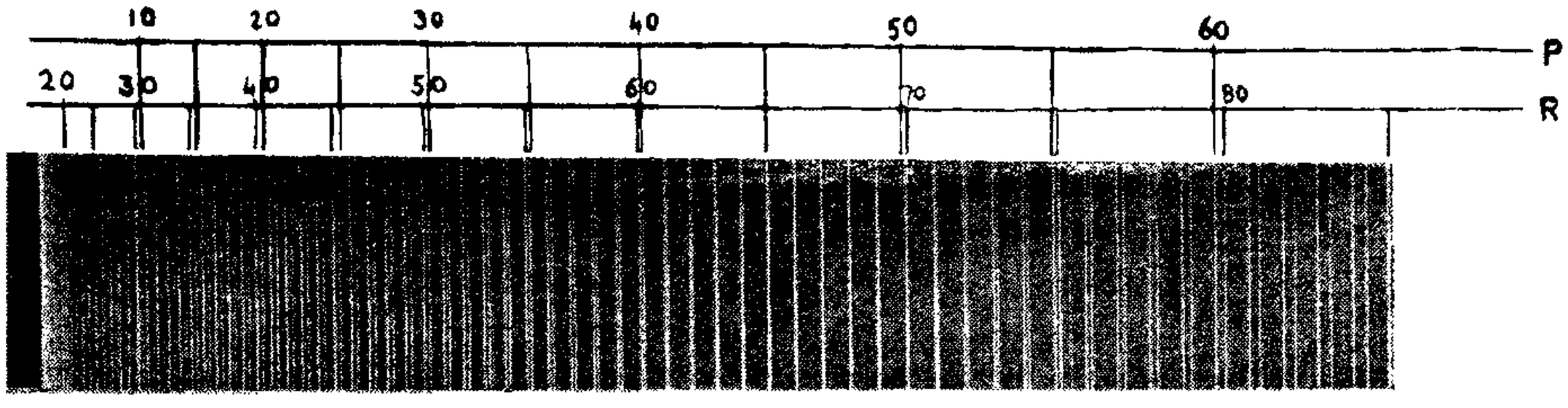

FIG. 1. Rotational structure of the 0, 0 band of the A–X system of BiF.

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SYNNEUSIS TWINNING IN PYROXENE

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THE Mid-Pennar Reservoir Project area (Long. 77° 20′ and 77° 25′; Lat. 14° 50′ and 14° 58′) in Anantapur District of Andhra Pradesh is traversed by dyke swarm cutting across granites, gneisses and amphibolites. A dyke near Ramapuram Temple has an exceptional width of about 200 feet. A small stream course running by the side of the temple cuts through the doletrite, laying bare for observation, the sharp and abrupt contact between the dyke and the granite. At the contact the dolerite shows chilled effects with variation in texture from extreme glassy type to increasing grain size inwards. Samples have been collected along a profile at regular intervals and detailed petrographic study has shown certain interesting results (Prasad and Chakrapani Naidu, 1966).[1] The significant feature revealed in this study, besides progressive increase in the grain size, is a general increase in the incidence of pyroxene twinning in contrast to the plagioclase twinning, from nearer the contacts of the dyke with the country rock towards the middle portion (Fig. 1).

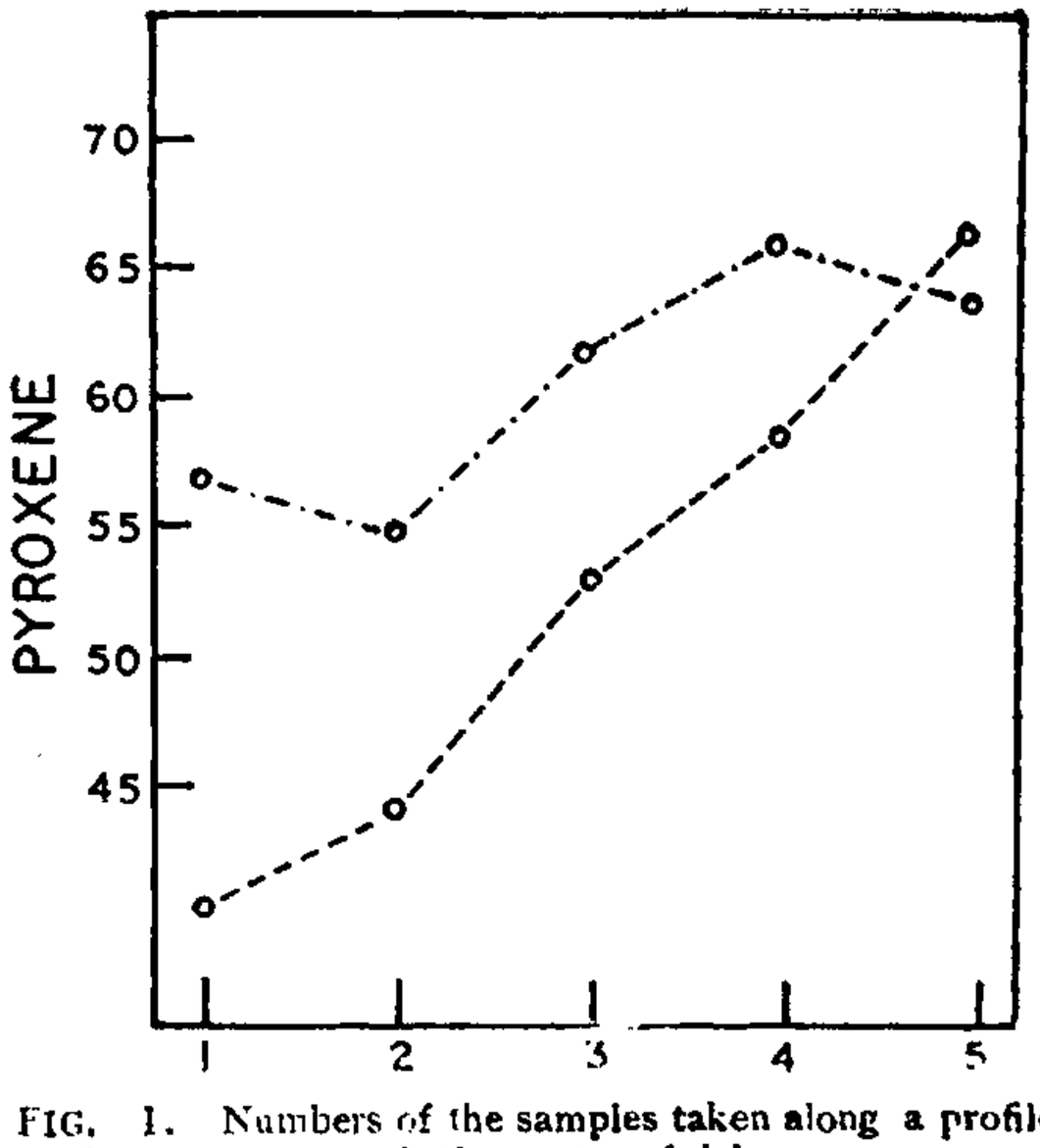

FIG. 1. Numbers of the samples taken along a profile from the contact towards the centre of dyke.
O— — —O Variation in the frequency of twinned pyroxene.
O—·—·—O Variation in the volume percentage of twinned pyroxene with respect to untwinned pyroxene.

The most striking and consistent feature in all the thin sections of the dyke examined is that the pyroxene twins occur in clusters (Fig. 2). They reveal the following characteristics:

1. There is no regular relation between the distribution of twin lamellæ and external morphological form.
2. They are associated with bending, twisting or fracturing of the crystal as is so common with secondary twinning.
3. The lamellæ are not regular and one or two lamellæ terminate abruptly within a crystal independently without showing any sysstematic distribution.

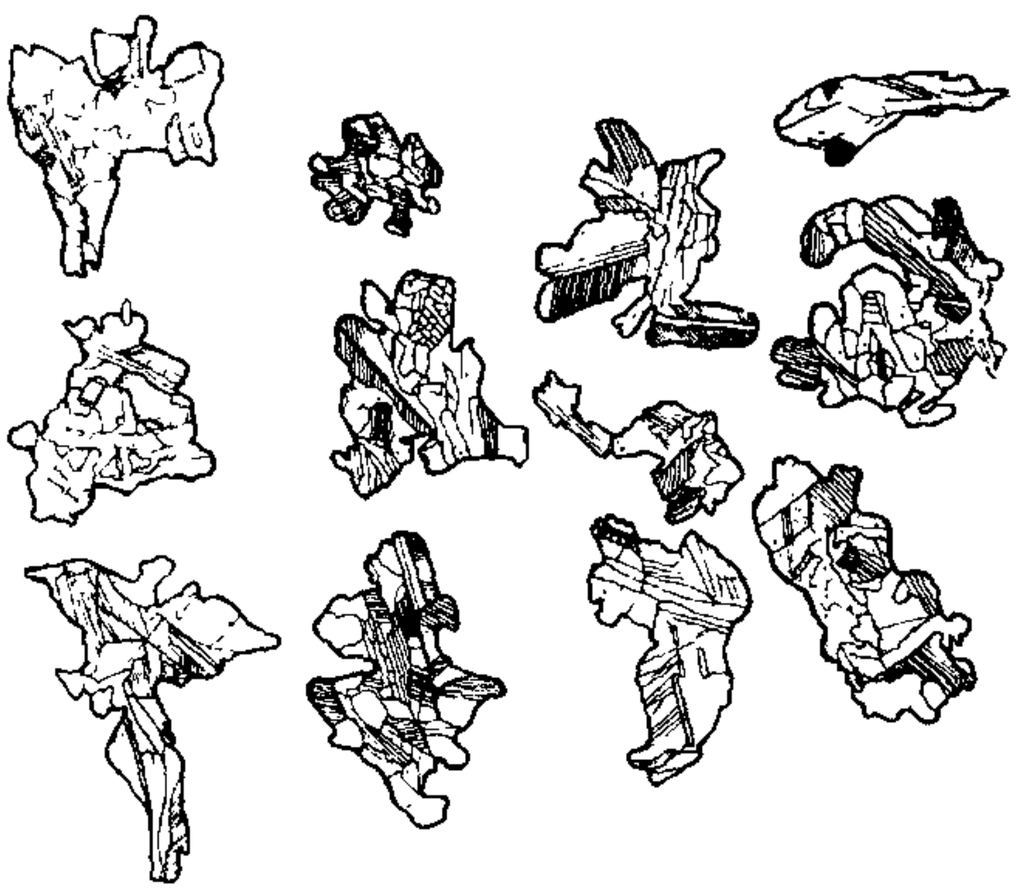

FIG. 2

4. The twinned grains clearly indicate stress or strain directed at certain portions and the crystals are not disturbed all along their projected continuation.
5. The gross outer form of the individual grains or the aggregates of twinned crystals also reveal the secondary nature of the pyroxene twinning.

Secondary twinning includes three types, *viz.*:

(*a*) Glide twins and
(*b*) Transformation twins of Buerger (1945)[2] and
(*c*) "Synneusis" or combination twins Ross (1957).[3]

The third type is much less widely appreciated and is not reported in pyroxene in the literature accessible to the authors; but this genetic type is clearly revealed and prominently displayed by the pyroxene twins in the middle parts of the dyke under study. In the thin sections examined the separate twinned grains are rare or absent. Invariably they occur in glomero-porphyritic clusters with individual twinned grains being in parallel, sub-parallel or random orientation. It appears that twinning behaviour, crystal habit and the nature of the crystal boundaries are affected differently by crystallisation of pyroxene in an essentially solid medium. The occurrence of pyroxene twins in clusters in progressively increasing number away from the contact of the dolerite towards its middle portions suggests that the pyroxene crystals in a solid state have undergone drifting together in an essentially fluid medium of the dolerite magma and combination of crystals to form twins.

ACKNOWLEDGEMENT

Grateful thanks are due to Prof. Earl Ingerson, Rice University, Texas, U.S.A., for helpful suggestions.

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HUMAN SCHISTOSOMIASIS IN INDIA: DISCOVERY OF AN ENDEMIC FOCUS IN THE MADRAS STATE

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WORKERS in the field of parasitology had constantly kept in mind the possibility of the introduction of human schistosomiasis in India by Indian troops and travellers returning, after the first world war, from endemic areas. Sewell[1] observed that the snails belonging to the genus *Bulinus* and *Physopsis*, which were the usual vectors of this disease, did not occur in India. Hence it had been held that human schistosomiasis had no chance of being established in India. But authentic cases of this disease had been reported from time to time from widely scattered localities from Punjab, Poona, Bombay, Goa and Madras.[2-5] However, no endemic focus was discovered from India until recently when Gadgil and Shah[5] reported, for the first time, an endemic focus from Bombay State. Now we have discovered an endemic focus from Madras State.

The endemic focus discovered by us is situated in a village called Tirupparankundram in Madurai District. The village has a population of about 3,000. The drinking water supply is from wells. Besides there is a large tank by name *Saravanappoigai*. The people of the village use the tank for washing after defecation and even discharge urine in it. They use the same water for washing clothes and bathing, thus affording ideal conditions for the spread of schistosomiasis which is a water-borne disease.

About 30% of the people of all ages, both males and females, of this village are suffering from urinary schistosomiasis. Hematuria with