

II-8. ROCKS

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Volcanic rocks were obtained from four stations. The main types are listed in Table II-8-1. Except for these rocks, abundant pumice was obtained from thirteen stations.

From the outer Pacific side of the Ryukyu Islands only one sample was obtained (ST. 382, D125). This is a very porous andesite and may not be *in situ*.

In the Okinawa Trough, rocks were obtained from three small seamounts. Of the three localities, two stations (ST. 381, 385), in the northern part of the trough, are located on the continental side of the Tokara Volcanic Islands, which are the extension of the Tertiary volcanics in Southern Kyushu. From these two stations, olivine bearing hypersthene augite andesites were obtained. These rocks are contaminated by carbonate minerals and iron hydroxide.

Rhyolite and basalt (probably the chilled facies of pillow lava) were obtained from seamount NW of Okinawa Island (ST. 398), in the central part of Okinawa Trough.

Table II-8-1 Rock descriptions

Sample No.	Rock name	phenocryst	groundmass	remarks
D 124-2	ol-hy-aug andesite	pl > aug > hy > iron ore > ol Olivine rimmed by orthopyroxene, and partly altered to become to iddingsite. Augite occurs individually, but also as intergrowth to parallel with the direction of C axis of hypersthene and as mantle for hypersthene core. Hour glass structure is found in augite.	brown glass, pl, orpx, clpx, iron ore	
D 124-3	limestone	pl > aug > hy > iron ore > ol		Contaminated by iron-hydroxide(?).
D 124-4-1	(ol)-hy-aug andesite	Plagioclase phenocrysts are larger than the other ones and more	pl laths, orpx, clpx, iron ore interstitial mesostasis, very fine grained brown mica	
D 124-4-2	(ol)-hy-aug andesite	pl > iron ore > aug > hy	pl, clpx, iron ore, interstitial mesostasis, globular cristobalite patches and small amount of pale brown mica.	Contaminated by iron-hydroxide(?) and clay minerals.
D 125	hy-aug andesite	pl > aug > hy	pl, pale brown glass, small amounts of aug, hy.	Very porous. Including a rock fragment. phenocryst: pl aug hy groundmass: microcrystalline
D 127-1	aug-orpx andesite	pl > orpx > aug Zoned augite. Orthopyroxene is altered to clay mineral.	pl, clpx, orpx (wholly altered to clay mineral), iron ore, interstitial mesostasis (altered)	Altered remarkably. Contaminated by carbonate mineral.
D 127-2	ol-orpx-aug andesite	pl, aug, orpx, ol Orthopyroxene altered to clay mineral. Olivine altered to carbonate + iron ore network	columnar pl (partly altered to carbonate), granular clpx, prismatic orpx (wholly altered to clay minerals and intergrowth with clpx), iron ore, altered interstitial mesostasis.	Contaminated by carbonate minerals and globular aggregation of it is found.
D 134-1	hy-aug rhyolite	pl > aug, hy crystal edge of plagioclase is curved surface. Orthopyroxene may be ferroperssthene from dispersion of optic axis.	very fine-grained and needle-like shaped plagioclase parallel to flow structure, more fine-grained minerals and colorless and transparent glass.	glassy, and large amount of small pores elongated to parallel to flow structure.
D 134-2	(hy)-aug-ol basalt	pl > aug, ol > hy Olivine phenocrysts are larger than the other ones. Mafic phenocryst often shows the embayment phenomenon.	pl, aug, hy, ol, pale brown glass plagioclase often shows swallow-tail shape. Feather-shaped clinopyroxene occurs in glass and consistency of it increase from one side of thin section to another.	Maybe chilled facies. Quartz xenocryst enclosed by clinopyroxene.
D 134-2	Glassy part	microphenocryst: pl, ol, aug, hy. plagioclase rim is more calcic than core, and often wormeaten shape, spinel sometimes including in olivine. hypersthene is very rare.	pale brown glass, pl, orpx, clpx	