

action of the sun until the ice on all sides had disappeared leaving an island or detached portion of ice, thickly covered with rocky fragments, and often surrounded by a deep layer of similar material left by the more rapidly melting ice. The drainage channels abundant along the margin of the ice sheet often aided no doubt in detaching such blocks of ice.

As these masses melted down, their loads of debris would shoot down the sides, forming a rim, while the core, as it melted, would leave a hole or cavity, often reaching much below the general level of the surface.

Kettle holes are so characteristic in form that they may be easily recognized, and are indications of morainic materials that almost anybody can appreciate and understand. On the west side of Lake Maxinkuckee, between Marmont and the Arlington station there are seven or eight kettle holes ranging from 100 to 300 feet in diameter and from 4 or 5 feet to 25 feet in depth. Some have been partially cut away by the lake, others are quite perfect. One near the end of Long Point has been about one-half cut away, and the big ice house of Holt & Co. occupies a portion of an old kettle hole. The lake itself doubtless occupies a portion of an old drainage channel, the deeper portions being simply old kettle holes. It is interesting to study these remains or relics of the glacier, so symmetrical in form, so perfect in outline that they seem as if made but yesterday, as if fresh from the hand of the builder, making one feel sure that the ice is just over them a little way, and that the hills have just barely had time to clothe themselves with verdure since the ice king yielded up his scepter to the sun.

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A RELIEF MAP OF ARKANSAS. By T. F. NEWSON.

[ABSTRACT.]

In 1893 Dr. J. C. Brammer constructed a relief map of Arkansas for the Arkansas exhibit at the World's Fair. The horizontal scale used was three miles to the inch; the vertical scale was 2,000 feet to the inch.

Topographic maps of the entire State were first made. These were cut into sections, and placed on small blocks cut to fit them. Pins were driven through the sections at prominent points, and were then cut to the proper vertical scale. These pins were the guiding points in molding the map, which was done in ordinary molders' clay. After being molded the separate blocks were fitted together, forming the complete model of clay, from which a plaster of Paris negative was cast. From the negative the positive or final cast of the map was made.