In August 1934 officials of the health and game departments of Maine urged that aid be given in controlling an outbreak of rabies near Farmington. The Biological Survey's expert learned that the trouble was localized in a largely wooded farming section, not over 8 miles in diameter, where 10 foxes with evidence of rabies had been killed since March. One boy, 3 cows, and 4 dogs were known to have been bitten by the foxes, and 2 of the cows had died. A rapid spread of the disease among the numerous large and small wild animals was threatened, but acting on the Bureau's recommendation the State game department immediately employed 10 trappers to remove the possible carriers from the locality. By October 1 these men had taken 162 foxes, 107 raccoons, 510 skunks, 117 porcupines, 9 minks, 67 woodchucks, and numerous squirrels, muskrats, weasels, and vagrant cats. This action brought the situation under control.

Bubonic Plague Among Ground Squirrels

Bubonic plague has long been prevalent among ground squirrels in California, but Federal and State health and agricultural officials have cooperated in controlling these rodents about resorts, camp grounds, and other places frequented by people, and the human cases have been exceptionally few. It has been definitely demonstrated in California that systematic, intensive rodent-control campaigns must be carried on each year if the health and welfare of the State are to be protected, and recent control work made possible by E. C. W. and P. W. A. allotments has thus been of great benefit.

Disease control, in addition to its importance to public health and man's economic interests, is part of wildlife management. Tularemia epizootics, for instance, have virtually wiped out cottontail rabbits over large areas, and muskrats, gray foxes, quail, and grouse have been affected with this disease, which has caused widespread alarm among hunters and trappers and reduced the sale of hunting licenses.

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RICE When Treated for Milling Acquires Desirable Qualities

The most valuable product obtained in the milling of rice is the whole kernels, or head rice. The medium- and short-grain rice varieties are more extensively grown in the United States, owing largely to a higher yield of head rice in milling, than the long- and long-slender-grain varieties. The better long- and long-slender-grain varieties are, however, quoted on the principal clean-rice markets at higher prices than the medium- and short-grain varieties. If the milling quality of the long- and long-slender-grain rices could be improved it should lead to a larger production and consumption of these types in the United States.

The Process

In certain rice-producing countries of the Far East some rough rice is treated prior to milling. It is claimed that the treated rice mills better, and that the milled rice has a more pleasing and distinctive taste, contains more vitamin B, keeps better, and is more nourishing

than untreated rice. The process consists in soaking rough rice in water, then steaming it under pressure. After steaming, the rice is dried and milled. The type or types of rice that are so treated in the Far East and the exact procedure followed are not generally known. It appears that the method of treatment varies more or less in different countries, but the effects of the treatment are essentially the same.

In experiments conducted by the writers on parboiling rough rice the long-grain varieties Fortuna, Rexoro, Edith, and Iola, the medium-grain variety Blue Rose, and the short-grain varieties Colusa and Caloro were used. These, with the exception of Iola, are important commercial varieties in the United States. Rexoro is a long-slender-grain variety of the same general type as the Patna rice from India. The more extensive tests were made with Fortuna and Rexoro.

The rough rice was first soaked in water, drained, and then steamed under pressure. The treated samples were thoroughly air-dried before they were submitted for shelling tests.

Treated and untreated samples of each variety were sent to the Federal-State rice grading office at Crowley, La., for shelling tests. These were made with the Smith shelling device, which indicates the probable yield of head rice that may be obtained from a given lot of rice when milled.

Results of Experiments

For the samples of rough rice soaked for 24 hours at room temperature and steamed for 25 minutes the increase in the indicated yield of head rice ranged from 2.6 percent for Blue Rose to 25.5 percent for Rexoro; for Fortuna the increase was 9.8, for Iola 19.9, and for Edith 23.4 percent. The increases for Colusa and Caloro, steamed 45 minutes, were 19.1 and 28.0 percent, respectively.

In the more extensive experiments, samples of Fortuna and Rexoro were soaked at constant temperatures and steamed for different lengths of time. The increases in the indicated yields of head rice were essentially the same regardless of the length of the soaking period, the temperature of the water in which the rice was soaked, or the length of the steaming period. The color and texture of the treated rice were, however, affected by these factors.

The average increase in indicated yield of head rice for all Fortuna samples soaked at constant temperatures and steamed for different periods was 29.7 percent, and for all Rexoro samples 25.2 percent.

Color of Treated Rice

The treated rice obtained in these experiments when milled varied in color from translucent to amber, whereas untreated milled rice is white or more or less opaque. However, even though the treated milled rice is darker than the untreated, it is nearly as white when boiled.

Cooking Quality

Treated kernels when boiled retained their shape better than did untreated kernels of the same variety. When boiled and sterilized in water or canned soup the treated kernels retained their shape much better than did the untreated kernels of the same variety or those of Patna rice (fig. 55).

A considerable quantity of Patna rice grown in India is imported duty free each year largely for use in commercially canned soups. In

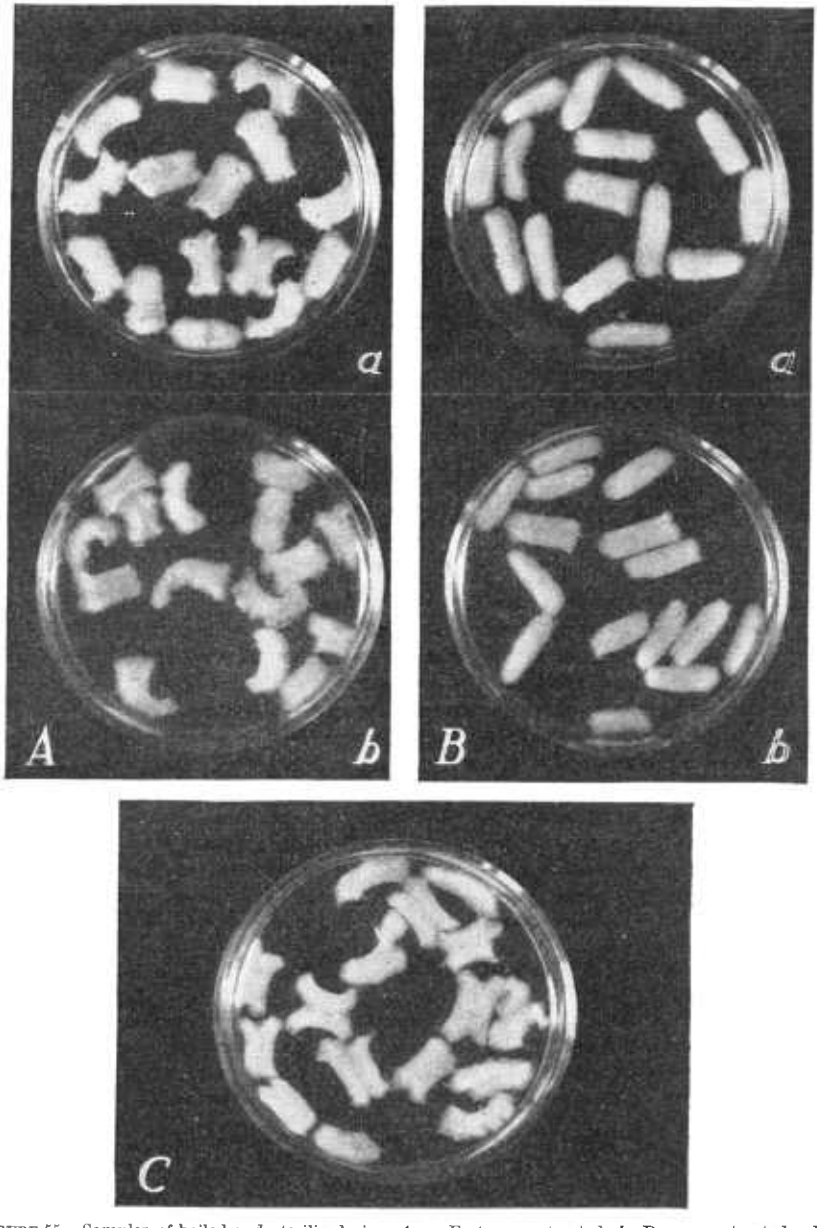

FIGURE 55.—Samples of boiled and sterilized rice: *A*, *a*, Fortuna untreated; *b*, Rexoro untreated. *B*, *a*, Fortuna parboiled; *b*, Rexoro parboiled. *C*, Patna.

the past American-grown varieties that have been compared with Patna in canned soups have not been so satisfactory. However, in comparing parboiled Fortuna and Rexoro rices with imported Patna,

the former appear to have all the desirable characteristics of the latter when boiled and appear even more desirable for use in canned soups.

The information obtained shows that treated rice has desirable characteristics that are at present largely unknown to the rice trade of the United States.

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River Gage Work Pushed to Improve Flood Forecasting

In September 1933 $150,000 of emergency funds was allotted to the Weather Bureau to repair and improve its river gages. Since that time the Bureau has been engaged, in cooperation with other governmental agencies, in standardizing and perfecting the gages used in river-stage and flood forecasting, and in installing gages to determine the relation of stream flow to precipitation.

The Weather Bureau has always done its river-gaging work under a handicap. Funds had never before been available for the construction at one time of more than a few gages of a substantial and modern type. A large part of the money that could be allotted for gages had to be used in maintenance, because every flood partially wrecked a comparatively large number of the structures. Of all the gages then in use, only four gave a continuous record of river stages.

The emergency allotment is, therefore, not only helpful in giving employment in several hundred widely scattered small towns, but it is furnishing to the Weather Bureau a network of river gages that will be of lasting benefit to the country.

Progress of the Work

On June 30, 1934, there had been erected 76 staff gages, 9 of the chain and weight type, 97 of the wire-weight, and 47 continuous recorders, a total of 229. The work was finished by December 31, and all of the gages maintained by the Weather Bureau either were replaced or were thoroughly inspected and found not in need of repair.

In addition to the 437 gages that are owned by the Weather Bureau there are 272 from which reports are furnished to the Bureau by other agencies, principally the Engineer Corps of the Army. This gives a network of 709 gage reports available for river-stage and flood forecasts. However, only 482 of the reports are made daily; 129 are furnished only during the months that may be considered to embrace the flood season, and 98 are received in times of threatened or actual flood.

The accuracy and timeliness of the river forecasts of the Bureau have, for a long time, been considered quite satisfactory by the general public. But the officials of the Bureau have always realized that the system under which the forecasts are made has an inherent disadvantage in that it has never been expressed in standardized formulas. Each forecaster has a set of rules for the rivers in his district, but these rules must be applied in individual cases through the experience of the forecaster. It is impossible for a forecaster to put a large part of his knowledge on paper and, when he is no longer available for this work, his successor must begin immediately to make an intensive study of the rivers in his district, and the effect on the rivers of rains