

MEETING OF THE IOWA ACADEMY OF SCIENCES.

THE eighth annual session of the Iowa Academy of Sciences occurred in Des Moines, Iowa, Dec. 26 and 27, 1893, and was one of the most largely attended and profitable in the history of the Academy. About thirty Fellows were in attendance, and over forty papers were presented.

The officers elected for the coming year were: Dr. L. W. Andrews, President; Prof. H. W. Norris and Dr. C. R. Keyes, Vice-Presidents; Herbert Osborn, Secretary-Treasurer; and Professors Arey, Hendrixson and Nutting additional members of the executive committee. Dr. L. W. Andrews presented a paper on the "Assumption of a Special Nacent State," in which he concluded that the assumption of such a condition is the survival of an obsolete doctrine and that it explains nothing which cannot be as well explained without it. In another paper he treated of some peculiarities of Ferric Sulphocyanate, discussing them from a physico-chemical basis.

Prof. A. A. Bennett made a verbal report upon certain work done in the Chemical Laboratory of the Iowa Agricultural College and called attention to the methods in vogue in instruction in chemistry.

Prof. W. S. Hendrixson, of Grinnell, Iowa, discussed "The Electrolysis of Silver," detailing a method by which pure silver could be obtained in a rapid and easy way, and, in another paper entitled "Some Laboratory Apparatus," he described several inexpensive forms, one of which was for the distillation of water.

Prof. G. W. Bissell presented some notes on experimental engineering at the Iowa Agricultural College, giving the results of some studies, the result of which can be used to advantage in the designing of certain kinds of machinery.

Prof. S. Calvin, of Iowa City, discussed the "Geological Position of Benettites Dacotensis, MacBride," with observations on the stratigraphy of the region in which the species was discovered. This was a careful description of the geological features of the region of Hot Springs, South Dakota, with the conclusion that this fossil belongs to the Cretaceous.

Dr. C. R. Keyes read a paper upon the "Derivation of the Unione Fauna of the Northwest." He compared the faunæ of different river basins and discussed at length their relations and derivations. In discussing the paper Professor Shimek, of Iowa City, called attention to the similarity of the Unione Fauna of eastern Nebraska and eastern Iowa, whereas in central and western Iowa these forms are much less plentiful.

Prof. J. L. Tilton, of Indianola, discussed the "Origin of the Present Drainage System of Warren County." The present river valleys and larger ravines fit into the pre-glacial valleys, while in the smaller divisions only do we find erosion without regard to the pre-glacial configuration of the country.

H. F. Bain, of the Geological Survey, in a paper on "The Structure of the Mystic Coal Basin," presented data from a number of different sections, showing a remarkable persistence of character in the coal strata at different points, which has had a very important bearing upon the development of the coal industry of southern Iowa. In another paper he gave a careful record of the strata penetrated in the boring of the "Deep Well at Sigourney." These borings of nearly two thousand feet penetrated the various formations to the "St. Peters" and entered the Oneota.

E. H. Lonsdale, of the Geological Survey, in a paper entitled "Southern Extension of the Cretaceous in Iowa," presented the results of an extended examination of the southwestern portion of the State, in which he has been able to determine the occurrence of Cretaceous deposits

at points considerably farther south than hitherto recognized.

A. G. Leonard, on the "Zinc Deposits of Northeastern Iowa," showed that these deposits have proven quite valuable and are being extensively worked, occupying the same localities as the lead deposits, which at one time were worked with profit, but have for a number of years been practically abandoned. He also spoke of "Satin Spar from Dubuque, Iowa," and exhibited some very handsome specimens of this mineral.

H. A. Jones, of Grinnell, Iowa, in a paper on the "Coal Measures in Powesheik County," indicated the location of coal seams and coal measure strata in the vicinity of Grinnell and at other points in the same county.

Prof. T. H. McBride, of Iowa City, presented some very interesting "Notes on North America Cycads," in which he described the occurrence of a remarkable new species of Benettites found in South Dakota. He also showed photographs of a large specimen of the fossil and a specimen of one of the living species for comparison. In another paper he discussed the "Distribution of *Rhus typhina*."

The presidential address by Prof. L. H. Pammel was devoted to a discussion of bacteria, their relation to modern medicine, the arts and industries. It was a very comprehensive and interesting account of the historical development of bacteriology and of the relations which these organisms bear to modern medicine and to various important industries. He also presented the following papers: "The Powdery Mildew of the Apple," "Further Notes on *Cladosporium carpophilum*" and "Notes from the Botanical Laboratory of the Iowa Agricultural College."

Prof. H. W. Norris, of Grinnell, in a paper on the "Development of the Ear of *Necturus*," presented the results of a very careful study of this organ and exhibited drawings of sections and also, for comparison, reconstructions of the ear of *Amblystoma*.

Prof. B. Shimek, of Iowa City, in "An Additional List of Iowa Mollusca," recorded a considerable number of species additional to the list which he published some years ago. He also presented a paper and exhibited specimens illustrating the variations in certain Succinidæ occurring in the loess, comparing them with living forms and showing conclusively the great range of variation in certain species. He considers these shells an important factor in determining the age of the loess formations.

Prof. C. C. Nutting, of Iowa City, gave two anatomical papers, one devoted to the "Vascular Supply of the Teeth of the Domestic Cat," in which he showed that the distribution of the blood vessels to the teeth was different from what has been commonly held; the other discussed the "Homology of the Inca Bone."

Mr. Herbert Osborn, of Ames, presented a paper upon the "Distribution of Hemiptera," giving records which extend the known distribution of a number of species, also a paper including laboratory notes, in which he called attention to species particularly useful for laboratory work in this region.

Mr. C. W. Mally, in the "Hackberry Psyllidæ of Iowa," reviewed the species occurring in the state and gave very full descriptions of certain forms which had been studied in detail in their different stages.

Mr. F. A. Sirrine described "A New Species of Plant Louse Occurring on Thorn."

Aside from these papers, which were read, a number of others were read by title and will appear in the proceedings of the Academy, which will be published by the State at an early date.

Resolutions were passed commending the Geological Survey and, also, looking toward the securing of a greater amount of scientific literature in the State Library.