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Thomas County Diatomite

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THOMAS COUNTY DIATOMITE

BY CLARENCE J. ELMORE

In July, 1913, the attention of the writer was called by Professor E. H. Barbour to a deposit of diatomite in Thomas County. A sample of the material had been sent to the Geological Department of the University of Nebraska by Mr. J. N. Neely of Thedford for identification. Later, a visit was made to the deposit by the writer in the interest of the Nebraska Geological Survey.

It is located on the ranch of Mr. J. M. McMillan, about twelve miles northeast of Thedford. It is in a depression about five acres in extent, surrounded by sand hills. At one edge of this depression about a foot of the surface soil had been removed from a circular area about ten feet in diameter, exposing a layer of diatomite about eighteen inches in thickness. The material varied in consistency from an entirely unconsolidated condition to that of hard limestone, the harder portions occurring as nodules from an inch to a foot or more in diameter scattered throughout the unconsolidated portions. These nodules occur promiscuously in the layer and do not seem to be more numerous at one depth than at another.

There is practically nothing in any of the material except calcium carbonate and the siliceous shells of diatoms. The amount of calcium carbonate varies from 14 per cent in the unconsolidated portions to 81 per cent in the nodules. The hardness of the nodules, however, is not in exact proportion to the amount of calcium carbonate. The hardest nodule contained 71 per cent of the carbonate while the one containing the largest amount of it, 81 per cent, was somewhat softer. The carbonate in the unconsolidated portions varied from 14 per cent to 57 per cent.

The species found in the lower part of the layer are identical with those in the upper part, and all of these species are found living now in fresh water in Nebraska. The aggregation of species in this deposit is strikingly like that now living in the lakes and rivers of the sand hills, and suggests that this depression was once a lake like some of those still remaining in the region. That it is not the bed of a recent lake now slightly covered by drifting sand is shown by the fact that the deposit is entirely free from sand. Beneath it

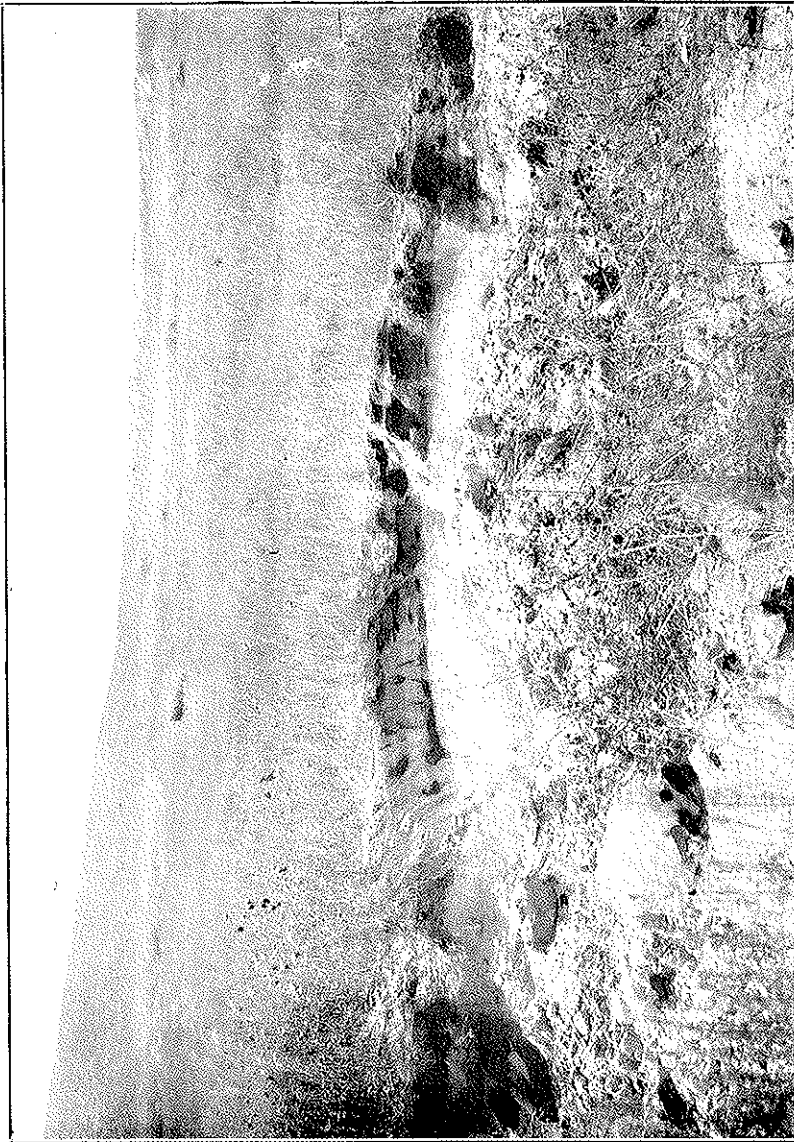
is a layer of coarse sand and above it is the fine sand of which the sand hills are composed, but there is no trace of sand in the layer itself. It must have been deposited before the sand of Nebraska had begun to drift, or in a lake so large that drifting sand could not reach it.

The following species were found in the deposit:

Achnanthes hungarica, *Amphora ovalis*, *Cocconeis placentula*, *Cyclotella meneghiniana*, *Cymbella gastroides*, *Cymbella cistula*, *Cymbella lanceolata*, *Cystopleura gibba*, *Cystopleura sorex*, *Cystopleura turgida*, *Cystopleura zebra*, *Cystopleura zebra proboscidea*, *Denticula elegans*, *Encyonema prostratum*, *Encyonema turgidum*, *Eunotia lunaris*, *Fragilaria capucina*, *Fragilaria construens*, *Gomphonema augur*, *Gomphonema gracile*, *Gomphonema montanum*, *Lysigonium varians*, *Navicula ambigua craticula*, *Navicula amphibola*, *Navicula bacilliformis*, *Navicula brebissonii*, *Navicula cryptocephala veneta*, *Navicula cuspidata*, *Navicula dicephala*, *Navicula iridis*, *Navicula limosa*, *Navicula major*, *Navicula mesolepta termes*, *Navicula oblonga*, *Navicula radiosa*, *Navicula sculpta*, *Navicula sphaerophora*, *Navicula exima*, *Navicula viridis*, *Nitzschia amphibia*, *Nitzschia amphioxys*, *Nitzschia brebissonii*, *Nitzschia palea*, *Nitzschia punctata*, *Nitzschia spectabilis*, *Synedra capitata*, *Synedra ulna*, *Surirella ovalis*, *Surirella saxonica*.

Grand Island, Nebraska,
September, 1913.

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THOMAS COUNTY DIATOMITE
An exposure overlaid by black soil.

