

form and porphyritic in structure; in other cases, they are fragments of other rocks, and are then commonly schistose in structure and irregular in form.¹⁶⁷ In rare examples the component minerals of granite have crystallized with a radial concentric arrangement into rounded ball-like aggregates (spheroidal, orbicular granite).¹⁶⁸ In the centre, as well as round the edges of large bosses of granite, the minerals occasionally assume a more or less perfectly schistose

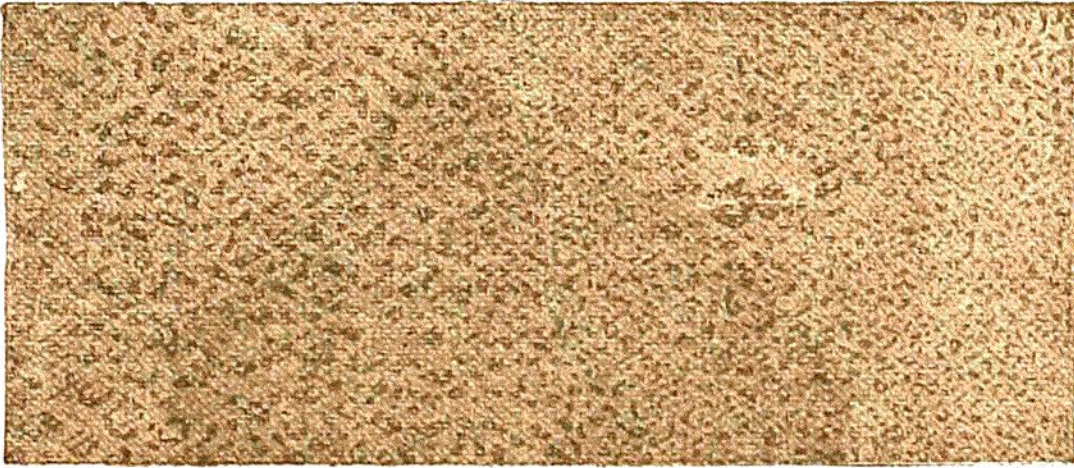


Fig. 31.—Graphic Granite (nat. size).

arrangement. When this takes place, the rock is called gneissose or gneiss granite. (See Book IV. Part VII.)

Differences in the proportions or nature of the component minerals have likewise suggested distinctive names. Of these the following are the more important: **G r a n i t i t e** (biotite granite)—a mixture of pink orthoclase and abundant oligoclase, with a little quartz, some blackish green magnesia-mica, and occasionally with hornblende or augite. **H o r n b l e n d e - g r a n i t e**—a rock with hornblende added to the other normal constituents of granite, and usually poorer in quartz than normal granite. A well-known variety occurs at Syene in Upper Egypt, whence it was obtained anciently in large blocks for obelisks and other architectural works. The well-known Egyptian monoliths are made of it. It was called by Pliny "Syenite"—a name adopted by Werner as a general designation for hornblendic granites without quartz. The rock of Syene is really a hornblende-biotite-

¹⁶⁷ J. A. Phillips, Q. J. Geol. Soc. xxxvi. (1880), p. 1.

¹⁶⁸ W. C. Brögger and H. Bäckström, Geol. Stockholm Förhandl. ix. (1887), p. 37. Hatch, Quart. Journ. Geol. Soc. xlv. (1888), p. 548, and authorities there cited.