

## PLATES

*Fig. 1.* Parallel schlieren of coarse-grained, plagioclase-rich rock in the peridotite; the rock exhibits splitting along the plagioclase-rich streaks. Joints cut across the plagioclase-rich streaks obliquely, some of them being filled by apparently younger plagioclase-bearing vein material. To the left is coarse rock debris characteristic of the ultramafic regions on Stjernøy.

Eastern slope of Rottenhallerfjell (Stjernøy) near transition of peridotite into olivine-melagabbro.

*Fig. 2.* Well-developed layers of anorthositic gabbro interstratified with a complex of thin melagabbroic layers on decimetre-scale. To the left the width of the layers is still narrower, thus demonstrating the rapid change in the scale of the layering. The smooth and rounded appearance of the rock indicates the passage of ice-masses.

Northern slope of Rottenhallerfjell (Stjernøy).

*Fig. 3.* Gabbro with distinct and rather broad layering; the melagabbroic rock to the right borders on gabbro of about normal composition with a sharp transition. The rock exhibits a perfect flow-texture owing to the parallel arrangement of leucocratic schlieren in the melagabbro and melanocratic schlieren in the lighter variety of gabbro. The schlieren are slightly twisted.

South of Indre Pollen (Stjernøy) at summit 404.

*Fig. 4.* Incipient boudinage of a rigid mafic band in the gneiss which is offset on small faults, whereas the less rigid feldspathic gneisses above and below this band have been deformed in a plastic manner. A thin syenite vein is seen filling a slightly oblique fault under the broken amphibolite layer.

Syeno-gabbroic complex at Nordmandsnes (Photo Føyn).



Fig. 1



Fig. 3



Fig. 2



Fig. 4

*Fig. 1.* Strongly-foliated, fine-grained gabbro gneiss with continuous and perfectly straight intercalations of leucocratic composition, less than 1 cm. wide. The gneiss exhibits a perfect cleavage along the plane of schistosity. In the background is the hornblende landscape of Central Stjernøy with scree-covered slopes.

West of Udsikt fjell (Stjernøy) at summit 795.

*Fig. 2.* Layer of calc-silicate rock with intricate centimetre scale layering of calcite-rich and calcite-poor bands. The surface of the layer is furrowed owing to differences in resistance to erosion. At the left a syenite layer occurs in juxtaposition with the metalimestone layer.

Stjernodden (Stjernøy), at sea-level.

*Fig. 3.* Moderately serpentinized dunite consisting of 95 per cent subporphyritic, slightly-rounded olivine and 5 per cent interstitial grains of augite. The almost extinguished, undulose crystal in the upper right-hand corner exhibits poikilitic intergrowth. In the network of serpentine veinlets a preferred orientation (in approx. vertical direction) can be noted.

Sample T 4.2a Store Kvalfjord valley (Stjernøy).

Nicols +. Magnification 7.5 ×.

*Fig. 4.* Porphyroclastic dunite with rounded grains of olivine, occurring in a fine-grained matrix also consisting of olivine. In the upper left-hand corner a large, disintegrating grain surrounded by fractures suggests a cataclastic origin of this porphyroid rock.

Sample T 4.78 Store Kjerringfjord (Stjernøy).

Nicols +. Magnification 7.5 ×.



Fig. 1

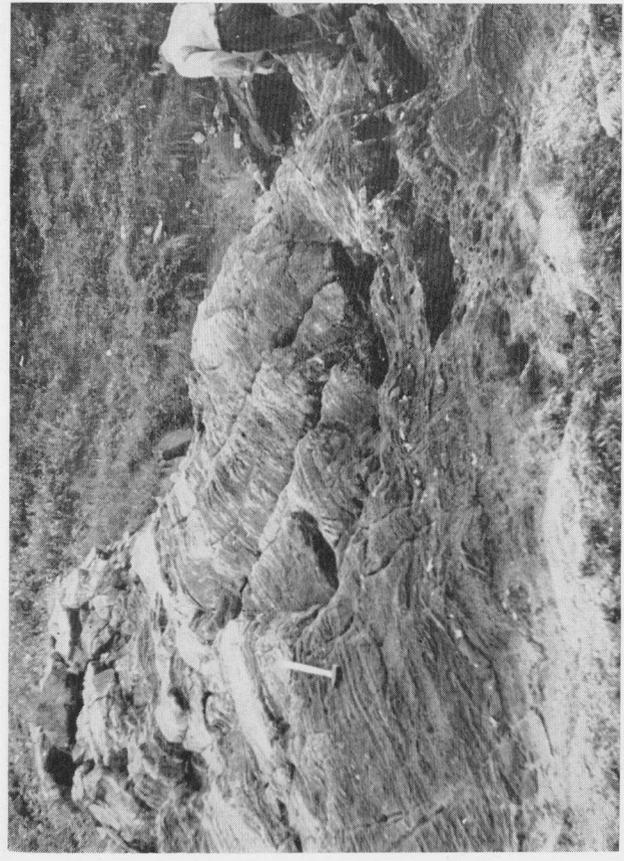


Fig. 2

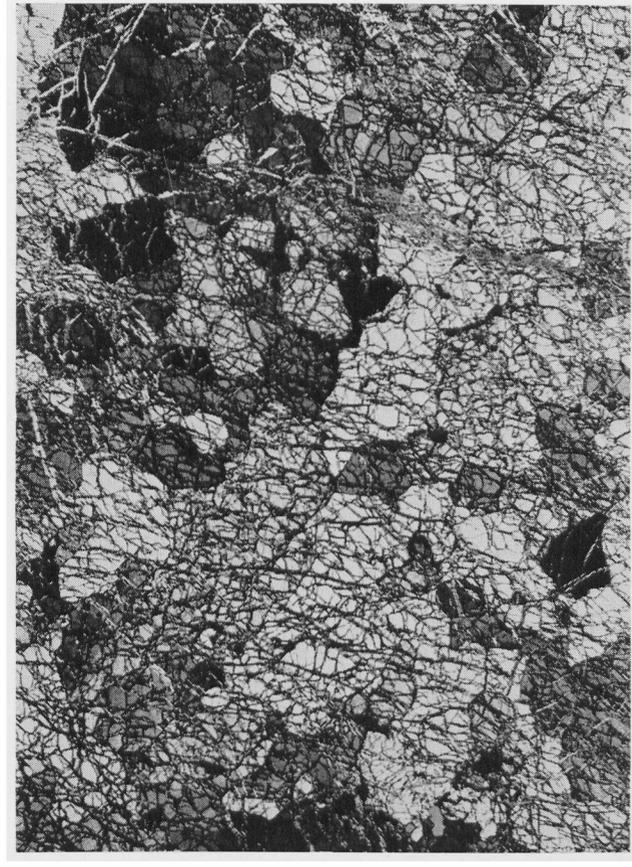


Fig. 3

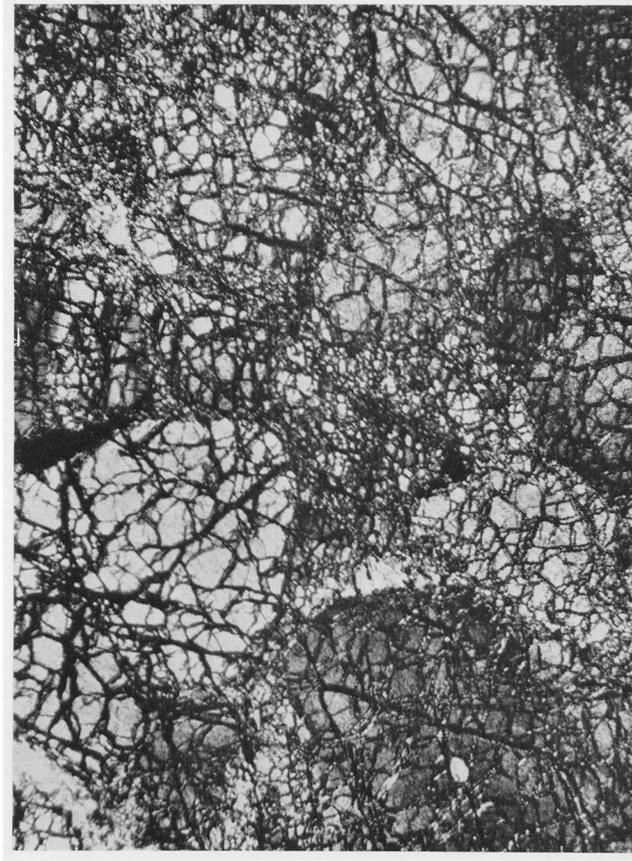


Fig. 4

*Fig. 1.* Heavily serpentinized small grains of nearly euhedral olivine enclosed by augite in pyroxene-rich peridotite. Square to angular inclusions of green spinel are oriented with their long diameters at right angles to the {110}-cleavage of the augite. On the left a zone of such spinel inclusions, densely distributed, bisects the augite-crystal at an acute angle to the main cleavage.

Sample T 4.2b Store Kvalfjord valley (Stjernøy).  
Magnification 50 ×.

*Fig. 2.* Plagioclase-bearing peridotite with magnificent spinel-orthopyroxene symplectite rims between olivine and feldspar. The plagioclase crystal at the lower left is nearly completely enveloped by a spinel-bearing intergrowth. Closer to the olivine, rims of spinel-free orthopyroxene have developed.

Sample T 4.88b Store Kvalfjord valley (Stjernøy).  
Magnification 7.5 ×.

*Fig. 3.* Reaction corona of spinel and orthopyroxene between an olivine crystal in the upper right-hand corner and plagioclase grains at the lower left. A rim of orthopyroxene surrounds the olivine more or less completely at its lower boundary. Along the central and upper margin of the olivine crystal the corona was developed between olivine and augite; here the symplectitic intergrowth is less vermicular, and rounded droplets of spinel occur in the pyroxene.

Sample T 4.64 Rottenhallerfjell (Stjernøy).  
Magnification 25 ×.

*Fig. 4.* A very broad rim of symplectitic orthopyroxene-spinel intergrowth with interspersed grains of spinel (especially at the border of the larger cataclastic orthopyroxene crystal at the upper right). In the intergrowth clinopyroxene can also be found. The intergrowth of this type is less vermicular than that in fig. C3. Around the augite crystal at the left a thin rim of hornblende can be seen in contact with the plagioclase.

Sample T 4.126 Nordmandsnes (Stjernøy).  
Magnification 25 ×.

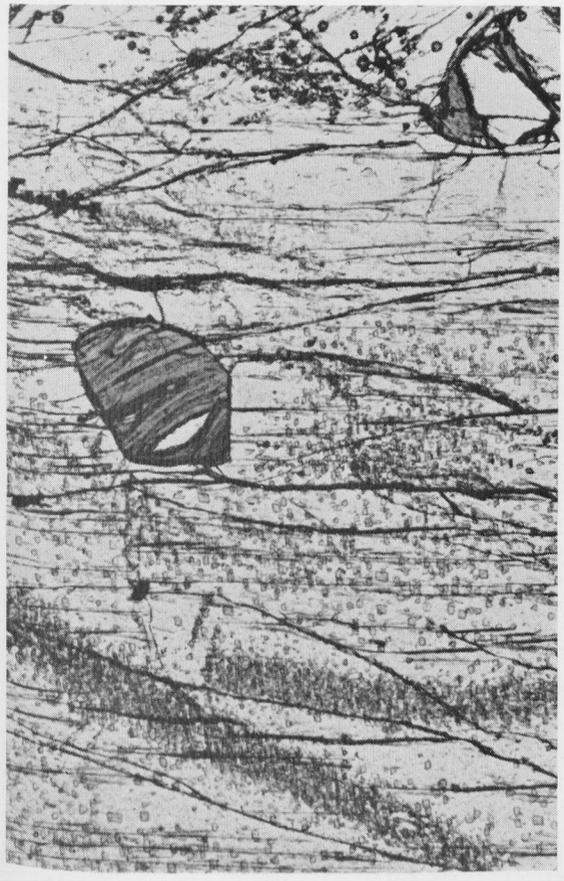


Fig. 1

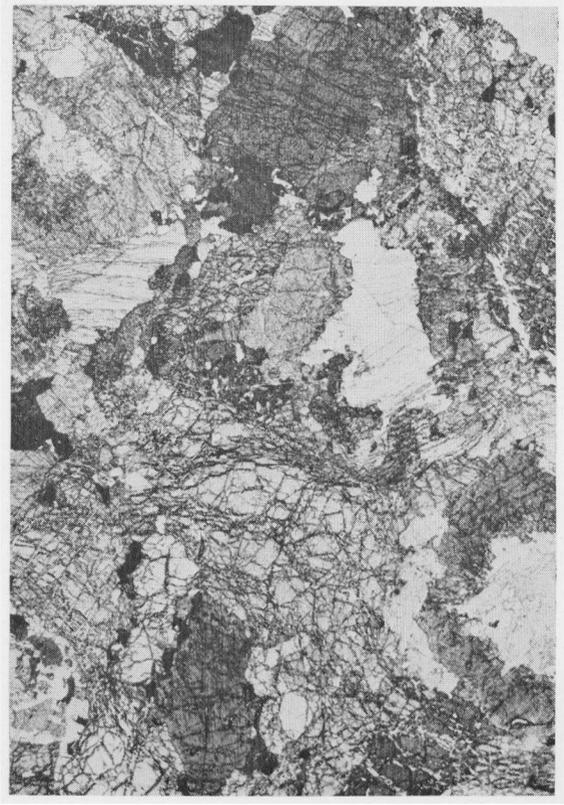


Fig. 2



Fig. 3



Fig. 4

*Fig. 1.* Hypidiomorphic, granular melagabbro with a pronounced foliation due to parallelism of elongated and flattened clusters of mafic minerals. The clusters vary in size from 1 to 2 cm. and consist mainly of augite. It can be noted that small grains of plagioclase occur in the mafic clusters.

Sample T 4.98 Rottenhallerfjell (Stjernøy).

Magnification 7.5 ×.

*Fig. 2.* Leucocratic gabbro with irregular foliation owing to a more or less parallel orientation of mafic clusters 1 to 2 cm. in size; these clusters can be in contact with each other. No single grains of pyroxene are found in the plagioclase-matrix. The pyroxene-aggregate in the upper left-hand corner, containing a fairly large augite crystal at its centre, may very well have been a single grain.

Sample T 4.123<sup>a</sup> Rottenhallerfjell (Stjernøy).

Magnification 7.5 ×.

*Fig. 3.* Anorthositic gabbro with small and thinly elongated clusters of mafic minerals. In the mosaic of fairly uniformly sized plagioclase, fresh and slightly altered crystals can be discerned (indication of crystallization of the plagioclase in two generations?).

Sample T 4.62<sup>b</sup> Rottenhallerfjell (Stjernøy).

Magnification 7.5 ×.

*Fig. 4.* Medium-grained gabbro gneiss of hypidiomorphic, equigranular texture. The sample exhibits an excellent foliation due to the parallel orientation of lenticular mafic clusters, which are almost free of plagioclase. This may indicate that the pyroxene aggregates are fractured pyroxene crystals. The mafic clusters show considerable amounts of primary, hypidiomorphic hornblende.

Sample T 4.41 Sundfjell (Stjernøy).

Magnification 7.5 ×.

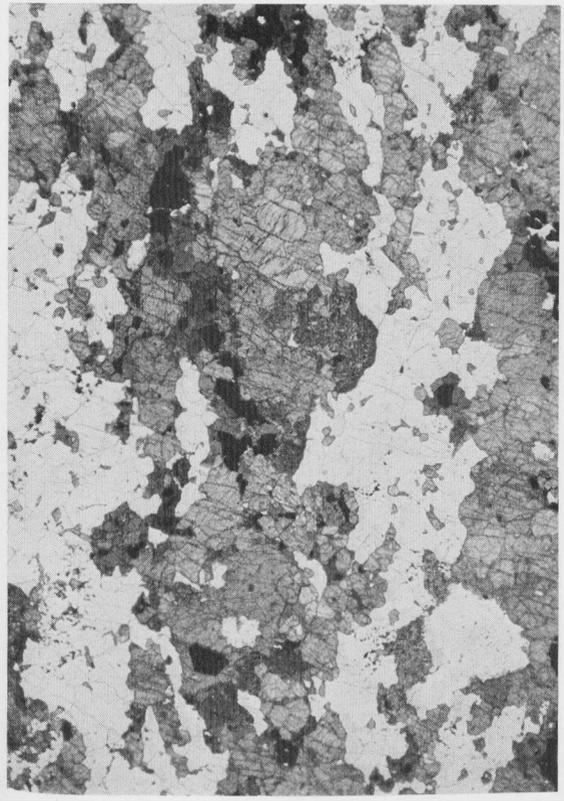


Fig. 1

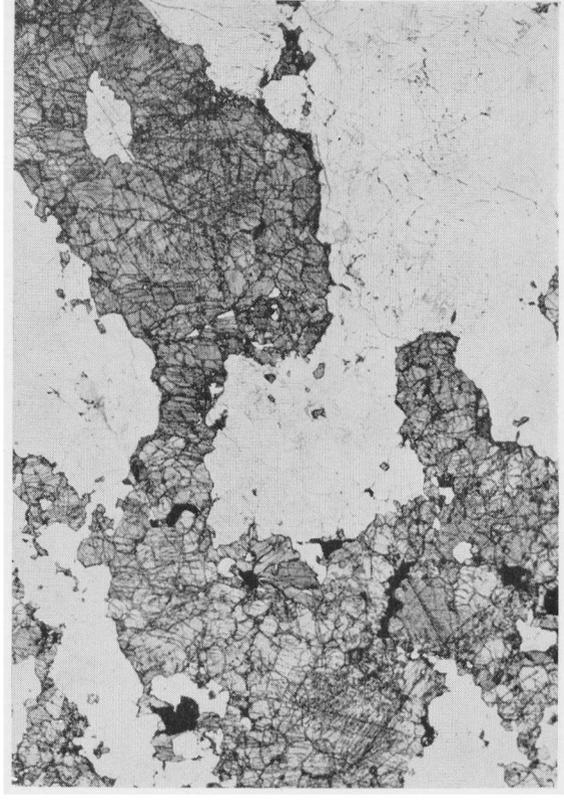


Fig. 2

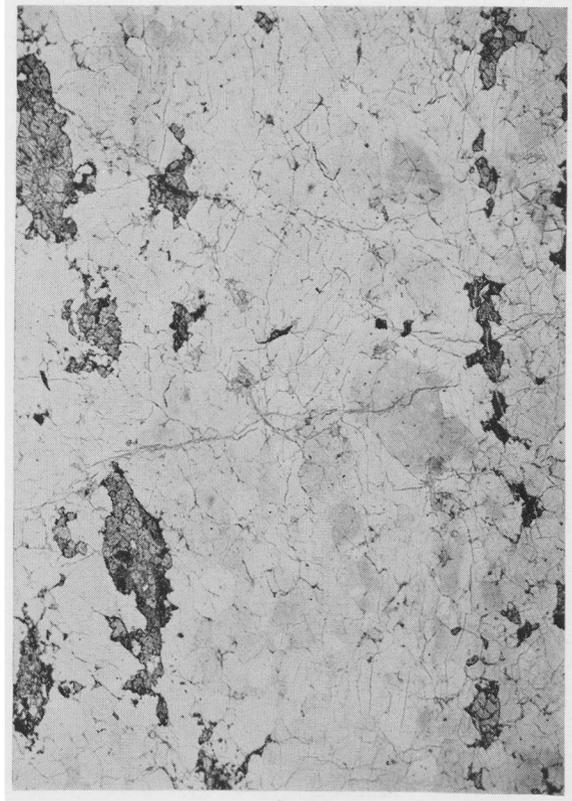


Fig. 3

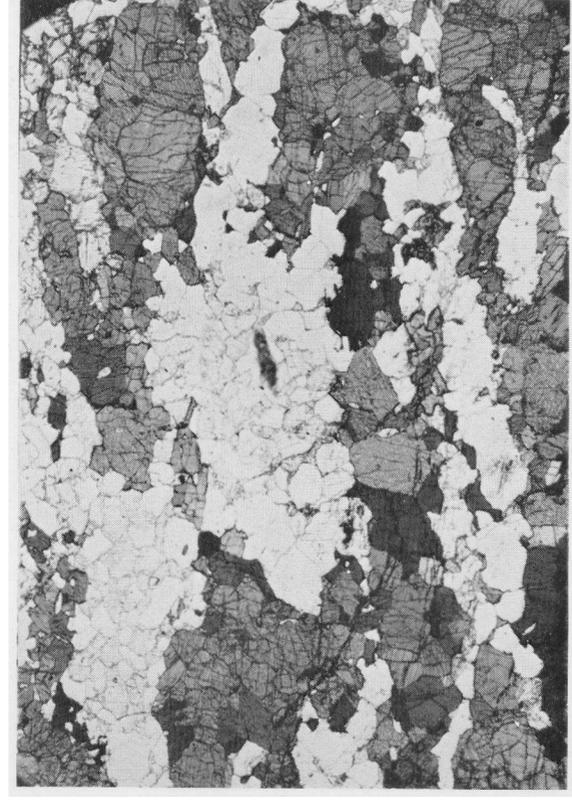


Fig. 4

*Fig. 1.* Well-foliated gabbro gneiss with porphyroclastic grains of augite up to 5 mm. in size, set in an equigranular groundmass with a grain-size of 0.1 to 1 mm. Both clusters and single grains of pyroxene occur. The large grain at the upper left clearly exhibits clastic phenomena.

Sample T 4.111 Udsikt fjell (Stjernøy).

Magnification 7.5 ×.

*Fig. 2.* Medium-grained gabbro gneiss with a grain-size of up to 2 mm., exhibiting single augite grains and lath-shaped plagioclase. The prismatic pyroxene crystals are clearly aligned; so are the plagioclase laths, as shown by their parallel extinction positions.

Sample T 4.130a Havnfjell (Stjernøy).

Nicols +. Magnification 7.5 ×.

*Fig. 3.* Leucocratic syenite-gneiss, consisting of 95 per cent anhedral perthitic feldspar. The medium-grained feldspar (0.1 to 1.0 mm.) exhibits a pronounced foliation due to parallel arrangement of lenticular grains. Also a pronounced mortar texture is seen along the grain-boundaries of the perthitic crystals.

Sample T 3.81 Lille Kjerringfjord (Stjernøy).

Nicols +. Magnification 7.5 ×.

*Fig. 4.* Mesoperthitic intergrowth of albite and orthoclase exhibiting slightly crinkling lamellae of the latter mineral in the former. The lamellae are densely distributed at distances of about 0.01 mm. and in most cases are continuous throughout the crystals (hair-perthite). Along the grain-boundaries a pronounced rim of finely-granulated crystal aggregate with a grain-size of no more than a few hundredths of a millimetre can be seen (mortar texture).

Sample T 3.91 Lille Kjerringfjord (Stjernøy).

Magnification 60 ×.

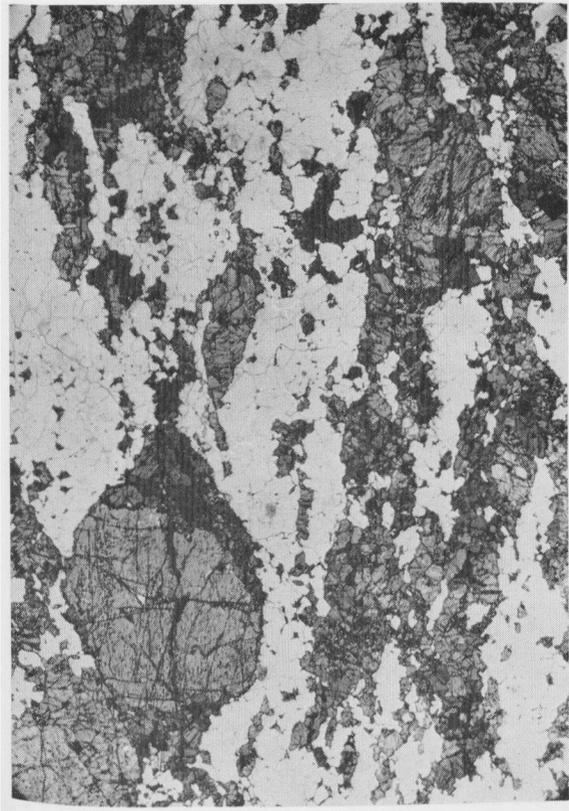


Fig. 1

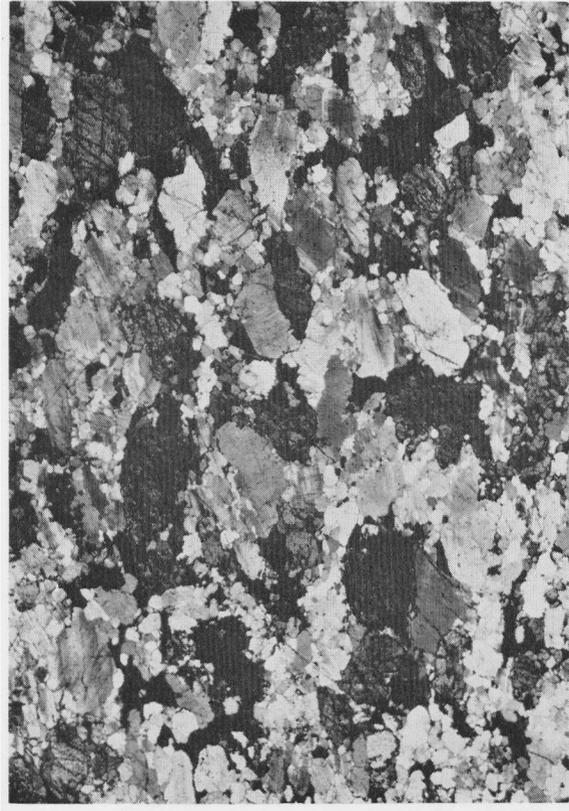


Fig. 2

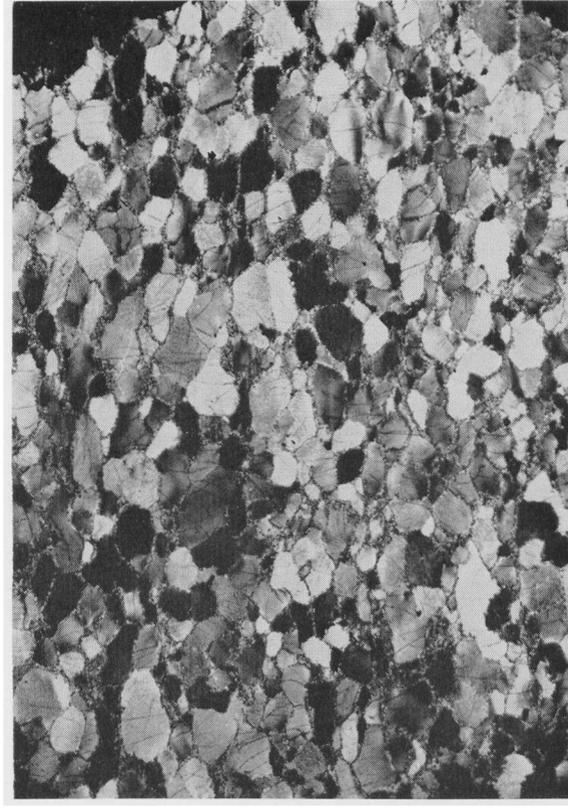


Fig. 3

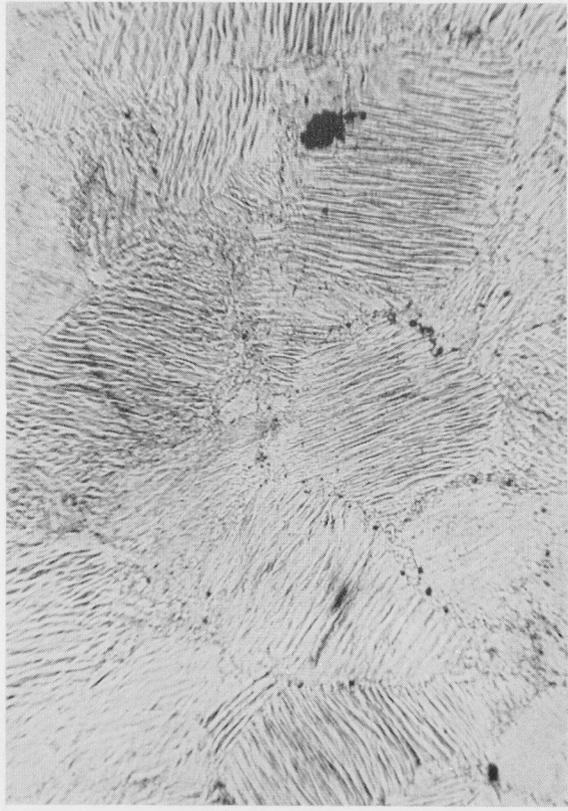


Fig. 4

