variety in flora and fauna, and of extraordinary geological and geographic interest, and it provided an almost unique opportunity of saving some of the primitive African pygmies, a race now threatened with extinction, as well as the gorillas that inhabited some portions of it, the latter sometimes found at altitudes in the snow areas. The park in the Belgian Congo and the Kruger National Park, South Africa, were only the first links in what they hoped would become a chain of nature sanctuaries extending throughout Africa.

Dr. J. M. Derscheid, secretary of the Belgian Committee for Nature Protection, describing life in the Belgian Congo reservation, said that there were only about 300 pygmies left in that region, some 200 of whom he had seen. They were braver than negroes and not as treacherous as bushmen, and he had accompanied groups of them on their elephant hunts with spears. He added that he would like attention directed to the undue slaughter of elephants throughout Africa.

Mr. T. R. Hubback, honorary game warden in Malay, said there were three reservations in the Federated Malay States; Gunong Tahan, 360,000 acres; Krau, 130,000 acres; Sungei Lui and Serting, 110,000 acres. It was proposed to extend the first of these by incorporating a part of the adjacent mountainous region. All forms of fauna found sanctuary within those reserves, where also refuge had been found for a wild aboriginal tribe, the Panggan.

The executive committee of the society, in their report, stated that representations had been made to the Governor of Kenya suggesting the desirability of creating national parks on the lines of the Kruger National Park, in view of the fact that a portion of the Northern Game Reserve is being alienated and that apprehensions are felt as to the ultimate status of the southern reserve.

Through the Colonial Office the society had expressed the hope that the forest reserves of Nigeria might be made also reserves for the indigenous fauna. In South Africa attention had been focused upon Zululand, which was important by reason of the fact that the last few remaining southern white rhinoceroses, probably not more than 20 in number, were found there. The area they inhabited, about 150 miles, was coveted by settlers, and in consequence the animals were being poached, one being shot last year by a settler, and about a month ago two others were found shot by unknown persons. The government and the public opinion of South Africa were fully alive to the urgent need of saving the animals, but opinion was divided as to whether they should be captured and transferred to the Kruger National Park, which would involve transport by road and rail for 700 miles, or whether they should be protected *in situ* by a special staff. The former plan was most favored, and anybody who could suggest a workable plan of capture without much risk of damage to the animals would earn the gratitude of wild animal lovers.

In Ceylon, where the position was described as not satisfactory, the Governor, Sir Herbert Stanley, had consequently been asked to keep a sympathetic eye upon the fauna.

The committee was also taking steps to lessen the slaughter of wild animals in India, where recent legislation had placed firearms within the reach of many irresponsible persons, resulting in the threatened extinction of many species. The committee noted with satisfaction the stoppage of the wholesale capture of orang-utan in Dutch East Indies.

A NEW CALIFORNIA WILD-LIFE REFUGE

BY executive order, President Coolidge has created the Tule Lake Bird Refuge in northern California, thus bringing to eighty the number of wild-life reservations administered by the Bureau of Biological Survey. The new refuge consists of 10,300 acres of government lands in northeastern Siskiyou County, within the Klamath irrigation project. These lands are flooded to a considerable extent by waste water and thus form an excellent waterfowl resort.

Paul G. Redington, chief of the Biological Survey, in commenting on the establishment of this project, states that it is a most important addition to the list of wild-fowl refuges established by executive order and by acts of Congress. Tule Lake has long been the Mecca for such wild fowl as the mallard, redhead, ruddy duck, cinnamon teal, avocets, stilts and other shore birds. It also is a favorable wintering ground for the cackling goose, a bird that breeds on the northwest coast of Alaska.

The layout of the area is such, due to mud conditions along the shores, that a natural refuge has existed in the northern part of the Tule Lake area, but sportsmen have in the past found their recreation on other portions of the area. In order not to mete out undue hardship to these sportsmen, it was deemed advisable to allow a continuance of hunting privileges on an area at the southern end of the lake, and accordingly the Secretary of Agriculture on October 10 approved an order permitting hunting on 2,800 acres south of the line forming the north boundary at sections 33 and 34 of township 47 north, range 4 east, Mount Diablo meridian. The inviolate refuge, therefore, comprehends 7,500 acres of land extremely valuable for resting and feeding grounds for the birds which frequent the area.

Mr. Redington further states that this refuge, which lies just south of the California-Oregon line, will supplement the Clear Lake refuge in California, just east of Tule Lake, and the recently established upper Klamath refuge, on the west shore of Klamath Lake, in Oregon. A year ago it was announced that because of lack of water a reflooding program on lower Klamath Lake, west of Tule Lake, would have to be abandoned. The establishment of the refuge, therefore, on Tule Lake will, in a measure, offset the loss of possible sanctuary caused by the abandonment of the lower Klamath project.

It is further stated that because of the encroachment of industrial and agricultural development the wild fowl have in many areas throughout the United States lost their former homes and stopping places, and that the government in its obligations under the migratory bird treaty with Great Britain is steadily working for the reestablishment of suitable water areas so that the wild fowl may regain something of what they have lost. The setting aside of such areas strategically located along the principal lines of migration will probably do more for the future welfare of the wild fowl than any other one measure.

SUMMER MEETING OF THE AMERICAN SOCIETY OF PLANT PHYSIOLOGISTS

AT the invitation of the Purdue section, the summer meeting of the society was held at Purdue University, Lafayette, Indiana, on September 4 and 5. About fifty were in attendance, mostly from the states of Ohio, Michigan, Illinois, Indiana and Wisconsin.

On September 4, a program of short papers was given by members of the Purdue staff, explaining investigations and field plot work. Mr. J. F. Trost discussed the response of corn hybrids to fertilizers. Mr. L. P. Miller gave the results of his studies on the effect of manganese deficiency in sand culture. Dr. E. B. Mains reviewed the results of studies concerning physiologic specialization in the rusts. Mr. K. D. Doak gave the results of his investigations concerning the effect of mineral nutrition on the rust reaction of wheat. Dr. J. H. MacGillivray summarized the results of his studies concerning tomato quality. Professor L. P. Cullinan and Mr. J. L. Sullivan gave the results of their studies concerning the nutrition of apple trees. Professor P. H. Brewer described methods for the purification of the virus of tomato mosaic. Mr. L. M. Bushnell described the dominant soil types in the vicinity of Lafayette. Professor S. D. Conner outlined the agronomy field plot experiments. Following a dinner held at Lincoln Lodge, Dr. C. A. Shull discussed the present status of the journal and plans for its future development.

September 5 was spent in field trips. In the morning the soils and crops experimental farm east of Lafayette and the animal husbandry farm north of West Lafayette were visited and breeding and fertility experiments with corn were studied. Following a lunch at the Fowler Hotel, Professor E. J. Kraus discussed the relationship of plant physiology and applied botany. In the afternoon the orchards of the horticultural department west of Lafayette were visited and pruning and fertility experiments were studied.

APPROPRIATIONS FOR RESEARCH AT CORNELL UNIVERSITY

THE Heckscher Foundation for Research at Cornell University, on recommendation of its council and the approval of the University Board of Trustees has appropriated $70,294 for forty-two separate research projects to be conducted this year.

This year's use of the income of the fund which Mr. August Heckscher established at Cornell in 1920, marks a departure from the previous policy. While providing for research in the physical and biological sciences as well as the humanities, the major portion of this year's funds will be devoted to researches in the general field of radiation. Some of the researches thus provided for are purely physical studies of the nature of radiation, some make use of radiations of various kinds in studies of the structure of matter and some deal with the effects of radiation on chemical reactions and on certain biological phenomena.

In addition to the previously announced researches in the field of radiation, the following grants in the natural and exact sciences have been made to members of the Cornell faculty for the current year:

Professor J. Papish. The occurrence, distribution and association of the rarer chemical elements.

Professor A. C. Gill for a petrographic investigation of the Tully limestone.

Professor J. B. Sumner for materials and assistance in connection with a study of the preparation and properties of crystalline urease.

Professor J. A. Dye for materials and assistance in a study of tissue respiration and endocrine functions.

Professor G. C. Embody to aid him in his studies of the rate of growth of wild trout in streams.

Professor Cornelius Betten for aid in the preparation of a manuscript dealing with the Trichoptera.

Dr. Grace H. Griswold for assistance in the preparation of a manuscript on chalcidoid parasites of aphids.

Professor L. H. McDaniels for assistance in a histological study of the phloem tissue of woody plants.

Professor Allan Nevins for assistance in a study of the history of American railways.