

eastwardly adjacent Pikeville quarter-degree, the Rockwood shale, becomes so calcareous toward the west that it cannot be distinguished from the underlying Chickamauga limestone. The McMinnville quarter-degree is essentially an agricultural region, the Carboniferous limestones forming a belt of exceptionally fertile soil along the inner portion of the highland rim. It includes a small area of coal-bearing rocks in its southeastern corner, where the subconglomerate beds, probably corresponding to those at Bon Air, have been opened and worked for local consumption.

WORK OF THE UNITED STATES GEOLOGICAL SURVEY FOR FISCAL YEAR, 1896-97.

THE Director of the U. S. Geological Survey recently formulated the plan of operations for the bureau under his charge for the fiscal year ending June 30, 1897, and it received the approval of the Secretary of the Interior. As soon as the plans were approved the surveying parties were made up and ordered to the field.

The plan covers all the work of the year, administrative and scientific, and begins with a financial statement. The total appropriation for topographic surveys for 1896-97 is \$184,200, an increase of \$25,000 over the appropriation for the year just closed. For geologic surveys and researches there is \$118,700, which includes an item of \$5,000, specifically appropriated for an investigation of the gold resources of Alaska, and for paleontologic work there is \$14,000. For chemical researches the appropriation is the same as that for last year, \$10,000. For hydrographic work there is an appropriation of \$50,000, as against \$20,000 for 1895-96. For the preparation of illustrations and of the report on mineral resources, the engraving of maps, etc., there is an aggregate appropriation of about \$100,000.

In accordance with the plan 30 parties have taken the field or will soon take the field for geologic work, 5 in the New England region, including New York; 5 in the Appalachian region; 2 in the Atlantic Coastal Plain region; 5 in the Interior or Mississippi region; 4 in the Rocky Mountain region, and 8 in the Pacific region. The mining districts of the Appalachian and Rocky Mountain regions will receive special attention, though areal mapping and other work will go on in all directions, as heretofore.

The paleontologists will engage in the determination of faunas and floras, especially those of the coal regions of the Appalachians and Rocky Mountains, and a study will be made of the Cretaceous fauna of Colorado, Utah and Wyoming, with reference to areal and vertical distribution, for the purpose of aiding the geologists in the solution of problems in areal geology. For this work several of the paleontologists take the field.

The appropriation for hydrographic work has been subdivided, so that \$25,000 will be devoted to the gauging of streams and the determination of the water supply of all parts of the country, a second sum of \$10,000 to the investigation of the subject of artesian wells and underground currents in arid and semi-arid regions, and the remainder to the preparation of reports upon the methods of utilizing the water resources. Work will be done in nearly every trans-Mississippi State and Territory, as well as in New England, Pennsylvania and most of the Southern States.

Topographic work this year will be under the immediate charge of the Director, and will thus be placed on the same footing in that respect with the geologic work. A highly important change will be in the method of making the topographic surveys, a change which will, it is expected, materially enhance the value and extend the field

of usefulness of the topographic maps. It was provided in the Sundry Civil Act, under authority of which the work will proceed, that levels be established above sea level in every area under survey and that these levels be marked on the ground by iron or stone posts or bench marks. Thus accurate levels will be run everywhere in the course of the surveys and monuments established at short intervals. The work done in this way will progress somewhat less rapidly than it has progressed under the old method. The \$25,000 which has been added to the appropriation is expected to meet the cost of doing the work in this way.

There are 30 or 35 triangulation and topographic parties in the field, or about 75 men, all told.

In New York the topographic surveys will be continued on the cooperative basis, the State government having appropriated \$15,000, the Federal Survey to allot a similar sum to the work. There will also be cooperation in Maryland.

The joint topographic and land subdivision survey of the Indian Territory, which has been going on without interruption in the field since May, 1895, will be continued to completion.

W. F. MORSELL.

THE NEW YORK STATE VETERINARY COLLEGE.

By the Legislative acts of 1894, 1895 and 1896 for the establishment and maintenance of a State Veterinary College, New York has taken a notable step in advance. The animal industry of the State is so important and extensive, and the relations of animal diseases so intimately interwoven with human health and well-being that every undertaking whereby the financial and sanitary interests of the State will have the benefit of the knowledge and continued investigations of a body of experts must command the approval of every one. It is believed, too, that the establishment of the

College upon the campus of a great university with the full advantages of its libraries and laboratories and surrounded by the university atmosphere will be of inestimable advantage to it. On the other hand, it will aid the university to have in its midst a group of investigators and students dealing with the great practical problems involved in the live stock interests of the State and the relations of this industry to public health. In a word, it is believed that the atmosphere of a university will inspire and liberalize the College, and the efforts of the College for the information and betterment of the condition of society will have a like beneficial effect on the university, by bringing clearly before it practical problems and the real efficiency of our present knowledge in dealing with great sanitary and financial interests.

The standard for the veterinarians of New York State is very high, and the State school ought naturally to prepare men well for their profession; it has therefore the duties of a professional school. On the other hand, its purpose being to study and if possible eradicate or show the means of avoiding animal diseases and epidemics, it must also be a center of investigation. For this double purpose of teaching and investigation, it has six special buildings in addition to those of the University; and it is believed that under the wise guidance of its Director, Dr. James Law, who has served the State and the Nation so well and efficiently in the past, that its opening in the coming autumn will mark another milestone of progress in the State. The following have been already appointed upon the staff of the College:

1. For director of the State Veterinary College and professor of veterinary medicine, principles and practice, zymotic diseases and State medicine: James Law, F. R. S. V. S. of Great Britain; professor of veterinary science in Cornell University;