

APPENDIX IBASIC ROCKS AND FLOWS

Basic rocks related to the Deccan Trap igneous activity are abundantly recorded in the area. These mostly occur in the following forms.

1. Dykes.
2. Sills.
3. Plugs.
4. Lava flows.

1. Dykes: These almost always occur along the transverse faults which run N-S, NNE-SSW and NNW-SSE, and are obviously emplaced during the development of these dislocations. In all ten such dykes, big and small, have been mapped. Largest dyke is seen extending for 15 km. The average length of the dykes is about 5 km. Generally these dykes do not exceed 30 m. in thickness. On account of the contact effects, the rocks along the junction of these dykes show considerable induration and baking effects. Both coarse and fine grained basic rocks are seen forming these dykes.

2. Sills: Sills are somewhat rare and mostly confined to the domal parts of Chari series. They never exceed

20 m. in thickness and even in extent, they are about 150 m. These are found to be usually quite fine grained.

3. plugs: Basaltic plugs are noted at two places only. ^{is} One ~~in~~ in the western part of the big dome in the west. Two plugs are recorded in the southeast part of the area in Bhuj sandstones.

4. Lava flows: These are seen overlying the Bhuj sandstones in the south right near the southern limits of the area.

PETROGRAPHY:

Typically greyish black in handspecimen, these rocks show considerable variation in grain size. In the sections, these are mostly seen as crystalline rocks with somewhat ophitic texture. Slender laths of plagioclase (An 50) are seen embedded in a granular matrix of augite. Occasionally larger laths and groups of laths of plagioclase impart a sort of porphyritic texture to the rock. Fine grained basaltic varieties are also common in a few dykes. Some specimens show amygdules of calcite. There are little textural and mineralogical differences between the plugs and sills

seen in the domes and the dyke rocks. But the plugs seen in Bhuj sandstones are somewhat alkaline (lamprophyric) containing grains of olivine.

The finegrained basalts which occur as flows, are seen to consist of very tiny laths of plagioclase (labradorite) embeded in a fine granular matrix of pyroxene (augite). Some varieties contain in addition a dirty green indefinite material in the ground-mass. Iron-oxide grains are very numerous, scattered throughout the mass. Generally the basalts are nonporphyritic and very rarely a phenocryst of plagioclase is seen here and there.
