A gramme of the finely pulverized mineral, decomposed by heating with sulphuric acid, with careful exclusion of air, decolorized an amount of potassium permanganate corresponding to 4.79 per cent. ferrous oxide. The water was expelled by ignition and collected in a chloride of calcium tube.

INDURATED CLAY.

Indurated clay from Manitoba.

From Souris City, Souris River, Manitoba.

Structure, compact. Color, light bluish-grey. Lustre, dull. Smooth, but meagre to the touch. Adheres strongly to the tongue. Tough. Somewhat sonorous. Hardness, about 3. Fracture, irregular, occasionally imperfectly large conchoidal. May be ground, with tolerable facility, to a soft impalpable powder, which forms with water a more or less plastic paste. Geological position, Cretaceous—(Pierre formation.)

This specimen was collected by Dr. A. R. C. Selwyn, who at the time of handing it to me expressed the opinion that it would, in all probability, prove an excellent material for the manufacture of building brick; a supposition, the correctness of which has been fully borne out by actual experiment.

For the purpose of brick making, this material requires—agreeably with the present experience—no admixture whatever. In the following experiments it was simply ground to powder—which it readily admits of—mixed into a stiff paste with water, well pugged and then the moulding of the bricks proceeded with. By employing the material in a fine state of division, and forming the bricks under pressure, an article of very close texture may be ensured. The bricks after having been thoroughly dried, were finally burned in the muffle of a cupelling furnace, at a full-red heat. On examination they were found to have retained their form well, having neither warped nor cracked; they were firm and tough; the color, a very pleasing one, may, perhaps, be best described as a very pale brownish-yellow. They were in no wise affected by protracted and repeated immersion in water.

Its adaptability for the manufacture of building and fire brick.

Other of these bricks were inserted in covered crucibles, and these latter placed in an air-furnace, the temperature of which was gradually raised, until, at the expiration of an hour, a white heat had been attained, at which temperature it was maintained for an additional two hours. On opening the crucible the bricks were found to have retained their original form intact, they had neither warped nor cracked, their edges remained perfectly sharp and showed no indication of having undergone even the most incipient fusion. Color, a very pale reddish-brown.

The foregoing experiments tend to show that this clay is well adapted for the manufacture of an excellent building brick, and further, lead to