

The Students' Association of Natural Science. Upsala.

Geological and Physico-Geographical Division.

Meeting January 31st 1910.

28 persons present.

The following officers were appointed:

P. QUENSEL, Secretary.

B. HÖGBOM, Treasurer.

E. SCHÖN and B. HÖGBOM, Reviewers.

Mr J. P. GUSTAFSSON read a paper on some solifluction phenomenas.

Meeting February 21st 1910.

25 persons present.

Mrs N. ZENZÉN, P. GEIJER, R. LOOSTRÖM and N. SUNDIUS gave an account of their investigations of the structure of the Kiruna district (see GEIJER, P. A., Igneous rocks and iron ores of Kiirunavaara, Luossavaara and Tuolluvaara. — Scientific and practical researches in Lappland arranged by Luossavaara-Kiirunavaara Aktiebolag. Geology of the Kiruna district 2. Stockholm 1910).

Meeting March 7th 1910.

36 persons present.

Mr A. G. HÖGBOM demonstrated an iron-meteorite, found in Pajala in 1907 and presented to the institution by Mr H. LUNDBOHRM (see this Bull. Vol. IX).

Mr O. SJÖGREN read a paper on the glacial geology of the Kiruna district (see SJÖGREN, OTTO, Bidrag till Kirunaområdets glacialgeologi, Kirunaområdets geologi 3. Stockholm 1910).

Meeting March 17th 1910.

25 persons present.

Mr G. SAMUELSSON spoke on his investigations of Scottish Peat Mosses (see this Bull. Vol. X).

Mr C. BENEDICKS read a paper on meteoric iron and the origin of its structures, first giving an account of the physico-chemical circumstances necessary for the crystallisation of the meteoric iron, and then describing some experiments by which he, from a solution of iron-nickel, had been able to produce on a synthetic way many of the structures characteristic of the meteoric iron (see Reg. Soc. Ups. Vol. II, Fasc. II, 1909).

Meeting April 4th 1910.

27 persons present.

Mr A. HAMBERG read a paper on the Sarjek-mountain, its tectonics and rocks. The lecture was illustrated by a geological map (see Geol. För. i Stockholm Förh. B. 32. 1910 and Congress-guide N:o 9).

Meeting April 21st 1910.

27 persons present.

Mr O. BÄCKSTRÖM reviewed some new papers dealing with volcanic gasses chiefly BRUN's latest papers on the volcanism.

Miss E. WARBURG gave an account of her investigations of the Silurian in the Siljan district and demonstrated a geological map of Nittsjö and its environs in Dalarna (see Geol. För. i Stockholm Förh. B. 32 1910, and Congress-guide N:o 21).

Meeting May 12th 1910.

20 persons present.

Mr A. G. HÖGBOM spoke on the rocks of the Gellivare iron mountain and demonstrated several rock specimens (see Geol. För. i Stockholm Förh. B. 32 1910 and Congress-guide N:o 4).

Mr C. WIMAN demonstrated some technical methods, which he had used when preparing and reproducing carboniferous brachiopods.

Mr R. LIDÉN spoke on glacial and postglacial deposits in some river valleys in Norrland. He gave an account of his own preparatory works and laid stress upon the possibility of accomplishing a complete determination of the time, which has elapsed since the last retrogression of the ice (see Geol. För. i Stockholm Förh. B. 33, 1911 p. 271).

Meeting September 22nd 1910.

20 persons present.

The following officers were appointed:

P. QUENSEL Secretary.

B. HÖGBOM Treasurer.

ELSA WARBURG and E. BENGTON reviewers.

Mr C. WIMAN spoke on some fossil Ichthyosauria which Mr O. B. SANTESSON had collected in north Italy (see this Bull. Vol. XI).

Meeting October 6th 1910.

20 persons present.

Mr A. G. HÖGBOM read a paper on the rocks of Ornö Hufvud (see this Bull. Vol. X).

Meeting October 27th 1910.

25 persons present.

Mr S. DE GEER spoke on the meandering of the Oder river at Breslau.

Mr P. QUENSEL read a paper on the tertiary laccoliths in south Patagonia (see this Bull. Vol. XI).

Meeting November 10th 1910.

19 persons present.

Mr R. SERNANDER read a paper on the Benestads calcareous tufa.

Mr C. WIMAN gave an account of some of the more notable palæontological museums on the continent, which he had recently visited.

Meeting November 26th 1910.

58 persons present.

Mr A. G. HÖGBOM made a review of the contents of this Bulletin during the passed 20 years.

Mr T. G. HALLE read a paper on the Gondwana formation on the Falkland Islands (see this Bull. Vol. XI).

Mr C. BENEDICKS read a paper on the basic segregations in the Upsala granite (see Geol. Fören. i Stockholm Förh. Vol. 32 and Vol. 33).

Mr F. ENQUIST spoke on the geological significance of the present distribution of the glaciers in Sweden pointing out the great conformity in this distribution with regard to the height of the mountain tops and their distance from the coast.

Meeting December 7th 1910.

17 persons present.

Mr F. ENQUIST gave some complementary notes to his lecture on »The geological significance of the present distribution of the glaciers in Sweden.»

Miss E. WARBURG reviewed a paper by R. DALY on »The pleistocene glaciation and the Coral Reef Problem» (Am. Journal of Science 1910) and gave an account of the borings at Funafuti. (Coral Reef Committee of the Royal Society. London 1904).

Mr C. WIMAN demonstrated a reconstruction of *Archaeopteryx* and pointed out, that, if the footsteps which OPPEL has described from Solenhofen origi-

nate from *Archæopteryx* which he thought quite possible, the bird must, when moving on the ground, have supported himself with the anterior extremities also. But this cannot have been done in the way shown on the sketch given by WALTHER (*Geschichte d. Erde und d. Lebens* p. 402). The bird must on the contrary have rested on the fore- resp. outside part of the wrist.

Meeting February 6th 1911.

31 persons present.

The following officers were appointed:

B. HÖGBOM Secretary.

E. BENGTON Treasurer.

ELSA WARBURG and O. BÆCKSTRÖM reviewers.

Mr A. G. HÖGBOM spoke on the glacial hydrography of Jämtland (see the XI Geol. Congress, guide N:o 6 and Geol. Rundschau Bd II, H. 3.)

Meeting February 23d 1911.

26 persons present.

Mr. E. SCHÖN read a paper on the occurrence of silurian blocks at Sundsvall (see Geol. För. i Stockholm Förh. Vol. 33, 1911).

Mr A. G. HÖGBOM demonstrated some newly aquired meteorites and gave an account of their composition and the circumstances under which they had been found.

Mr C. WIMAN reviewed SCHLOSSER: »Tertiäre Säugetiere Chinas.»

Meeting March 9th 1911.

34 persons present.

Mr K. ERIKSSON read a paper on some Ice-lakes in southern Jämtland.

Meeting March 23d 1911.

17 persons present.

Mr E. BENGTON reviewed SALOMON: »Die Adamellogruppe», especially dwelling on the basic segregations, which he compared to those in the Upsala granite.

Mr P. QUENSEL spoke on the Predazzo district, chiefly reviewing papers by DOELTER, BRÖGGER, ROMBERG and GORDON, and demonstrated a collection of rock-specimens from the district.

Meeting April 10th 1911.

28 persons present.

Mr R. SERNANDER spoke on the postglacial warm period and the Litorina time.

Mr S. ROSÉN read a paper on some mineral-occurrences in the Håkansboda district, illustrated by a geological map and a collection of minerals and rock-specimens.

Meeting May 10th 1911.

25 persons present.

Mr A. G. HÖGBOM read a paper on some river passages through the Oses of Middle Sweden and gave an account of their origin and the significance several of them had in older and recent times in the history of habitation. The lecture was illustrated by a map of Upsala and environs showing the situation of the habitations in relation to these passages and to the water-courses and their displacement in connection with the changes of level.

Mr E. BENGTSOON read a paper on igneous rocks from the neighbourhood of Gefle.

Mr WIMAN spoke on the mass-death of animals in the ocean.

Meeting September 28th 1911.

15 persons present.

The following officers were appointed.

B. HÖGBOM Secretary.

ELSA WARBURG Treasurer.

O. BÆCKSTRÖM and ELSA WARBURG reviewers.

Mr P. QUENSEL read a paper on the geology of the Juan Fernandez Islands (see this Bull. Vol. XI).

Mr A. G. HÖGBOM described the ice-lake outlet at the northern end of Billingen, through which the south Baltic ice-lake was definitively drained. The ice-river had cut its way in the cambrian sandstone, the plane surface of which here is situated 123 m. above the sea. To the west the rock channel dissected in the sandstone by the river, finishes by a »dead fall» which seems to be situated somewhat lower than 110 m. above the sea, and consequently the level of the sea cannot have been higher than this, when the ice-border withdrew from the north end of Billingen. As at the south end of the mountain the highest level of the sea was some tens of meters higher than this, a considerable rising of the country must have taken place during the time when the ice-border went back over this part. It is, however, curious that Kinnekulle, which mountain became free from the ice later than the north part of Billingen, has got considerably higher figures for the highest level of the sea (125—127 m. according to MUNTHE).

Meeting October 12th 1911.

25 persons present.

Mr C. WIMAN spoke on Ichthyosauria in alpine triassic formations (see this Bull Vol. XI).

Mr B. HÖGBOM communicated some observations on the quaternary geology of Spitzbergen. On account of some finds of *Empetrum* with ripe fruits he criticized some of the statements concerning Spitzbergen, which GUNNAR ANDERSSON had given (Die Veränderung des Klimas seit dem Maximum der letzten Eiszeit, Stockholm 1910) and held forth the indefensibility of his conception, that the *Mytilus* time followed directly on the Ice age. Further, an account was given on some desert-phenomenas in the interior of the fiords, such as the weathering out of salts, desert-weathered stones etc. (The latter phenomenas are described in this Bull Vol. XI).

Meeting October 26th 1911.

18 persons present.

Mr O. BÆCKSTRÖM was appointed secretary.

Miss E. WARBURG spoke on a block-section in a channel 1,5 km. south of the church at Gräsgård, Öland (MUNTHE, H., Beskrifn. till kartbl.: Ottenby. Sveriges Geol. Unders. se Ac N:o 7). This consists of limestone sections separated by moraine marl, the largest of *Macrurus*-limestone dipping 20° — 25° towards the east and, according to the figure given by MUNTHE, in the east corner in connection with *Palæoporella* limestone. This latter rock is, however, not mentioned in the text and had not been observed by the speaker. The east part of the section consists of *Palæoporella* limestone, dipping about 25° towards N. W. and the westernmost layers, which are vertically raised, form according to MUNTHE the following section.

1. *Palæoporella* limestone.
2. Grayish-green marl-limestone.
3. Reddish-brown marl-shales.

The marl-limestone (2) appeared to be typical *Macrurus*-limestone containing some of the more common fossils. As to the reddish-brown marl-shales they were found not to belong to the section but consisted of pieces of shales, probably red *Trinuclæus* although without fossils, scattered in the moraine marl.

In connection with the foregoing a piece of red *Leptæna*-limestone found as erratics in the same channel was shown. This limestone was petrographically very like *Leptæna* limestone from the Siljan area, and the blocks

previously found on Öland have quite another character and are spread much further to the north on a very limited area (see J. G. ANDERSSON, *Über Blöcke aus dem jüngeren Untersilur auf der Insel Öland vorkommend. Öfversikt af K. Vet. Akad:s Förh. 1893*).

Mr A. G. HÖGBOM spoke on »Some problems about the sparagmite formation of the Scandinavian mountain range». He first gave an account of the investigations made by Prof. ROTHPLETZ at the lake Mjösen. The latter had come to the result, that the upper part of the sparagmite formation, which previously had been considered as normally overlying the Biri-limestone, had got its present place through a thrust movement. The fossils found in the Biri-limestone, which were considered to be calcareous algæ, should indicate that this formation is connected with the cambro-silurian formation. The speaker drew a parallel between this formation and the Dal-formation and laid stress upon the necessity of a revision of the geology of the sparagmite formation from those points of view, which had been brought forward since these parts were first surveyed.

Meeting November 9th 1911.

27 persons present.

Mr A. BYGDÉN read a paper on the changes of level at the coast of Sweden during the latest tens of years. After a history of the older determinations of the rate of the changes of level, the speaker gave an account of the methods, which generally are used when calculating the yearly change of level out of a series of yearly media for the level of the sea, and communicated thereafter the results he had got of his calculations with material from the Swedish mareographes. Although this material as yet is not big enough to get quite certain absolute measures of the changes of level, the relation between the figures got for the same period of time shows, however, that an irregular recession of the coast has taken place during the latest decades. In the south parts of the country one is hardly able to prove the rising of the land, in the neighbourhood of Stockholm it is about 0,25 cm. at Gefle 0,6 cm., at Sundsvall 1,0 cm., at Ratan 0,8 cm. per year. The intensity of the rising is thus still greatest in Middle Norrland. Its rate seems, however, to have undergone a continuous decrease during the centuries in which the same has been subject to scientific observation.

At last the speaker communicated at what height finds from the stone-age at Bjursele in the parish of Byske in Västerbotten had been made. The age of these tools can with rather great certainty be said to be 2,000 years b. Chr. On the presumption that the place which, according to a levelling made

last summer, is situated at about 51 m. above the sea, about 4,000 years ago was situated quite near the surface of the sea, the secular rising should thus as an average be 1,25 m. As the change of level in this tract during the latest centuries has been about 1,0 m. in 100 years, the same must, if this presumption is right, have been somewhat faster before.

Meeting November 29th 1911.

20 persons present.

Mr WIMAN reviewed a paper by A. HOEL and HOLTEDAHL on Quaternary volcanos and hot springs at Spitzbergen.

Mr P. QUENSEL gave an account of some occurrences of copper ore of Corocoro and demonstrated a collection of ore-specimens from there, made by fil i c. I. SEFVE.

Mr C. WIMAN spoke on a find of Rhinoceros and mammoth in a ozokerite-mine in Galizien.

Mr P. QUENSEL demonstrated the new projection apparatus, which the Geological institution had procured.

