not of "twenty thousand years" that the late distinguished volcanist, Dr. Temple Anderson, tentatively assigned to the lava bed at Coyoacan under which a second type of clay figurines was discovered. In his remarks Mr. T. A. Joyce referred to a figurine acquired by the British Museum "from Michoacan, Mexico," and not from "Ecuador."

ZELIA NUTTALL

QUOTATIONS

THE ISOTOPES OF TIN

THE insensitivity of the photographic plate in recording positive rays when compared with its sensitivity to light has long been observed, and has been accounted for by the fact that the action of positive rays is purely a surface effect. There has, therefore, always been the hope that considerable improvement could be made in this direction by increasing the concentration of the bromide particules on the surface of the gelatine. This hope has now been realized to some extent by the use of a method which, I understand, has been devised for the production of