

raphy, etc., forest cover has an important protective value.

Considering especially character of soil, steepness of slope, and character of precipitation, a rating will be given the protective value of forest cover as an element of the particular watershed. The plan is to eliminate watersheds where on account of these factors the maximum protective influence that a forest might exert would have a comparatively minor effect upon stream and flood conditions, and to locate the areas where, because of soil, topography and precipitation, the effect of forest cover would be important.

A somewhat similar rating of the protective efficiency of the existing forest cover on the Mississippi system's watersheds is proposed. The plan contemplates putting all this data as far as possible on a set of maps for ready consultation in the formulation of comprehensive plans for flood prevention and control in the Mississippi Valley. The data obtained by the Department of Agriculture through the Forest Service will be correlated with that of the War Department and other agencies for the construction of reservoirs and other engineering methods of flood control.

E. A. Sherman, associate forester, has been named the direct the survey.

THE FIELD MUSEUM OF NATURAL HISTORY

EXTENSIVE engineering changes are being made in Field Museum of Natural History. As a result of this work, fourteen large additional halls will be made available for museum exhibits, and the heating of the new Shedd Aquarium, the stadium in Soldier Field and the museum itself will be centralized in the Field Museum's heating plant. For more than a year past the museum has been supplying heat to the stadium, and an arrangement was recently entered into between authorities of the projected Shedd Aquarium and the museum to supply heat to the new institution.

Of the halls gained for public exhibits in the museum by the changes being made, eleven will be devoted to anthropological collections, and three to zoological subjects. The work is being rushed in the hope of completing it by October 1. Shortly after that date, it is expected, operations for installation of collections in the new halls will begin, and as soon as each hall is arranged with its exhibits it will be thrown open to the public. The entire fourteen new halls probably will not be in use until a considerably later date.

The continued development of Field Museum as an institution of world importance, and the constant flow

of accessions of valuable material in all four of its departments—anthropology, botany, geology and zoology—through expeditions sent out by it, and through gifts of its friends, have made more space an absolute necessity.

The halls to be gained are on the ground floor of the building, and will constitute about two thirds of the 245,000 square foot area of this floor. All pipes and other obstructions, which have made this space unavailable for exhibits in the past, are being removed. Steam and water pipes, now running along the ceilings, will be carried through underground trenches and tunnels, increasing the headroom of the halls and bettering their appearance. The pump room on the ground floor will be depressed.

The new halls will enable the museum to have a well-ordered geographical and scientific arrangement of the anthropological collections. Among exhibits planned for these halls are those from Melanesia, the Philippine Islands, Malay Peninsula and Malay Archipelago, Polynesia, Micronesia, Madagascar and East Africa, North, West and South Africa, India, Egypt and Mesopotamia. Their installation in the new halls will make it possible to devote the entire east wing of the main floor exclusively to North, Central and South American archeology and ethnology. One of the new halls will be devoted to exhibits illustrating the progress of prehistoric man, for which Henry Field, assistant curator of physical anthropology, is now collecting in Europe. Another hall will be devoted to physical anthropology.

A special significance is attached to the use the department of zoology will make of the space allotted to it in the new halls, as it will place the lower orders of animals, chiefly denizens of the sea, on this lower floor, while the higher orders of animals will remain on the main floor. A feature of the new halls will be one devoted to large marine mammal habitat groups such as whales, walruses, seals, sea lions, porpoises and so forth. Another hall will hold systematic collections of fishes, and the third will be devoted to marine invertebrates, such as starfish, mollusks and similar creatures.

Removal of these collections from the general zoological collections in the west wing of the main floor will make possible opening there a new hall of Asiatic mammal habitat groups, the nucleus of which will be the collections made by the James Simpson-Roosevelt Asiatic Expedition of the Field Museum, conducted in 1925 under the leadership of Colonel Theodore Roosevelt and Kermit Roosevelt. It is expected that about January 1, 1928, the first two groups will be installed ready for exhibition. These will consist of the famous Ovis Poli sheep, named for the great explorer Marco Polo, and the

ibex, of which the Roosevelts secured a world's record head.

SCIENTIFIC NOTES AND NEWS

EDWARD BRADFORD TITCHENER, Sage professor of psychology at Cornell University, died on August 3, aged sixty years. Dr. Titchener was born in Chichester, England, and was called to Cornell University in 1892.

THE seventieth birthday, occurring on August 8, of Professor Henry Fairfield Osborn, president of the American Museum of Natural History, was celebrated on July 28 by the presentation of a Queen Anne cup made by Thomas Folkingham in 1711, and an illuminated book of resolutions containing the signatures of his colleagues and friends from all the world over. These signatures were made on individual slips of vellum and included nearly a thousand names. The design and decorations of the book were executed by William E. Belanski. The presentation took place in advance of Professor Osborn's birthday owing to the fact that he was obliged to be in the west on August 8. The committee in charge of the celebration have also invited Professor and Mrs. Osborn to be the guests of honor at a reception to be given on September 29, on which occasion the balance of the fund raised by his friends, amounting in all to nearly seven thousand dollars, will be presented to him for his research work.

DR. HENRY S. WASHINGTON, of the Geophysical Laboratory of the Carnegie Institution, has been nominated by the Italian government an officer of the Order of the Crown of Italy and has received from the Italian ambassador, Baron de Martino, the cross of the order in recognition of his work on the rocks and volcanoes of Italy.

DR. F. B. MUMFORD, since 1909 dean of the College of Agriculture and director of the experiment station of the University of Missouri, and his brother, Dr. H. W. Mumford, since 1922 dean and director of the Illinois College of Agriculture, recently received the honorary degree of doctor of agriculture from the Michigan State Agricultural College, where both were graduated thirty-six years ago.

THE University of South Dakota at the recent commencement exercises conferred upon Dr. L. S. Hulburt the honorary degree of doctor of laws. Dr. Hulburt is professor of mathematics, emeritus, in the Johns Hopkins University. Before going to the Johns Hopkins University in 1892 he was for four years professor of mathematics in the University of South Dakota.

MRS. ZELIA NUTTALL has been elected a fellow of the Royal Anthropological Society of Great Britain

and Ireland and a corresponding member of the Geographic Society of Philadelphia to fill the vacancy created by the death of Sir John Scott Keltie.

DR. R. RUGGLES GATES, of the University of London, received the doctorate of laws *in absentia*, at the commencement exercises of Mount Allison University, Sackville, N. B.

M. LEONARDO TORRES-QUEVEDO, engineer of bridges and roads of Spain, has been elected foreign associate of the Paris Academy of Sciences to succeed the late H. Kamerlingh Onnes.

THE Hanbury Memorial Medal, which is given for excellence in the prosecution or promotion of original research in the chemistry or natural history of drugs, has been awarded to Dr. T. A. Henry, director of the Wellcome Chemical Research Laboratories.

M. PIERRE SALET, of the Observatory of Paris, has been promoted from adjunct astronomer to astronomer, to succeed M. Bigourdan, who recently retired.

CARLOS G. BATES, recently director of the Rocky Mountain Forest Experiment Station of the Forest Service, has been appointed director of a new section in the Forest Products Laboratory, at Madison, Wis., which will work on biological problems.

DR. JOSEPH JASTROW, since 1888 professor of psychology at the University of Wisconsin, has retired and has been made emeritus professor of psychology.

THOMAS A. EDISON visited the Department of Agriculture in Washington on July 26 to discuss questions of rubber culture. He conferred with Drs. W. A. Taylor, chief, and Karl F. Kellerman, associate chief, of the Bureau of Plant Industry. A representative of the War Department attended this conference. Mr. Edison was accompanied by one of his assistants. He also conferred with officials of the Department of Commerce on the subject of rubber.

W. L. MCATEE, in charge of the division of food habits research of the Bureau of Biological Survey, recently returned from Europe, where he was from the middle of March to the middle of June on official business connected with the work of that bureau and the Bureau of Entomology. He investigated methods of propagation of waterfowl and other game birds, many of them the same species that occur in the United States. This work was carried on at nine establishments in France, Holland and Great Britain.

DR. GEORGE KEMMERER, professor of chemistry in the University of Wisconsin, and Dr. W. H. Rich, of the United States Bureau of Fisheries, are making this summer a scientific study of the water of the lakes on Kodiak Island, Alaska. Professor Kemmerer has