

The Students' Association of Natural Science. Upsala.

Geological Division.

Meeting, January 28th 1915.

38 persons present.

The following officers were appointed:

ELSA WARBURG, Secretary.

IVAR HÖGBOM, Treasurer.

R. LOOSTRÖM and E. ANDERSSON, Reviewers.

Prof. C. WIMAN read a paper on »Alga-limestone in the Visingsö-formation» (published in G. F. F. Bd. 37, 1915).

Docent G. SAMUELSSON spoke on the climatological significance of the regression of the hazel-limit in Northern Sweden (see this Bull Vol. XIII, 1).

Meeting, February 15th 1915.

30 persons present.

Mr N. SUNDELIN read a paper on the climatological development in fini- and post-glacial times in some Götaland provinces (to be published in S. G. U.).

Meeting, March 1st 1915.

32 persons present.

Docent T. G. HALLE read a paper on the calcareous tuffas of Jämtland (see S. G. U. Årsbok 1915).

Meeting, March 11th 1915.

27 persons present.

Prof. P. QUENSEL reviewed some recent literature about Röntgen-radiation and Crystallographic properties.

Prof. C. WIMAN demonstrated some figures of cranium-fragments and teeth of the peculiar sea-animal *Desmostylus hesperus* from the upper Tertiary, recently discovered in the Northern part of the Pacific.

Meeting, March 29th 1915.

25 persons present.

Docent S. ODÉN spoke on a new method for mechanical soil-analysis, and demonstrated an apparatus which he had constructed for that purpose.

Meeting, April 19th 1915.

21 persons present.

Prof. C. WIMAN spoke on »Giants and Dragons» in the history of palæontology.

Mr R. LOOSTRÖM reviewed a paper by ARTHUR HOLMES on »Radio-activity and the Earth's thermal History» (Geol. Mag. Sec. VI. Vol. II. Nos II & III London 1915).

Meeting, May 3rd 1915.

25 persons present.

Doc. G. FRÖDIN read a paper on »The Ice-shed in Herjedalen and northern Dalecarlia».

Prof. A. G. HÖGBOM spoke on the relation between the present secular land-emergence and the total postglacial emergence in Fennoscandia.

Meeting, May 21st 1915.

20 persons present.

The meeting was arranged as an excursion to Almunge, where Prof. HÖGBOM and Amanuensis O. BÆCKSTRÖM demonstrated the area of alkaline rocks described by Quensel in this Bulletin (Vol. XII, 1914).

Meeting, September 24th 1915.

28 persons present.

The following officers were appointed:

G. FRÖDIN, Secretary.

IVAR HÖGBOM, Treasurer.

N. SUNDIUS and E. ANDERSSON, Reviewers.

Prof. C. WIMAN read a paper »How the mammal came into existence». He had no own material, his discourse was based on the works of other scientists, chiefly on BROOM, R. »On the origin of Mammals». *Philos. Transact. B.* Vol. 206, 1914.

After a general account of the reduction of the number of bones and the contemporaneous modifications, of those left in the mammals, he discussed the problem of the lower jaw and treated the prevalent s. c. theory of REICHERT. The lecturer was of opinion that the articulation between upper and lower jaw was the same in reptiles and mammals. The malleus-incus articulation belonged doubtless to the mandibular arch and the quadratum was to be looked for in the layer of cartilage on pars articularis squamosi. When a menisk existed, that also might be derived from the quadratum.

It need not be certain that the phylogenetical evolution, as known through the palæontological material, was identical with the ontogenetical development, and the different ontogenetical theories need not altogether exclude each other. Even if REICHERT's theory was right in the main, the cartilage in the squamosum-dentale articulation of the mammals, although histologically different, might possibly originate from quadratum and articulare respectively, as is also the case with the malleus-incus articulation, according to that theory.

In the following an account was given of the development of the lower jaw from the stegocephalians (according to WILLISTON) to the mammals.

Even in now living mammals several bones, which have generally been considered as typical reptile bones, are found in exceptional cases or in the embryos.

The lecturer was of opinion that the vitally important change for the coming into existence of the mammals took place when those reptiles, which were the forefathers of the mammals got their limbs underneath themselves. Through this event the animals became more movable and their stationary habits were done with, which reacted on the intelligence and the largeness of the brain and put greater claim on the respiration, the function of the heart and the metabolism, which in its turn caused the higher temperature of the blood and the pelage.

Even if the mammalian-like Theriodontia were not the forefathers of the mammals, they formed a parallel branch constructed so as to throw light on the development of the mammals, in analogy with the relation between higher stegocephalians and reptiles or between dinosaurians and birds.

Twice in the history of the reptiles it has happened that they have got their limbs underneath themselves. At the one time the dinosaurians

and warmblooded birds came into existence, at the other the Therodontia and the warmblooded mammals.

A third time an alteration in the attitude of the limbs has had a great influence: that was when the forefather of man rose on his hind legs, and in his hands got new possibilities of development.

Meeting, October 7th 1915.

27 persons present.

Prof. A. G. HÖGBOM reviewed ALFRED WEGENERS paper: »Die Entstehung der Kontinente und Ozeane».

Mr E. ANDERSSON gave a relation of his last expedition to Spitzbergen

Meeting, October 21st 1915.

19 persons present.

Mr B. HALDEN read a paper on »The stratigraphy of the submarine occurrence of fossils at Bollnäs» (See G. F. F. Bd. 37, 1915).

Prof. WIMAN demonstrated a vertebra of a *Plesiosaurus* from the Trias of Spitzbergen.

Meeting, November 18th 1915.

39 persons present.

Prof. P. QUENSEL read a paper on »Some features of the highland-tectonics at Kebnekaise, Lapland» The lecture, that will be published, was followed by a lively discussion.

Meeting, December 1st 1915.

23 persons present.

Doc. G. FRÖDIN read a paper on »A new finding of Mammuth in Sweden» (published in G. F. F. Bd. 38, 1916).

Prof. A. G. HÖGBOM spoke on »Some tectonic problems in Jämtland».

Meeting, January 26th 1916.

13 persons present

The following officers were appointed:

G. FRÖDIN, Secretary.

IVAR HÖGBOM, Treasurer.

N. SUNDIUS and I. HÖGBOM, Reviewers.

Doc. G. FRÖDIN read a paper: »Some observations on the land-slides at Göta Älf».

Mr IVAR HÖGBOM spoke on some geological effects of forest-fires.

Meeting, February 10th 1916.

14 persons present.

Prof. C. WIMAN demonstrated some new material of Stegocephalians from Spitsbergen (See this Bulletin Vol. XIII, 2).

Prof. A. G. HÖGBOM reviewed some papers about a recently made deep boring on the Bermudas Islands.

Doc. N. SUNDIUS reviewed DALY's treatise on the origin of the Kiruna- and Loussavara ores.

Meeting, February 14th 1916.

27 persons present. The meeting was hold at the Plantbiological Institution.

Prof. R. SERNANDER spoke on Swedish calcareous tuffas (See G. F. F. Bd. 37, 1915).

Meeting, March 16th 1916.

25 persons present.

Mr B. HALDEN read a paper on »The determination of the Litorina-limit in southern Norrland.

Mr O. TAMM spoke on »Swedish soil-types».

Meeting, April 5th 1916.

19 persons present.

Mr W. WRÅK read a paper on »The result of the Post-glacial erosion» (See this Bulletin Vol. XIII, 2).

Prof. C. WIMAN spoke on some peculiar examples of mass-death in lakes in connection with extraordinary clear water.

Prof. A. G. HÖGBOM reviewed some recent american researches upon the relation between the year-rings of trees and the variations in postglacial clima. (HUNTINGTON: The climatic factor as illuminated in Arid America. Washington 1914).

Meeting, April 17th 1916.

34 persons present.

Prof. A. HAMBERG spoke on »Copper-minerals from Mindouli, French Congo».

Prof A. G. HÖGBOM spoke on the postglacial variations of the clima in Northern Europe (G. F. F. Bd. 38, 1916).

Meeting, May 3rd 1916.

15 persons present.

Doc. G. FRÖDIN read a paper on the Oldengranit and the subcam-brian peneplane in Northwestern Jämtland (See this Bulletin Vol XIII, 1916).

Meeting, May 15th 1916.

10 persons present.

Mr S. ROSÉN spoke on the Graptolite-fauna in the Gothlandium of Östergötland.

