

nearly horizontal position of their layers, from their containing silicified wood so distributed, and with its cracks filled by sandstone, &c., as to show that it was embedded in the natural state, and afterwards silicified, and by the irregular pipes or craters passing through the hardest parts of the beds, and apparently the channels of geysers, or fountains of heated water. The date of these aqueous outflows must have been little later than that of the beds of sand, and while they were still unconsolidated, and their drift wood in a recent state. Direct volcanic action is not known in connection with Jebel Ahmar, but volcanic masses of Tertiary age exist near Abu Zabel, between Cairo and Ismailia, and also in the Nubian Desert, which may be of the same age. These have been described by Beyrich, Schweinfurth, and Arzruni, and by Zittel.* They afford the basalt mentioned in previous pages.

The Miocene or "Tongrien" sandstone of Jebel Ahmar may be estimated at 400 feet in thickness. It consists of siliceous sand partially rounded like the desert sand, but with many angular grains, and with the interstices more or less filled in with hyaline silica, sometimes entirely consolidating the mass. In some of the beds are layers of pebbles of quartz, agate, and jasper, many of which are evidently derived from the siliceous concretions in the underlying Eocene limestones. The colours vary from pure white to light red and dull purple, and the rock is often beautifully striped and mottled. From the enormous mass of chips around the hill, and the deep excavations in its sides, these beds of sandstone would seem to have been quarried from the earliest times, and they still furnish materials for millstones and for macadamising the streets of Cairo.

The harder varieties must have afforded the earliest colonists a desirable material for hoes, diggers, hatchets, and war-clubs, and their successors continued to use it largely for hammers and polishers and pestles, as well as for mortars and millstones. But from the earliest periods of Egyptian sculpture and architecture, the beauty and durability of this rock were recognised, and the perfecting of the art of drilling hard stones in the palmy days of ancient Egypt enabled this refractory material to be employed even for the formation of monolithic shrines and colossal statues.

Of the former, a shrine taken from the temple of Pithom,

* *Proceedings of Royal Academy, Berlin, 1882.*