Missouri River Bottom,' by M. A. Carriker, Nebraska City.

'Observations on Traill's Flycatcher,' by M. A. Carriker, Nebraska City.

* 'On the Distribution and Breeding Habits of Bell's Vireo,' by Merritt Cary, Neligh.

'Some Notes on a Chimney Swift Tree,' by J. S. Trostler, Omaha.

'Birds that Nest in the State,' by L. Bruner, Lincoln.

'A Peculiar Disease of Birds' Feet Observed in Western Nebraska,' by E. H. Barbour, Lincoln.

* 'Intestinal Parasites of Nebraska Birds,' by H. B. Ward, Lincoln.

* 'Changes in the Bird Fauna of the Prairies in the Last Thirty Years,' by L. Sessions, Norfolk.

'Additional Observations on the Birds of Northwest Nebraska,' by J. M. Bates, Long Pine.

'Results of a Collecting Trip to Sioux County,' by J. C. Crawford, Jr., West Point.

'Notes on Cherry County Birds,' by J. S. Hunter, Lincoln.

'Notes on Birds from Western Nebraska,' by A. R. Graves, Kearney.

'Notes on Some of the Rarer Birds of Gage County,' by M. H. Swenk, Beatrice.

'Additional Observations on the Keeping of Records,' by R. H. Wolcott, Lincoln.

'Sketch of M. L. Eaton,' by R. H. Wolcott, Lincoln.

* 'Behavior of Birds when driven from their Nests,' by W. Edgar Taylor.

'Miscellaneous Notes.'

After President Trostler had inducted the newly elected President into office, the meeting was adjourned.

EDWIN H. BARBOUR,
UNIVERSITY OF NEBRASKA. *Secretary.*

THE KANSAS ACADEMY OF SCIENCE.

THE thirty-third annual meeting of this Academy was held at Topeka on Dec. 28–29. The following papers were read:

E. B. Knerr reported upon an artesian well at Muskotah, from which a very potable water flows at the rate of fifty-five gallons per minute. This water has a temperature of 56° F. J. T. Willard gave an account of some experiments on the relative digestibility of raw and cooked proteids. The experiments were made upon peas, beans, oatmeal, and flour, with a weak pepsin solution. The general results showed that the proteids in all these articles were much more digestible raw than cooked. While cooking diminishes the digestibility of the proteids, it of course increases that of the carbohydrates. The same author reported some results obtained at the Experiment Station in reference to the effect on the soil of continuous cropping of wheat. The figures given showed that the soil was in a marked degree deprived of soluble phosphoric acid by this continuous cropping. Parallel analyses were made of the soil of a field where wheat had been grown continuously for many years, and of an adjoining field where a variety of crops had been grown, and in the latter this loss of phosphoric acid did not occur. Professor Willard also discussed the effect of oxygen upon organic life. The tests made showed that, as far as the lower animals were concerned, it made very little difference whether they breathed oxygen or ordinary air.

A. E. Langworthy gave a complete report of a diamond drill boring recently made at Atchison. The drill disclosed no less then sixteen seams of coal, having together a thickness of fourteen feet and six inches. The most interesting of these seams are a 36-inch seam at a depth of 1,123 feet, a 28-inch seam at 1,187 feet, and a 15-inch seam at 1,197 feet. The 36-inch vein is a specially good quality of coal. An analysis of the Mississippian limestone, from this boring, is reported by Fred. B. Porter. W. C. Bauer reported on the work of the United States Coast and Geodetic Survey as carried on at Baldwin.

C. N. Gould read a paper on the salt plains of Oklahoma. The largest of these covers an area of nearly 50 square miles. Salt springs are found in various localities, so that a practically inexhaustible supply of salt can be obtained. The same author reported on the 'Southern Extension of the

* Read by title.

Marion and Wellington Formations' and on 'The Dakota Cretaceous of Kansas and Nebraska.' A. S. Hitchcock gave a list of the plants collected in Lee County and other localities in Florida, a region of great interest to the botanist on account of the diversity of the flora.

Warren Knaus, in reporting on the additions to Kansas coleoptera, stated that the number of known species is now 2,500. W. K. Palmer gave an illustrated paper on 'The Value of Geographical Methods in the Teaching of Thermodynamics'; also on 'The use of Ball-bearings for General Machinery and on Principles of Chimney Design.' E. C. Franklin discussed the experiments that he has been conducting during the past year, upon the use of 'Liquid Ammonia as a Solvent.' Many of these experiments, which have already been published, throw a great deal of light upon the new theories of solution. An interesting paper on the Americus limestone, was presented by Alva J. Smith. The area covered by this excellent building stone was discussed, and an analysis given. L. E. Sayre spoke on the 'Medicinal Plants of Kansas.' He mentioned the medicinally valuable plants of the Asclepiadaciae and gave the geographical distribution of the medicinal plants of this genus and the commercial value of the products.

J. R. Mead gave an interesting paper on the peculiar formation known as the 'Flint Hills'; and also one upon the 'Archeology of Catalina Island,' illustrating the latter paper with fragments of ancient vessels. S. W. Williston described a new cretaceous turtle which he has recently studied. A paper from Edward Bartow gave an account of the work being carried on at the Laboratory of the State University on 'Sanitary Water Analysis of the Kaw River' and other streams and miscellaneous sources of supply in the State. Grace B. Meeker read a paper that attracted much interest, upon the wild flowers of the locality that are adapted to cultivation. This brought out a discussion in which much valuable information was elicited. J. W. Beede reported on 'Some Contributions toward a Monograph of the Permian of the central United States' and also, in connection with C. N. Gould on 'The Kansas-OklahomaTriassic and its Invertebrate Fauna.' The same author discussed the 'Atchison Shales.' E. H. S. Bailey gave the analysis of a Mangano-ferrous mineral water, that contains more manganese than any water that has been previously noticed. L. N. Morscher read a paper on 'The Rôle of Isostacy.'

H. P. Cady has devised a new method for the detection of arsenic, antimony and tin. The arsenic is precipitated in a concentrated hydrochloric acid solution by a current of hydrogen sulfid gas, and to the solution hydrogen sulfid water is carefully added, when the antimony will be precipitated, and upon the further addition of the same reagent tin will be precipitated, so that at the end of the operation there will appear three distinct layers of sulfids of the metals in the test tube. Geo. H. Curtis read a paper on 'The Food of Fishes in central Kansas.' J. C. Cooper reported on some interesting specimens of nodular pyrites.

Several valuable lists were placed on record, as that of 'The Spring Flora of Cowley Co.,' by Mark White; a catalogue of the 'Goss Ornithological Collection' by B. B. Smyth; a list of 'Birds observed in Dickinson County' by D. E. Lanz; a catalogue of the 'Crayfishes of Kansas' by J. A. Harris.

The evening of Friday was occupied by the address of the retiring president, A. S Hitchcock, on 'Ecology, or the Effect of Environment upon Plants,' an illustrated lecture on 'The Milky Way,' by E. Miller, and another paper, also illustrated, on 'Mines and Minerals of Kansas,' by G. P. Grimsley.

E. H. S. Bailey.