

best days of Gordon Cumming, is indirect evidence of the rapid extension of the Uganda railway and of the remarkable facilities which it affords for travelling in a short space of time to and from London and the heart of Africa.

THE NEW BUREAU OF FORESTRY.*

ON the first of July the Division of Forestry and three other scientific divisions of the U. S. Department of Agriculture were advanced to bureaus. This was provided for by the last session of Congress, which appropriated for the expenses of the Bureau of Forestry during its first year \$185,440. The appropriation for the Division of Forestry during the year just ended was \$88,520. For the year 1898-99 it was \$28,520.

These figures show how rapidly the forest work of the Government has expanded of late, and also how well it has commended itself to Congress. There was a time when the practical value of the scientific investigations carried on by the Government was not fully understood, and farmers were inclined to think that the money spent on experiment stations and chemical laboratories was of little benefit to them. Now the case is very different. The improvements in agriculture due to the work of the Department have increased the value of the farm products of the country by many millions of dollars annually. As this kind of work has proved its practical utility, Congress has shown itself generous toward it. The readiness with which Congress has increased the appropriations for the Division of Forestry is the best evidence that forestry has proved its importance from a business standpoint.

The change from a division to a bureau, and the larger appropriation, will make possible both an improved office organization and more extended field work. The bureau will be provided with a much larger office force and will be organized in three divisions. But field work, not office work, is what the bureau exists for. This work has been going on during the last year from Maine to California and from Georgia to Washington. It includes the study of forest conditions and forest problems all over the country, the giving of advice to owners of

forest lands, and the supervising of conservative lumbering operations which illustrate forest management on business principles. This work can now be greatly extended. Private owners of some three million acres have applied for this advice, which in every case requires personal examination, and about 177,000 acres have been put under management. This land is in many tracts, large and small, and is owned by individuals, clubs and corporations. Several State governments have also asked the aid of the bureau. But the greatest demand is that of the Department of the Interior of the National Government, which has asked for working plans for all the forest reserves, with the enormous total area of about 47,000,000 acres.

The Bureau of Forestry is made up of the Division of Forest Management, the Division of Forest Investigation, and the Division of Records. Each of these continues, with enlarged facilities, work which was in progress under the old Division of Forestry.

The Division of Forest Management is in charge of Mr. Overton W. Price, the former superintendent of working plans. When the owner (private or public) of woodland wishes to consider the possibilities of his property if handled as a constant source of timber supply, the tract must be examined by an expert to ascertain the condition of the standing timber, the prospects of reproduction, the facilities for marketing, the best method of harvesting the present crop so as to secure the largest present and future yield, and the likelihood of success under management. A preliminary report is then made. If the owner decides on management, a working plan follows. This involves a careful study of the rate of growth of the different kinds of marketable timber, the computation of the proper interval between cuttings and of the amount of timber to be harvested, and, if desired, the recommendation of the necessary regulations to enable the work to go on under contract. All this falls to the Division of Forest Management.

The Division of Forest Investigation, under the charge of Mr. Geo. B. Sudworth, makes studies of trees—of their rates of growth, distribution, reproduction and habits—and investigates all the forest problems connected

* Press bulletin.

with fires, lumbering, grazing, tree-planting, stream flow and erosion.

The Chief of the Division of Records is Mr. Otto J. J. Luebker. It takes charge of all office and routine matters, and also has custody of the library of literature bearing on forestry, and of a unique collection of photographs, which is continually being added to, illustrating forest conditions all over the United States.

The result of the work of the Division has been to turn practical forestry in the United States from a doubtful experiment into an assured success. Special studies of some of the most important trees, commercially, have been made, from which can be calculated their probable future yield. Cheap methods of harvesting the present lumber crop without injuring the productivity of the forest have been put in operation. Such concerns as the Great Northern Paper Company and the Deering Harvester Company have been led to undertake conservative management of their forest properties. Meanwhile, the work of tree-planting, particularly in the almost treeless Western States of the plains, has been furthered; the relation of the forest to the volume of streams, erosion, evaporation and irrigation have been studied; matters connected with irrigation and water supply have been investigated; hopeful progress has been made in the direction of regulating grazing in the Western reserves in a manner fair both to the important interests of cattle and sheep owners and to those who look to the reserves as a source of continuous supply of wood and water; and studies of forest fires were conducted with a view of reducing the great yearly loss from this source, a loss which has been estimated at \$50,000,000.

Field work is to go on this summer in 17 States. There are in all 179 persons engaged in the work of the Bureau. Of this number 81 are student assistants—young men, largely college students, who expect to enter forestry as a profession, and who serve during the summer on small pay for the sake of the experience gained.

SCIENTIFIC NOTES AND NEWS.

PROFESSOR RUDOLF VIRCHOW has been appointed a Knight, with the right to vote, of the

Prussian Order 'Pour le Mérite' for Science and Art.

TRINITY COLLEGE has conferred the honorary degree of M.S. on Mr. John H. Sage, secretary of the American Ornithologists' Union.

CAPTAIN SCOTT and the other officers and the members of the scientific staff of the British National Antarctic Expedition were entertained at a farewell dinner by the Savage Club, on July 6.

THE annual dinner of the Royal Institute of Public Health will take place on July 24, in London, when the Harben Gold Medal of the Institute will be conferred on Professor R. Koch, of Berlin. Lord Lister, Lord Strathcona, Professor Brouardel and other guests will be present.

F. W. DYSON, chief astronomer at the Greenwich Observatory, arrived at San Francisco on June 8, after having observed the total eclipse of the sun in Sumatra. He visited the Lick Observatory on the ninth, and intends to inspect other American observatories before his return to England.

DR. THEO. GILL, after having attended the ninth jubilee of Glasgow University as a representative of the Smithsonian Institution and the National Academy of Sciences, is at present on the continent, where he will visit scientific institutions, including the Zoological Station at Naples.

PROFESSOR WILLIAM OSLER, of the Johns Hopkins University, and Dr. Edward G. Janeway, of the University and Bellevue Hospital Medical College, are among the delegates who will attend the Congress of Tuberculosis to be held in London next week.

MR. F. H. NEWELL, in charge of the hydrographic work of the U. S. Geological Survey, and Mr. Gifford Pinchot, chief of the Bureau of Forestry, left Washington on July 11 for the West, having in view, among other things, the investigation of the forests and water supply of eastern Oregon. Mr. H. Gannett, of the U. S. Geological Survey, is already in Oregon inspecting the work of the various parties surveying the forests.

THE Secretary of Agriculture has recently