ABRASIVE MATERIALS.

Infusorial Earth.

"The air-dried material left, on treatment with a boiling solution of caustic potash, 7·994 per cent. insoluble residue of a light reddish-brown colour (after ignition).

"As regards the economic value of this infusorial earth, it may be said to constitute an excellent polishing material; and although no experiments have been made to determine its absorbent power, it may reasonably be expected to prove well adapted for the preparation of dynamite. Again, the extreme facility with which it is dissolved by caustic alkalies (potash or soda) would suggest its advantageous employment for the manufacture of what is commonly known as "water glass" or "soluble glass," a preparation which meets with many important applications in the arts, as for instance, as a cement for the manufacture of artificial stone; for the hardening and preserving of building stones; in fixing fresco colours by the process of stereochromy; as an addition to soap in the preparation of the so-called "silicated soaps," etc."

"It has been desirable to ascertain experimentally its suitableness for the manufacture of bricks in imitation of the so-called "light or swimming bricks." These latter, owing to the porous nature of the silica composing the material from which they are made, combine great lightness with infusibility, and are remarkably bad conductors of heat on which account they constitute for many purposes of construction a valuable building material.

"In these experiments the earth was employed alone as well as in admixture, the addition being in the one case clay (a white pipe-clay) and in the other lime, the material from which the test-bricks were prepared consisting—

In the case of experiment 1. Of the infusorial earth alone.
" " 2. Of a mixture of infusorial earth and clay 95 parts of the former to 5 of the latter.
" " 3. Of a mixture of infusorial earth and clay: 90 parts of the former to 10 of the latter.
" " 4. Of a mixture of infusorial earth and lime: 99 parts of the former to 1 of the latter.
" " 5. Of a mixture of infusorial earth and lime: 98 parts of the former to 2 of the latter.

"The infusorial earth and clay were in an air dried condition; the lime had been but recently prepared. The amount of dried material and water employed to form the various bricks was in all instances the same. The bricks were all moulded of exactly the same size and measured 76 mm. in length, 28 mm. in breath, and 15 mm. in thickness.