

2. GEOLOGICAL STRUCTURE.

Rocks, their Mineral Characters.—The following are the principal varieties of basalt found on the island :

1. Dark grayish-blue and grayish-black basalt; very compact without cellules; fracture a little conchoidal; no distinct crystallization; no imbedded grains of chrysolite; lustre slightly glistening. Resembles the rock of Cockscomb Hill, Tutuila, page 310.

2. Similar to the above, but a little cellular and containing minute particles of chrysolite.

3. Grayish-blue; no lustre; rough fracture; harsh feel; sometimes very compact, but generally cellular; occasionally contains chrysolite.

4. Dark grayish-blue; containing crystals of chrysolite and augite thickly disseminated; both very compact and cellular.

5. Black ferruginous basalt; very tough; fracture smooth, a little conchoidal; lustre glistening; usually very cellular and containing a few disseminated grains of chrysolite.

6. A grayish dark-blue basalt, porphyritic with very thin tabular feldspathic crystals. Another porphyritic variety, consisting of the same coloured base, speckled white with points of feldspar.

7. Scoriaceous basaltic lava; brown, dark grayish-blue or brownish-red, very light and cellular, or consisting solely of the thin parietes of small spherical cellules. The material of the rock is without lustre and resembles var. 3.

These several kinds are quite common. All but the fifth and seventh occur in the central district of the island, and may be considered as the older rocks of the island. The third and fifth are the usual forms presented by the more recent rocks. The seventh is found in and about the craters, as at Tafua.

The porphyritic varieties (6), and the basalt with imbedded augite (4), are abundant along the rocky coast between Laulii and Solo-solo. The compact basalt (var. 1), is also found along the same coast. Particular localities of the other varieties need not be mentioned, as they are very generally distributed over the island.

Besides the minerals already noticed, the rocks often contain magnetic iron in small grains or crystals. At a few places along the shores magnetic iron sand may be collected by the handful. Five miles east of Apia is one of its localities.