concerning which he published "Contribution to the Optics of the Microscope" in 1919 and "Microscope Theory" in 1924; and chemistry, in which he invented and patented a new process for the distillation of petroleum oils at low temperatures.

His publications in entomology are very extensive and included nearly every field; systematic and economic entomology, anatomy, physiology, toxicology, ecology, apiculture and sericulture. A few of his most outstanding works are: "A List of the Insects of California" (1903), "The Wing Veins of Insects" (1906), "Guide to California Insects" (1913) and "School of Fumigation" (1915). He was the first editor and first contributor to the University of California Publications in Entomology.

He was married to Leanora Stern in 1889, who bore him three sons, Lawrence, Harold Evans and Charles Edward, and a daughter Elizabeth, all of whom survive him. Following the death of his first wife, he was married to Bernice Christopher in 1926. The latter died in 1930.

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RECENT DEATHS

DR. THOMAS RUSSELL WILKINS, professor of physics at the University of Rochester, died suddenly on December 10 at the age of forty-nine years.

DR. GLADWYN KINGSLEY NOBLE, curator of the departments of herpetology and experimental biology of the American Museum of Natural History, with which he had been connected since 1919, died on December 9 at the age of forty-six years.

DR. F. W. EDWARDS, since 1937 deputy keeper of entomology at the British Museum (Natural History), died on November 15 at the age of fifty-one years.

DR. HEINRICH KAYSER, emeritus professor of physics of the University of Bonn, known for his work in spectroscopy, died on October 14 at the age of eighty-seven years.

Nature reports the death of M. Charles Nordman, since 1920 director of the Paris Observatory, on November 15 at the age of fifty-nine years; of Professor Hans Rosenberg, an authority on astronomical photometry, formerly director of the observatory at Istanbul, aged sixty-one years.

SCIENTIFIC EVENTS

THE WAR AND THE BRITISH FAUNA[1]

IT is probably still too early to judge the effects of the war upon British wild life, for it was not until the second or third years of the war of 1914–18, when the calling-up of older men had more extensively depleted the game-keeping profession, that the great increase in so-called "vermin," including rarer species like the wild cat and polecat, became of national concern; nevertheless, the present war has speeded up a great deal of this disturbance of wild life by the greater activity at home. The most noticeable effects have been an extension of the range of normally persecuted species like the carrioncrow, fox, otter, kestrel, little owl and sparrowhawk and this may be followed by a slower extension of species like the badger and raven. The use of sand-dunes and lonely islands in the coastal defenses and of rural parks for training the army has considerably disturbed the nesting haunts or "sanctuaries" of uncommon species, particularly birds, more so than the building of factories in rural areas, and this may have a permanent effect in further reducing the nesting population of terns, waterfowls and waders.

On the other hand, the breaking up of estates and game preservation is furthering the extension of the little owl and the grey squirrel in the north of England. As in 1914–18, the rumor has gained popularity that warfare on the Continent has sent rarer Continental birds to nest in England, notably the avocet in Essex, but it is unlikely that the campaign abroad had any effect upon the British avi-fauna. Pollution of rivers has again arisen, notably on the Severn, Bristol Avon, and the Derbyshire Derwent, with considerable loss of fish life. It yet remains to be seen if the rosebay willow-herb will emulate the story of the London rocket in spreading over ruined buildings in London and other cities; that the poppy will recolonize the Flanders area in its former abundance is very likely, for the destruction of buildings has again made the soil highly calcareous.

[1] From *Nature*.

THE HERBARIUM OF THE NEW YORK BOTANICAL GARDEN

THE herbarium of the New York Botanical Garden, into which the two millionth specimen was incorporated at a special ceremony on the afternoon of December 11, is the largest herbarium in the United States being operated under a single head. The ceremony, during which Joseph R. Swan, president of the Board of Managers of the garden, placed the two millionth specimen in its niche in the herbarium, was preceded by a program beginning at 3:30 P.M. in the Museum Building, and was followed at 4:30 by tea served in the new Members' Room.

In his opening remarks, Dr. William J. Robbins, director, briefly described the research work being done at the New York Botanical Garden through the aid of the herbarium. In addition to many thousands

of specimens identified every year as a service to the public, this work included special studies of many families of plants.

Other speakers were: Dr. H. A. Gleason, assistant director and head curator, on "Important Publications from the Garden Herbarium"; Dr. H. N. Moldenke, associate curator, on "Important Collections in the Herbarium"; E. J. Alexander, assistant curator, on the "Relation of the Herbarium to Horticultural Progress"; Dr. W. H. Camp, assistant curator, on "The Herbarium in Scientific Research," and Dr. J. H. Barnhart, on "The History of the Garden Herbarium." In his address Dr. Barnhart called attention to the circumstance that several parts of the herbarium had received special names in commemoration of former members of the staff. The first to be so honored was Professor L. N. Underwood, who died in January, 1907. A year later the entire fern collection was officially designated the "Underwood Fern Herbarium," and a bronze tablet was installed recording the fact. In 1934, Mrs. Britton's work was commemorated in the naming of the moss collection the "Elizabeth Gertrude Britton Moss Herbarium," and in the following year the general herbarium was designated the "Britton Herbarium," in memory of the first director of the garden.

While slightly exceeded by the United States National Herbarium in Washington in its specimens of flowering plants, the herbarium of the New York Botanical Garden ranks first in the country in plants of certain regions; for example, the southeastern states, the West Indies and Bolivia, and in the flora of Asia. It also stands first in mosses and in myxomycetes (a low order of plants somewhat akin to the fungi), and ranks among the first in its collections of algae and fungi.

Altogether, the herbarium contains 1,388,833 specimens of flowering plants and ferns; 177,000 mosses; 61,400 liverworts; 87,500 algae, and nearly 305,000 fungi, including lichens, making a total to date of 2,019,000 specimens. The two millionth to be accessioned was a specimen of a rare clematis collected in Kentucky last summer by Dr. Gleason, who with John Dwyer, a graduate student from Fordham, was making an extensive collecting trip through the eastern and central states.

Special studies being carried out at the garden by members of the staff are:

Dr. H. A. Gleason, head curator, is working in the Melastomes, an American group of nearly 4,000 species, a number of which are in greenhouse cultivation.

Dr. H. N. Moldenke, associate curator, is studying the Verbena and Black Mangrove families throughout the world, and is also doing research on the plants of the Bible, the flora of the Watchung Mountains of New Jersey, and on certain arrow poisons used in South America.

Dr. W. H. Camp, assistant curator, is working on the Blueberries and their relatives from the viewpoint of a botanist, and is also at present investigating the beeches, making special studies of the flowers and of the remnants of these trees from past geological ages.

E. J. Alexander, assistant curator, works on the flora of the Southern States, on the Cacti and other types of succulent plants—especially those which the Garden has on display in the conservatories. He is responsible for the correct naming of all the plants cultivated at the New York Botanical Garden.

B. A. Krukoff, honorary curator of economic plants, devotes his energies to plants of medicinal importance.

A number of graduate and fellowship students are also working on special plant problems at the Botanical Garden.

FIFTIETH ANNIVERSARY OF THE INSTITUTE OF EXPERIMENTAL MEDICINE IN LENINGRAD

DR. W. N. BOLDYREFF, now of Tucson, Arizona, writes to SCIENCE calling attention to the fiftieth anniversary of the Institute of Experimental Medicine which was founded at St. Petersburg by Prince A. P. Oldenburg in December, 1890, with the cooperation and advice of Louis Pasteur.

Dr. Boldyreff worked at the institute for many years. From the first young scientific men of promise were made directors of the separate laboratories. The chiefs of departments included I. P. Pavlov, physiology; M. V. Nezki (a Pole), biochemistry; S. N. Vinogradski (now vice-director of Pasteur Institute at Paris), microbiology; N. V. Uskov, pathological anatomy; S. M. Loukianov, pathology; H. J. Gelman, veterinary medicine; V. A. Kraiushkin (of the Pasteur vaccination against hydrophobia), and N. C. Shulz, practical bacteriology. Dr. M. V. Nezki had been a professor in the University of Bern, Switzerland, and Dr. S. N. Vinogradski was an associate of Louis Pasteur and had discovered the microbe acidifying ammoniac in the ground.

The institution worked not only for purely scientific purposes, but also for the application of new discoveries to the needs of every-day life such as the fight against different infectious diseases, the invention of better methods of disinfection, the elaboration of new drugs and methods of treatment of disease, etc. It was fully equipped. Much money was given for experimental work and for the salaries of investigators and other employees. The director of the institute (the first director was Dr. E. F. Sperk, the specialist in syphilology) and all assistants had furnished quarters in the building, situated in a beautiful park on the edge of the city. There was established also a cheap but excellent restaurant for employees.