and the production and development of voice in man and in mammals described. The vocal cords and the glottis in birds were described, and the control, regulation and volume of voice mentioned.

Mr. C. J. Maynard, in commenting on Dr. Goodale's remarks, described the tympaniform membrane of birds, and mentioned that in the wild goose the whole bronchial tube formed one vibrating membrane. SAMUEL HENSHAW,

Secretary.

ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA, MARCH 3, 1896.

MESSRS. MORRIS E. LEEDS and J. S. Stokes on behalf of Messrs. Queen & Co. made communications on the historical development of studies in connection with Röntgen photography, presenting the most advanced views regarding the nature of the X-rays as published by various investigators. They also exhibited a series of fine pictures illustrating the application of the process to the study of biology and the results obtained by the use of quick and slow plates and various developers.

Dr. Egbert having alluded to the results obtained by him from the direct rays of the sun through platinum plates, Mr. Leeds called attention to the desirability of experimenting with the sun's rays reflected from a mirror. If a positive result be obtained it would demonstrate either that it is incorrect to say that the rays cannot be reflected, or those producing Dr. Egbert's effects are not Röntgen rays.

Mr. Joseph Willcox presented a collection of 308 recent and fossil Fulgurs from various localities and geological horizons, illustrating with extraordinary completeness the evolution of the form.

A preliminary announcement was made of the presentation, by Dr. A. Donaldson Smith, of fine collections of mammals, birds, reptiles and insects made by him during his recent exploration of western Somali Land, Africa.

EDW. J. NOLAN,
Recording Secretary.

NORTHWESTERN UNIVERSITY SCIENCE CLUB.

At the meeting of February 7th Dr. Marcy in chair and thirty-three persons present, Dr. W.

A. Phillips presented a study of flaking refuse, based upon an extensive series of flakes and flaked cobblestones from sites of working, near Benton, Lake county, Illinois. The series offers several hundred outer flakes of which over two hundred are used flakes, assignable to six distinct uses from the character of the wear at edge or surface. Outer flakes are greatly in excess of other flakes in the refuse.

A large number of flaked cobblestones and of unused flakes, smaller, but still from the outside of the stone were treated as waste, nuclei and failures respectively. Specializations of the flake for hafting principally are represented, while further shaping of the cobblestone is wanting in a finished product. It is, however, represented in a limited series of rejects, indicating sporadic use of the nuclei. The rocks here used were diabase, found in the beach gravels of Lake Michigan, near sites. The nature and form of flake was due to the shape of the cobblestone. The operation used in producing the flake and illustrated by experimental results was referred directly to the hammerstone; the stone in the hand yielding the flake, the stone struck resting on the ground and serving only for the necessary percussion. A large number of lantern slides were used in illustration. Microscopic sections of rock from which the flakes came, prepared by Mr. Stebbins under Prof. Crook's direction, were exhibited.

A. R. CROOK,
EVANSTON, ILL. *Secretary.*

THE ACADEMY OF SCIENCE OF ST. LOUIS.

At the meeting of March 2, 22 persons present, Mr. F. W. Duenckel presented a comparison of the records of the United States Meteorological Observatory, located on the Government building in the city, with the record for the Forest Park station, showing that the daily minimum averaged decidedly lower at the Forest Park station than in the city, while the wind averaged decidedly higher for the city station.

Prof. E. A. Engler spoke on the summation of certain series of numbers.

WILLIAM TRELEASE,
Recording Secretary.