

four feet deep and readily obtainable either by dredging or by draining the lake.

ABRASIVE
MATERIALS.

Industrial
Field

" In texture it resembled an earthy chalk, it is very fine grained but harsh to the feel, adheres to the tongue, in colour is light greyish white. Heated in a closed tube, it assumes a dark-grey colour, due to the separation of carbon and gives off an abundance of a somewhat ammoniacal, light brownish yellow coloured water, the material evidently containing nitrogenous organic matter. After ignition with free access of air, its colour is reddish white; if treated with hydrochloric acid previous to ignition, the colour is white or at most has a just perceptible reddish tinge.

" When digested, either before or after ignition, with a boiling solution of caustic potash or soda, the silica readily passes into solution leaving a small amount of insoluble residue, which after ignition, has a light reddish brown colour. The insoluble residue readily subsides from the solution. This latter, if the material has been treated before ignition, has a brownish yellow colour, if after ignition, and consequently when free from organic matter, the solution is colourless.

" This sample had been kept in the dry atmosphere of the laboratory for a lengthened period, and was regarded as perfectly air dried. At 100° C., the oxygen of the air exercises a modifying influence upon this material, so that in order to ascertain the correct loss by water at this temperature, it is necessary that the operation should be conducted in an atmosphere of hydrogen or carbonic acid.

"An analysis of the air dried material gave the following results:—

Silica	80.487
Alumina	3.146
Ferric Oxide	0.951
Lime	0.342
Magnesia	0.283
Carbonic Acid	0.011
Phosphoric Acid	"
Potash and Soda	"
Water (combined and hygroscopic and organic matter)	13.321
	98.541

1. Water and organic matter:—

(a). Loss on drying over sulphuric acid	6.535
(b). Loss (in addition to that of a) on drying at 100° C. in a current of pure and dry hydrogen	3.582
(c). Loss (in addition to that of a and b) on ignition (and after correction for carbonic acid)	3.204

Total 13.321