

currence of native copper and other copper minerals in the hematite ore of the Montana Mine, Soudan, Minnesota. The copper occurs in a thin seam and, in smaller amount, in cavities of the fractured ore. The original mineral of the group is native copper. This has been altered extensively to cuprite, malachite and, in more limited quantity, azurite. These minerals are found penetrating the ore for a distance of five or six feet below the seam and horizontally for a distance of eighty feet. None of the secondary minerals occur above the native copper. All the minerals are exceptionally pure. Some specimens of the copper show former crystals, the faces of which are now heavily coated with secondary products.

Attention was called to the very unusual association of these minerals. So far as the writer is aware, no similar occurrence has been recorded from the iron mines of the United States.

The second topic included several charts illustrating the glacial geology in the vicinity of Taylor's Falls, Minnesota. At this place the line of separation between the so-called eastern and western drift is very sharply defined. The course of the St. Croix river seems to be determined by the mutual adjustments of the eastern and western ice lobes. The moraine made up of typical eastern drift forms a close border along the east bank of the river for several miles, while typical modified western drift borders the west bank and, in at least one point, crosses the river. The combined effect is to force the river over the southwestern extension of the copper-bearing diabase of Keweenawan age exposed in this vicinity. It was further shown that the eastern drift occurs both below and above the western, arguing a readvance of the eastern lobe of ice upon the area of the receding western sheet. It was also shown that partially stratified early drift occupies a position so far below the average elevation of the sandstone surface in the present river gorge that it seems to indicate the location of a pre-glacial stream course at this place. Glacial action simply deepened this course and made it more permanent by directing through it a great glacial river. It was further pointed out that the original topography

of the country was such that any flow of ice from the north or northeast would concentrate exceptional eroding force in the gorge of the St. Croix in the vicinity of the present falls.

JANUARY 30TH, 1897.

At this meeting Mr. George W. Becker reviewed some of the points in the geology of northern Georgia. Facts derived from personal observation upon a recent visit to that locality were discussed at some length. These related chiefly to the methods employed in gold mining, to the value and extent of the asbestos deposits of Yhona Mountain, and the occurrence of corundum in northern Georgia.

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Secretary.

#### NEW BOOKS.

*Zeit-und Streitfragen der Biologie.* OSCAR HERTWIG. Jena, Gustav Fischer. 1897. Heft II. Pp. iv+277.

*Beiträge zur Kenntnis der Septalnectarien.* J. SCHELWIND THIES. Jena, Gustav Fischer. 1897. Pp. 87 with 12 plates. 15 M.

*Beiträge zur Lehre von der Fortpflanzung der Gewächse.* M. MÖBIUS. Jena, Gustav Fischer. 1897. Pp. viii+212. 4.50 M.

*Kainogenesis als Ausdruck differenter phylogenetischer Energien.* ERNST MEHNERT. Jena, Gustav Fischer. 1897. Pp. 165 with 3 plates.

*Angewandte Elektrochemie.* FRANZ PETERS. Vienna, A. Hartleben. 1897. Pp. 338. 3 M.

*The Forcing Book.* L. H. BAILEY. New York, The Macmillan Company. 1897. Pp. xiii+266. \$1.00.

*Analysis of the Sensations.* ERNST MACH, translated by C. M. WILLIAMS. Chicago, Open Court Publishing Company. 1897. Pp. viii+208. \$1.25.

*Eclairage.* J. LEFEVRE. Paris, Gauthier Villars et fils, Masson et cie. 1897. Pp. 180.

*Les succédanés du chiffon en papeterie.* Paris, Gauthier Villars et fils, Masson et cie. Pp. 173.

*Glaciers of North America.* I. C. RUSSELL. Boston, Ginn & Co. 1897. Pp. x+210.