

and invited the society to select a site for the new fenced range that would be necessary. Forthwith the society despatched a special agent, Mr. J. A. Loring, who went to the Wichita Reserve, and with Supervisor E. F. Morrissey, carefully examined the whole available territory. A location was agreed upon, and duly mapped out. Mr. Loring submitted to the society an elaborate and thorough report, which was transmitted to the Department of Agriculture, and to Congress. Secretary Wilson secured a special appropriation of \$15,000 for the erection of a wire fence to enclose twelve square miles of range, and to erect corrals, sheds, and a hay barn. This work has been proceeding, and will soon be completed, under the direction of the Forestry Bureau of the Department of Agriculture, whose officers have from the first been keenly interested in the undertaking. All the improvements were planned by Mr. Hornaday, and the animals for the nucleus herd were carefully selected by him.

The buffalo herd of the New York Zoological Park has for a long time been one of the finest sights of that great home for wild animals. Originally planned to contain twenty head, it numbered previous to this shipment forty-five as handsome buffaloes of all ages as ever were brought together. Ten lusty calves have been born this year.

But, notwithstanding the fine condition of this herd, the officers of the Zoological Society know that the only sure way by which the American bison can be preserved in full vigor for the next two hundred years, or more, is by establishing herds under national or state ownership, on public lands, in ranges so large and so diversified that the animals will be wild and free. Under such conditions, Dr. Hornaday declares that no ill effects from inbreeding ever need be feared.

The herd forwarded to Oklahoma is composed as follows: six breeding cows; one big bull, "Comanche," five years old, and master of the herd; one bull three and one half years old, two bulls and one cow in third year, one bull and one cow in second year, and one pair of calves, male and female, six months old.

In this collection, four different strains of blood are represented, and after this succession of breeding males has been exhausted, there will be nothing to fear from inbreeding.

The shipment went forward in charge of Frank Rush, keeper of the Wichita Buffalo Range, and H. Raymond Mitchell, chief clerk of the New York Zoological Park. The buffaloes were shipped in two patent stock cars, and traveled in passenger trains the whole distance. On arriving at Cache, teams were in readiness, and the animals were hauled, crated as they were, twelve miles to the new range. The utmost care will be observed to prevent infection by the Texas fever tick that is such a scourge to cattle in the southwest.

THE WISCONSIN GEOLOGICAL AND NATURAL HISTORY SURVEY

THE survey is just closing its field season for 1907. In addition to the regular income of \$10,000, the survey received from the last legislature a special appropriation of \$10,000 annually for two years; to be used chiefly for roads. The state has a constitutional prohibition against the use of money for internal improvements, and an amendment for the repeal of this prohibition has passed two successive legislatures and will be submitted to popular vote in 1908. Meanwhile, the survey will use this small fund in advising local authorities how to build roads as well as may be under present conditions. Mr. W. O. Hotchkiss, the economic geologist, is devoting most of his time to this department. Mr. A. R. Hirst, formerly in the employ of the State Highway Commission of Illinois, has been appointed engineer. Under their direction a stretch of experimental road was built at the state fair in Milwaukee during September and a roads convention was held, attended by several thousand persons from all parts of the state.

Dr. Samuel Weidman and Mr. E. B. Hall of the department of areal geology have extended their survey of the northwestern counties of the state and have nearly completed the field work of this area. Dr. Weidman's report on the north central area, including about

7,200 square miles, has just been issued in a volume of some 700 pages.

The survey of the lead and zinc region of Southwestern Wisconsin, which is under the direction of Mr. Hotchkiss, has been extended by the work of a party of geologists and topographers, under the immediate charge of Mr. Edward Steidtmann. Nearly 100 square miles have been surveyed and maps are being prepared on the scale of four inches to the mile, with ten-foot contours. Much detailed information has been secured from drill holes, regarding the contours of the surface of the base of the Galena limestone, which forms the bottom of the zinc-bearing horizons.

The survey has continued its work on lakes on a more extensive scale through cooperative aid furnished by the U. S. Bureau of Fisheries and the Wisconsin Commissioners of Fisheries. The season was spent in the study of the lake region of Northeastern Wisconsin. Messrs. George Wagner and C. T. Vorhies were engaged throughout the summer in collecting fish from these lakes, especially whitefish and lake trout. During August Mr. Chancey Juday, biologist, with Messrs. R. D. Hall and George Kemmerer, as chemist, and Mr. E. V. Hills, as assistant, investigated the lakes as to temperature, oxygen, carbon dioxide, plankton, etc. Materials for study were obtained from nearly 70 lakes. This work was under the immediate charge of the director, Mr. E. A. Birge.

In addition to Dr. Weidman's report, the survey has just issued a bulletin by Dr. J. W. Goldthwait, on the abandoned beaches of Lake Michigan. Reports on the water powers of the state, by L. S. Smith, and on underground waters, by A. R. Schultz, are now in press.

SCIENTIFIC NOTES AND NEWS

DR. KEYSSELITZ and Dr. Martin Meyer, members of the Institute for Ship and Tropical Diseases at Hamburg, have been sent to the Agricultural and Biological Station at Amani in German East Africa to study the disease-causing protozoa.

DURING the past summer, Professor J. W. Toumey, of the Yale Forest School, made an extensive tour of inspection for the United

States Forest Service through many of the national forests, investigating the condition of the forest tree plantations and nurseries which the national government is maintaining.

DR. HEINRICH RUBENS, professor of physics at Berlin, has been elected a member of the Berlin Academy of Sciences.

DR. FRANZ RICHARZ, professor of physics at Marburg, has been elected to membership in the Academy of Sciences at Halle.

PROFESSOR BÄTZ, of Stuttgart and formerly of Tokyo, has been elected president of the German Society of Tropical Medicine, recently founded in Berlin.

MR. R. I. SMITH, formerly state entomologist of Georgia, has accepted the position of entomologist to the North Carolina College of Agriculture and Mechanic Arts and the Agricultural Experiment Station at West Rayleigh.

OF the Western Reserve medical staff, Dr. William T. Howard has returned from one year's leave of absence, during which time he has done research work at the University of Munich. Dr. Howard D. Haskins, absent upon leave, has returned from research work at the University of Strassburg. Dr. Norman W. Ingalls, absent upon leave, returns after a year's research work at Freiburg and Leipzig.

MR. W. L. ABBOTT, chief engineer for the Chicago Edison Company, has been elected president of the board of trustees of the University of Illinois.

MR. E. S. GOODRICH, M.A., F.R.S., has been elected to an official Fellowship at Merton College, Oxford, on condition of his carrying on scientific researches in zoology and continuing educational work in the university.

DR. HUGO HERTZER, professor of graphics, in the technical high school at Berlin, has retired from active service.

THE first lecture in the present year's Harvey Society course will be delivered by Professor E. O. Jordan, University of Chicago, at the New York Academy of Medicine on Saturday evening, October 26, at 8:30 P.M. Subject: "The Problems of Sanitation." All interested are invited to be present.

PROFESSOR JOSIAH ROYCE is this year giving courses on ethics and metaphysics at Yale