# Philippine Islands

## ANNUAL REPORT OF THE BUREAU OF SCIENCE FOR THE YEAR 1931

THE Bureau of Science does work and manufactures supplies, mostly free of cost, for practically all the Government Departments of the Philippine Islands. It manufactures vaccines and serums and serves as a laboratory for the Health Service. During the year there were examined 46,793 samples of faeces, 21,479 samples of foods and beverages, 4953 samples of water, and 49,232 rats for plague. All analyses and examinations made in connection with the Pure-Food Law are conducted by the Bureau for the Philippine Health Service. The Bureau also serves as a laboratory for the Board of Pharmaceutical Examiners and Inspectors, and makes all analyses for them in connection with the Enforcement of the Drug Law.

A considerable proportion of the funds of the Bureau is expended in ways that are of direct value to the people of the Philippine Islands, such as the development of home canning and food preservation, prevention of rabies, identification of minerals, plants and animals, and research on the medicinal constituents of plants, commercial uses of various Philippine products, nature of soils, etc.

RICE BRAN.—Among the practical researches was one on the utilisation of rice bran, which was found to contain 20 per cent. of digestible fat and 15 per cent. of protein. Recipes were devised for preparing from the bran food products, such as cakes and bread, and it has been shown that these products will prevent or cure beri-beri in pigeons, and should therefore prevent or cure human beri-beri.

INVESTIGATION OF PLANTS.—The study of the sclerotium disease of rice is nearing completion, and it has been found that some of the best and most prolific varieties of rice are resistant, so that the disease can be easily controlled.

*Coriaria intermedia*.—This plant, which is common in pasture in Mountain Province, has caused the death of cattle. A poisonous principle has been isolated from it.

ARTESIAN WATERS.—The chemical properties of artesian waters in and near Manila have been studied, and the waters have been classified in accordance with their predominating constituent. None of the waters contained abnormal quantities of radium emanation, and these findings conform with the findings of investigators in foreign countries with respect to natural waters. Four of the artesian waters examined contain as much radium emanation as the waters of the famous springs at Sibul, which is a well-known vacation resort.

In view of the considerable value of the use of chemicals for disinfecting drinking waters in the Philippines, an investigation was made of the keeping qualities of the various hypochlorites under different conditions. It was found that calcium hypochlorite, properly sealed, keeps well.

MOSQUITO LARVICIDES.—Paris green, diluted with road dust, has long been used as a larvicide for mosquitoes. Investigations have shown that powdered charcoal is an equally good diluent. Also, it has been found that if, instead of making a mixture of charcoal and Paris green, Paris green is absorbed by the charcoal, lower concentrations of Paris green may be used with good effect. An automatic distributor of Paris green has been devised; also a method of controlling larvæ by damming streams. It has been found that if a stream is dammed and the water from the dam is periodically released, the larvae above the dam are stranded, while those below are flushed out. An attempt to find where the malaria mosquitoes stay during the day has shown that they may be found along old stone walls, under bridges, and along undercut banks of streams.

ULTRA-VIOLET RAYS IN THE TROPICS.—The question of ultra-violet rays in the Tropics has long been one of great interest. It has often been claimed that in the Tropics there is excessive ultra-violet radiation which is deleterious to health. The Board has spent much effort along this line, and the results indicate that in Manila the ultra-violet rays are not excessive, as has often been believed (see p. 373).