and the syenites into compact orthoclase-porphyries, so the diorites have their close-textured varieties, which are comprised under the general term Aphanite, divisible into *Quartz-aphanite* and *Normal-aphanite*. The general characteristic of these rocks is that the constituent minerals become so minute as to disappear from the naked eye. They are dark heavy close-grained masses. They merge into the basic diabases (p. 170).

Trachyte[186]—a term originally applied to modern volcanic rocks possessing a characteristic roughness (τραχύς) under the finger, is now restricted to a compact, usually pale, porphyritic, frequently cellular, rock, consisting essentially of sanidine, with more or less triclinic felspar, augite, hornblende, and biotite, sometimes with apatite, and tridymite. It is distinguished from rhyolite, or quartz-trachyte, by the absence of free quartz, and by the smaller proportion of vitreous or microlitic (micro-felsitic) ground-mass. The sanidine crystals present abundant steam-pores and glass-inclusions, as well as hornblende-microlites and magnetite. In some varieties, the ground-mass appears to be entirely composed of microlites; in others, minor degrees of devitrification can be traced, until the ground-mass passes into a glass (trachyte-glass, obsidian). The trachytes of Hungary have been grouped as *Augite-trachyte*, *Amphibole-trachyte* and *Biotite-trachyte*. Average composition of Trachyte—silica, 60·0–64·0; alumina, 17·0; protoxide and peroxide of iron, 6·0–8·0; magnesia, 1·0; lime, 3·5; soda, 4·0; potash, 2·0–2·5. Average specific gravity, 2·65.

Trachyte is an abundantly diffused lava of Tertiary and Post-tertiary date. It occurs in most of the volcanic districts of Europe (Siebengebirge, Nassau, Transylvania, Bay of Naples, Euganean Hills); in the Western Territories of the United States;[187] in New Zealand. It also occurs among the Carboniferous lavas of Scotland.

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[186] On trachyte, see Zirkel, "Micro. Petrog." p. 143. King in vol. i. of "Explor. 40th Parallel," p. 578. On the relative age and classification of Hungarian trachytes, Szabó, Zeitsch. Deutsch. Geol. Ges. xxix. p. 635, and "Compte rend. Congrès Internationale de Géologie" (1878), Paris, 1880. For the Scottish Carboniferous trachytes see Presidential Address to the Geological Society 1892, and F. H. Hatch, Trans. Roy. Soc. Edin. 1892.

[187] It would appear that much of what has been regarded as trachyte in Western America is andesite, consisting essentially of plagioclase, and not of sanidine. The normal trachytes are now described as hornblende-mica-andesites, and the augite-trachytes are hypersthene-augite-andesites, most of the rest being dacites, and some of them rhyolites. Hague and Iddings, Amer. Journ. Sci. xxvii. (1884), p. 456.