

this resolution, certain difficulties would have to be faced. In the first place, malaria control by means of mosquito control was not primarily a medical question at all. Physicians were trained principally in the diagnosis of disease and treatment of the sick; the prevention of malaria was more a health problem, and in the tropics health officers were the exception. The second difficulty had been that the control of mosquitoes was more than anything else an entomologic question. Some mosquitoes lived in shade and some in sunshine. The destruction of shade in certain places might introduce dangerous light-loving insects and increase existing malaria. The third difficulty was that for many forms of mosquito control a knowledge of drainage was necessary, and physicians were not trained in engineering schemes. The institute had formed an industrial advisory committee which hoped to be of assistance to tropical industry in supplying expert advice which was necessary before an employer could go ahead on a scheme with confidence that the money expended would give the desired results. The institute and hospital received sick men from the tropics, and it was open to physicians to come for advice or to work on the problems in which they were interested. There would be established a unique museum illustrating all the habits of the mosquito, and information would be given to physicians as to how the insects could be controlled. Expeditions would be sent abroad from time to time to study problems on the spot along with local physicians, and to discuss with them what steps could be taken to control the disease. Ultimately, he hoped, there would be a staff of expert research officers and engineers.

#### THE U. S. BIOLOGICAL SURVEY

THE annual report of Paul G. Redington, chief of the Bureau of Biological Survey of the U. S. Department of Agriculture, has been issued. It points out that the development of additional refuge areas for wild life has been brought more intimately to public attention, and the sentiment throughout the country is more definitely crystallized in favor of a unified program, as it becomes generally understood that the onward march of civilization, with its farming and industrial operations, threatens, at least locally, the ultimate extinction of the various forms of wild life that were the delight of our forbears and that can not be perpetuated for future enjoyment unless provided with ample range, including feeding, breeding and resting grounds. There is urgent need for funds to enable the Biological Survey to investigate and determine the suitability of areas that are being proposed for refuge purposes.

Among the accomplishments and new lines of work undertaken in research during the year are the following:

Inauguration of studies of the relative abundance of migratory wild fowl from year to year, through systematic and repeated censuses taken by cooperators on important waterfowl concentration areas.

Authorization by congressional act of more extended research having to do with the relations of wild life to forestry—the effects of birds, mammals and other forms on forest production.

Successful crossbreeding of Alaskan reindeer with native caribou captured for the experiments, and the birth of fawns of materially increased weight.

Establishment of a Rabbit Experiment Station at Fontana, Calif., to supplement other investigations on the production of rabbits for fur and food, and progress in cooperative investigations of diseases of foxes and measures for their prevention and cure on fox farms.

Progress in research work on the food of the English sparrow, in studies of the requirements of the Wyoming elk, in the administration of other game animals and birds on reservations and in coordination of state and federal policies in wild-life administration generally. Other important measures for the welfare of life are the authorization by congress of a refuge for migratory birds in the extensive Bear River Marshes, Utah, and first steps in its administration, as an aid to conserving the wild-fowl resources of the west, and greater expedition in the work of acquiring lands for the Upper Mississippi River Wild-Life Refuge through congressional aid and through private donation of areas important to the purposes of the refuge.

Of importance to cooperative work for the control of wild-animal pests of agriculture, horticulture, forestry, stock-raising and wild game was the development, through a conference of field leaders in rodent and predatory-animal control at Ogden, Utah, of improved plans for research work and definite policies in local and general control operations. Congress has requested that there be submitted to it at the next session a plan that will operate to insure adequate control of the predatory animals throughout the country.

#### MEETINGS OF THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS

TENTATIVE plans are now ready for the Knoxville meeting of the society to be held March 21, 22 and 23, 1929. The program will include papers on important engineering problems and visits to the rapidly expanding industries of the region as well as trips of scenic beauty.