

PLATES

Plate 1A

Biotite grade layered and veined schists of Domain I, from the upper Cooplacurripa River. Illustrates the S1/S2 veining and the F3 style.

Plate 1B

Lower metamorphic grade layered schist from the lower Cooplacurripa River showing the S1/S2 layering and F3 folds.

Plate 1C

Isoclinal similar fold hinge in a metachert outcrop from the lower Cooplacurripa River. This structure is inferred to belong to the F2 generation.



IA



IB



IC

Plate 2A

Crenulation style cleavage developed parallel to the axial planes of F3 folds of Domain I. The crenulated surface is the S1/S2 schistosity.

Plate 2B

The style of the S1/S2 layering in Domain II at higher metamorphic grade. Several small flexures belonging to the F3 episode are visible, as well as an isolated isoclinal-style hinge of an F2 generation fold.



2A



2B

Plate 3A

Illustrates the F3 fold style in the southern part of Domain III, showing also the S1/S2 layering and the crenulation of S1/S2 parallel to the S3 axial plane of the fold.

Plate 3B

The F3 fold style in the northern part of Domain III, showing the less strongly developed layering towards the northern part of this Domain.

Plate 3C

Shows the similarity of the F3 fold style of Domain VIIIIB with F3 of the Oxley Metamorphics. This example shows only moderately developed S1/S2 layering, with an S3 crenulation cleavage.



3A



3B



3C

Plate 4A

The S1 surface of the metamorphosed greywackes of Domain IX of the Brackendale Metamorphics. This cleavage is planar, with a near vertical attitude and no S1 layering.

Plate 4B

An isolated F2 fold in Domain X. The fine lamination is a transposition layering, and this outcrop contains the transposed contact of a graphite-free psammitic horizon (left) and a darker, more pelitic, graphite bearing layer (right).

Plate 4C

The strongly flattened fabric of one of the deformed conglomeratic horizons interbedded with the greywackes of Domain IX.



4A



4B



4C

Plate 5A

Well developed typical F2 folds in Domain X of the Brackendale Metamorphics.

Plate 5B

The highly veined and contorted contact schists adjacent to the Tia Granodiorite, with several generations of non-penetrative veins in addition to those parallel to S1.

Plate 5C

The small-scale doming and basining that occurs in the high grade contact schists of Domains X and XI.



5A



5B



5C

Plate 6

The high grade schists of Domain XII in the Brackendale Metamorphics south of the granodiorite. The original sedimentary banding is parallel to the S1 penetrative layering. These have been folded during F2, and some examples of a later S2 generation of quartz veins are visible. This should be contrasted with the structural style of the nearby Oxley Metamorphics, (see Plate 2B).



6

Plate 7A

The texture of the analysed metabasalt MB8. The lighter coloured grains are relic clinopyroxenes and the remainder is predominantly pumpellyite, (plane light).

Plate 7B

This illustrates the analysed metabasalt MB7. The right half of the field of view is occupied by a clinopyroxene phenocryst which is partially replaced by chlorite and minor opaque oxide, (plane light).

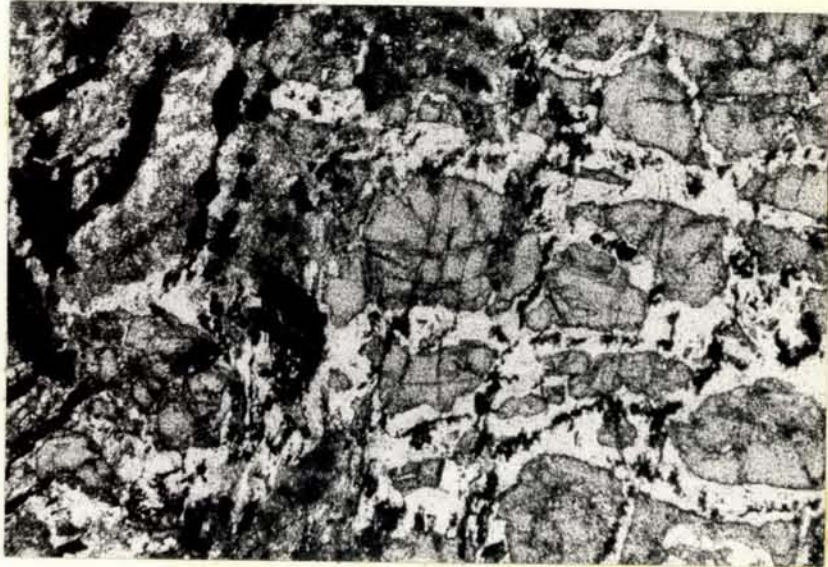
Plate 7C

The textural relationship of crossite, showing the zonal structure of the amphibole plates. The core of this grain is crowded with opaque material, (plane light).



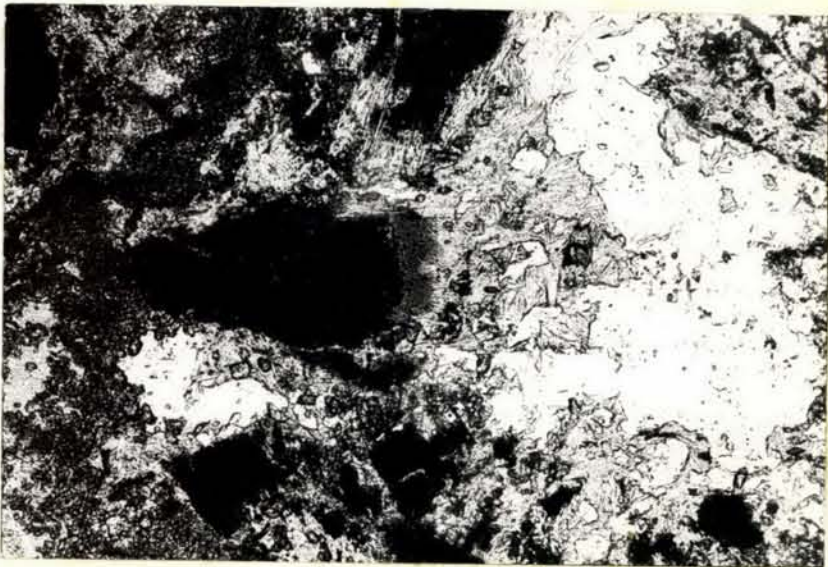
7A

1mm



7B

1mm



7C

0.5 mm

Plate 8A

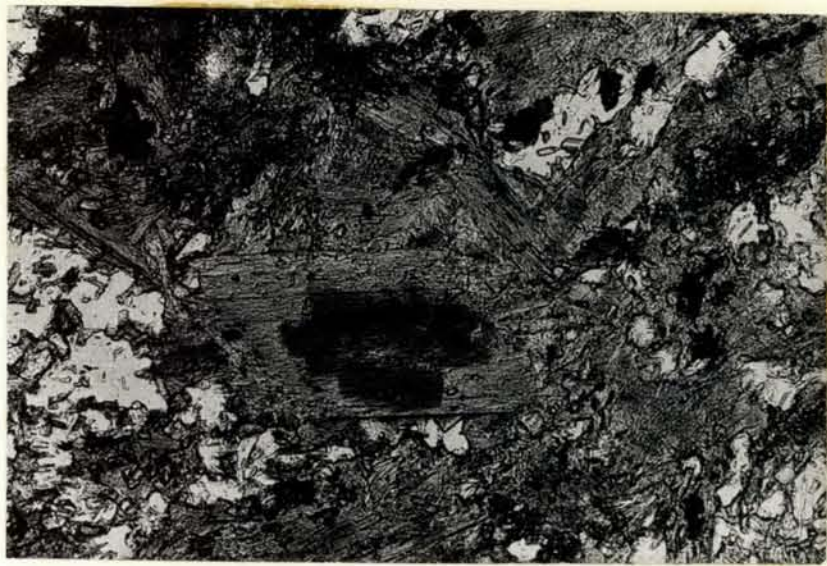
A zoned amphibole plate in the analysed metabasalt MB6. The core contains crossite which is rimmed by actinolitic amphibole, (plane light).

Plate 8B

The relationship between the epidote and pumpellyite in the post-tectonic veins of the Zone A metabasalts. Pumpellyite is interpreted to be replacing epidote, (plane light).

Plate 8C

Stilpnomelane in the analysed metabasalt MB6 from the lower grade part of Zone B, accompanied by rounded epidote granules and pools of chlorite, (plane light).



8A

0.5mm



8B

1mm



8C

0.5mm

Plate 9A

The texture of the analysed metabasalt MB6, collected from just above the lower boundary of Zone B, (plane light).

Plate 9B

The texture of a metabasalt from about the middle of Zone B, containing abundant ragged amphibole plates and numerous small epidote granules, (plane light).

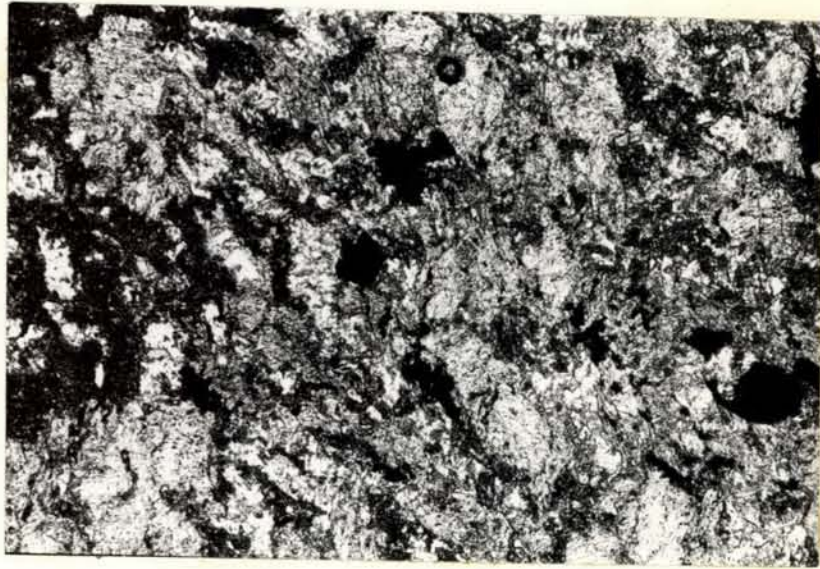
Plate 9C

The texture of a typical epidote amphibolite from the upper part of Zone B, showing an overall coarsening of the amphibole and epidote grain-size, (plane light).



9A

1mm



9B

1mm



9C

1mm

Plate 10A

A typical hornblende bearing amphibolite (MB5) from the lower grade part of Zone C. Note the disappearance of epidote, (plane light).

Plate 10B

Analysed metabasalt MB2 from the upper part of Zone C, (plane light).

Plate 10C

The texture of the analysed amphibolite MB1 from Zone D. Note the variation in habit between Zones C and D, (plane light).



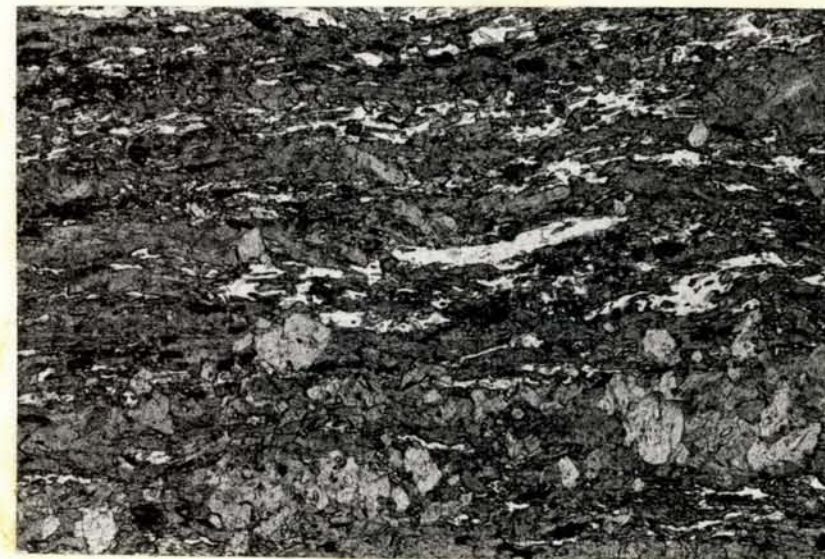
IOA

1mm



IOB

1mm



IOC

1mm

Plate 11A

The layered structure of the highest grade amphibolite from which analysed metabasalt MB1 was collected.

Plate 11B

The texture of the grunerite bearing amphibolite from Zone D. The lighter coloured areas are grunerite, with the darker areas of hornblende, (plane light).

Plate 11C

The microcrenulations that typify the low-grade white-mica rich schists of Zone 1, (plane light).

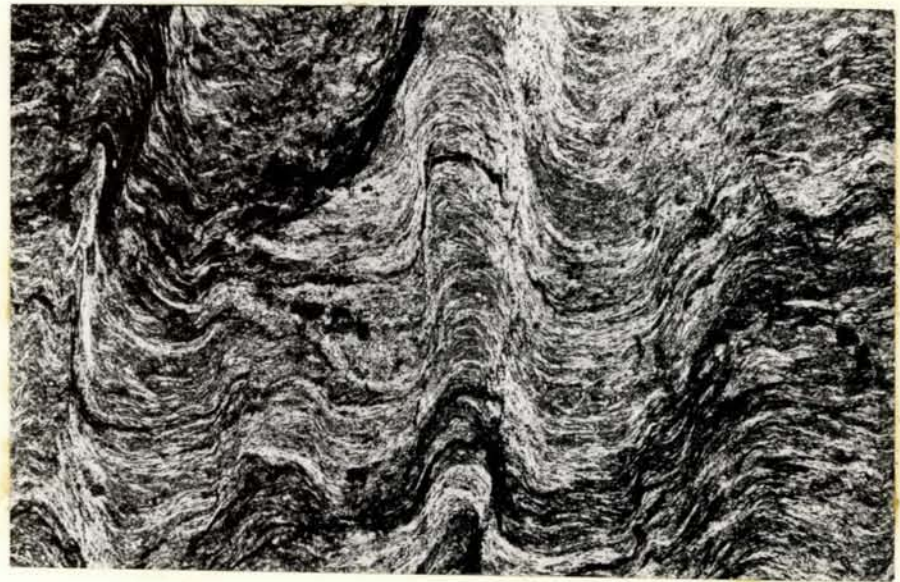


IIA



IIB

0.5 mm



IIC

1 mm

Plate 12A

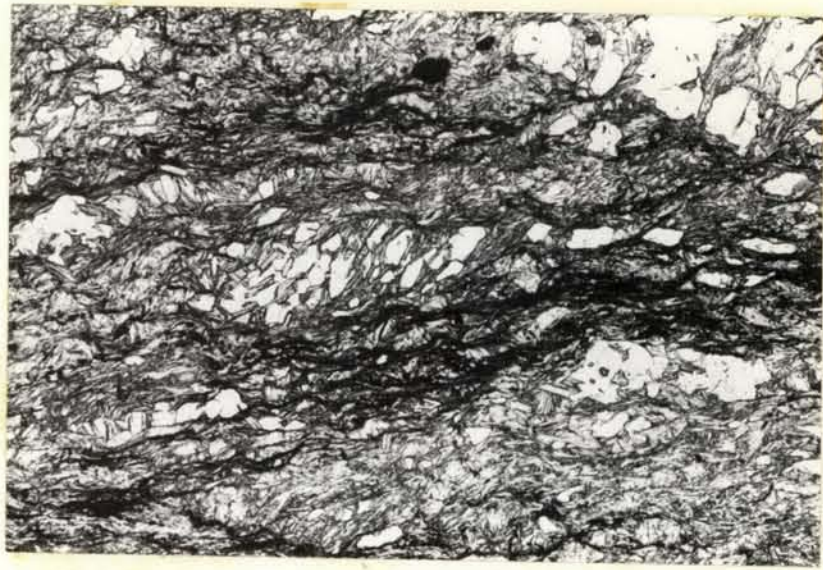
A schist from the lower grade part of the Transition Zone, in which all the previously crystallized biotite has been retrogressed to white mica and chlorite, (plane light).

Plate 12B

A laminated schist from the upper part of the Transition Zone in which biotite survives, having undergone only partial replacement by a lower grade assemblage, (plane light).

Plate 12C

A garnet-bearing layered schist from Zone 2 within the Wybeena Metamorphics, (plane light).



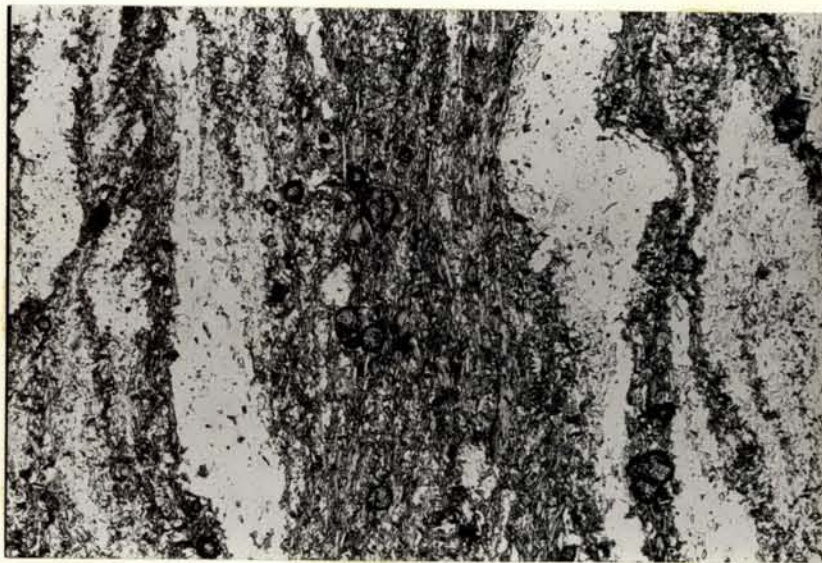
I2A

1mm



I2B

1mm



I2C

1mm

Plate 13A

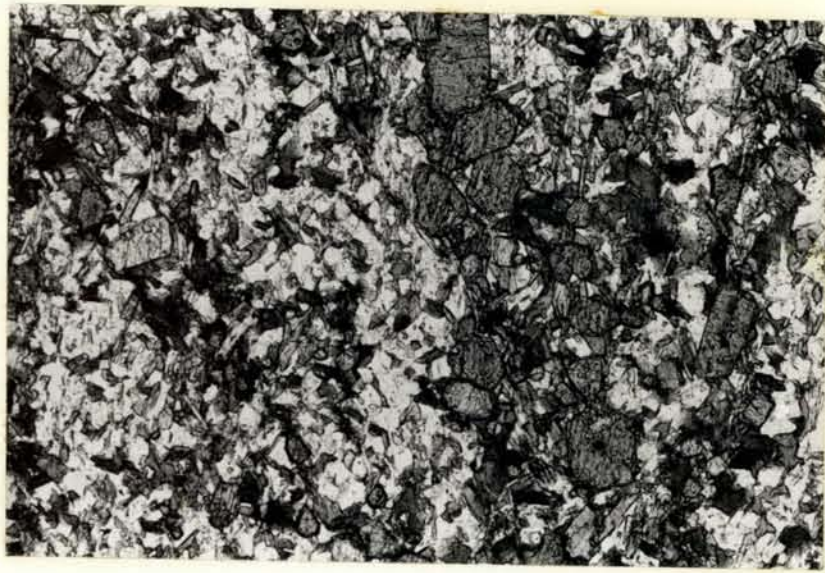
A Zone 2 schist of the Oxley Metamorphics containing abundant prisms of tourmaline, (plane light).

Plate 13B

A high grade schist of Zone 2 from which biotite B3, muscovite Mu1 and garnet G5 were separated and analysed, (plane light).

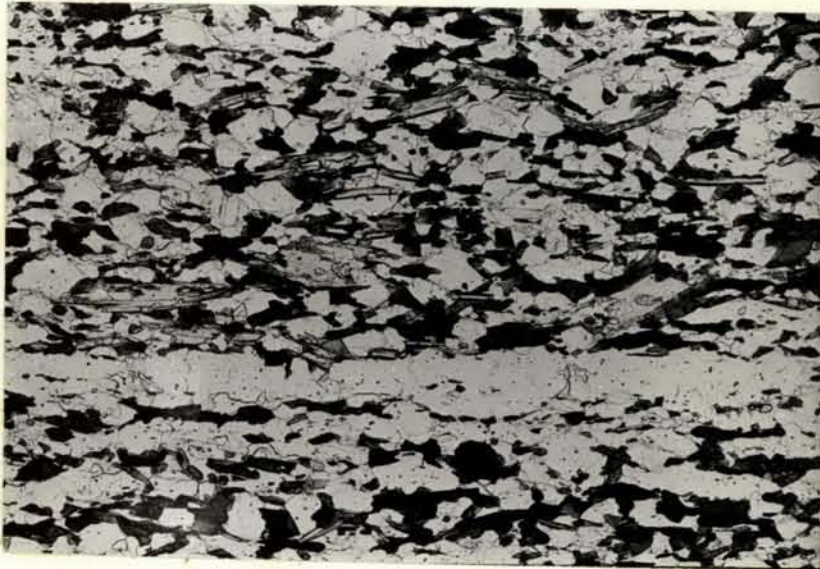
Plate 13C

An example of the quartz-garnet-grunerite-biotite-stilpnomelane rock from a quartzite horizon in the upper part of Zone 2, (plane light).



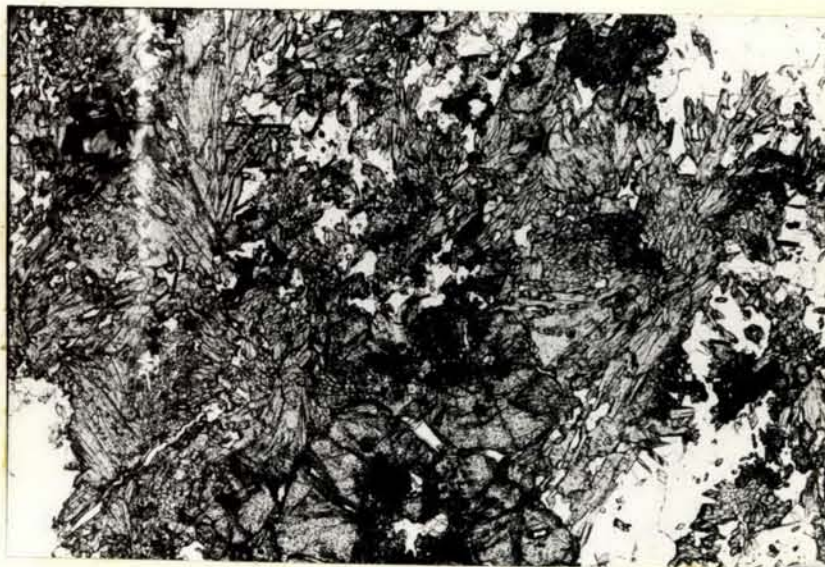
13A

1mm



13B

1mm



13C

1mm

Plate 14A

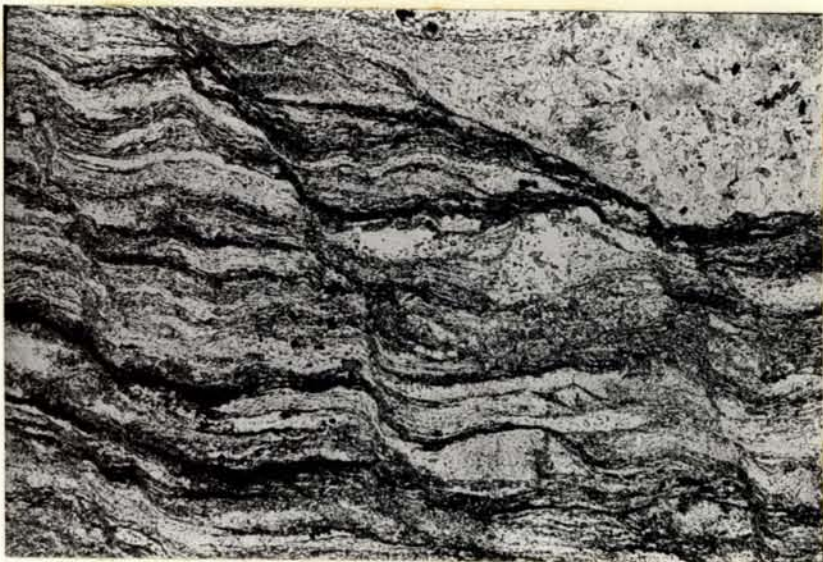
The texture of a typical Stage 1 meta-greywacke of the Brackendale Metamorphics. The relationship between S1 and S2 is clear, (plane light).

Plate 14B

A hinge of a microfold of Stage 2 of the Brackendale Metamorphics. The biotite shows a strong preferred orientation parallel to S2, (plane light).

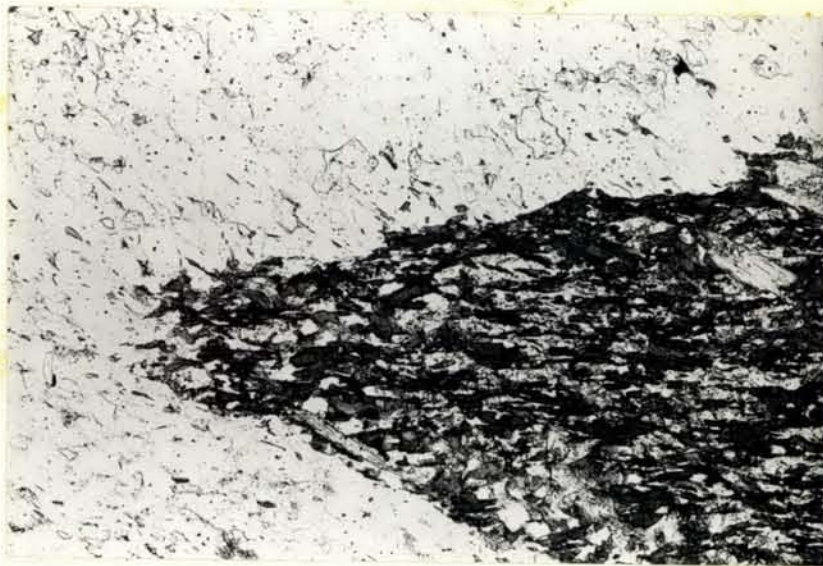
Plate 14C

A further example of a Stage 2 schist in which the biotite shows a less well developed preferred orientation, (plane light).



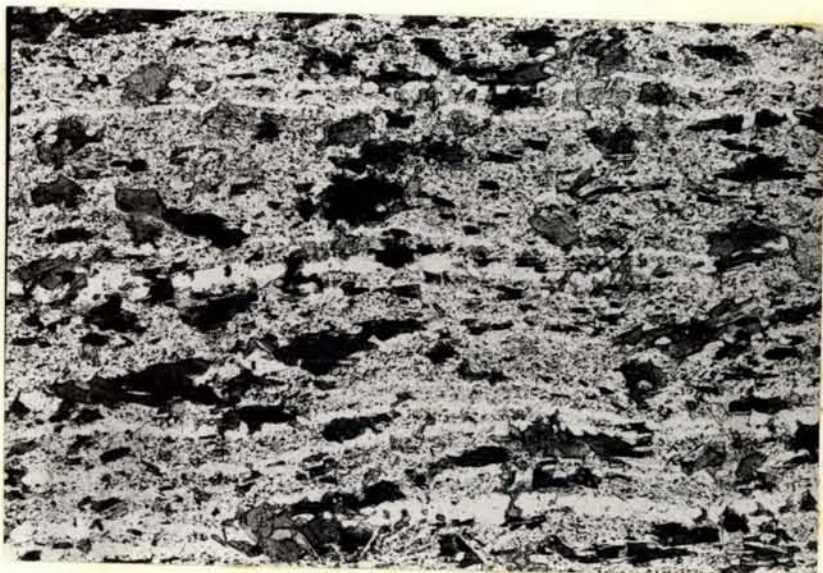
14B

1mm



14B

1mm



14C

1mm

Plate 15A

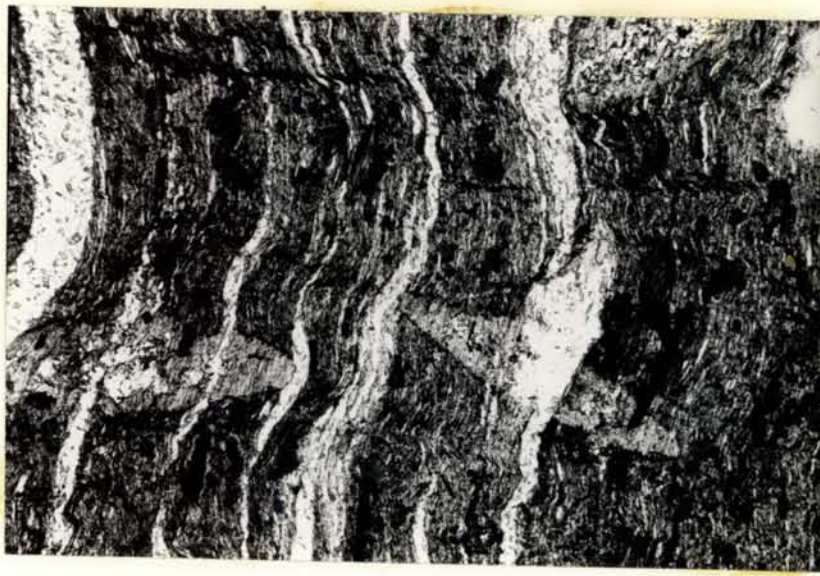
A Stage 2 schist showing three different modes of crystallization of biotite, (see text for fuller description), (plane light).

Plate 15B

The texture of the migmatitic contact schist from Stage 3 of the Brackendale Metamorphics, (plane light).

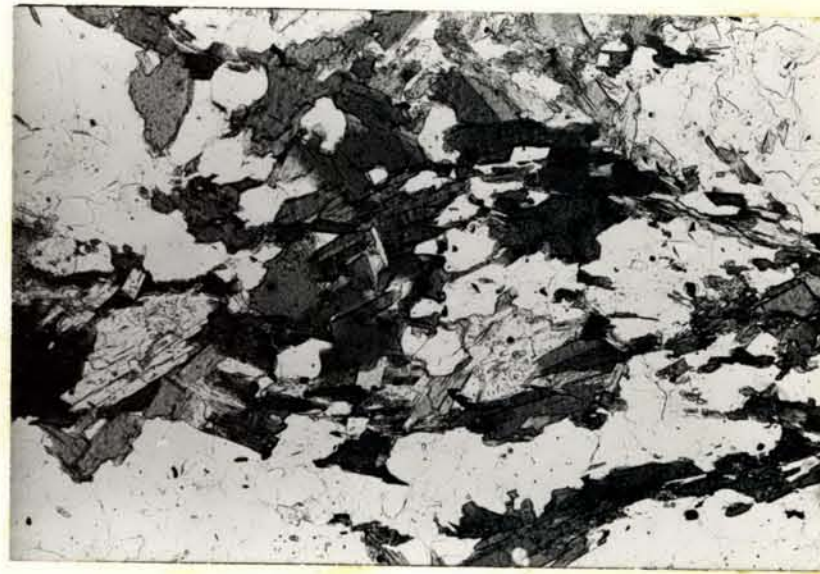
Plate 15C

An example of the randomly oriented muscovite porphyroblasts that characterize the psammitic lithologies of Stage 3, (plane light).



15A

1mm



15B

1mm



15C

1mm

Plate 16A

The two varieties of rare xenolith that are found included in the Tia Granodiorite.

Plate 16B

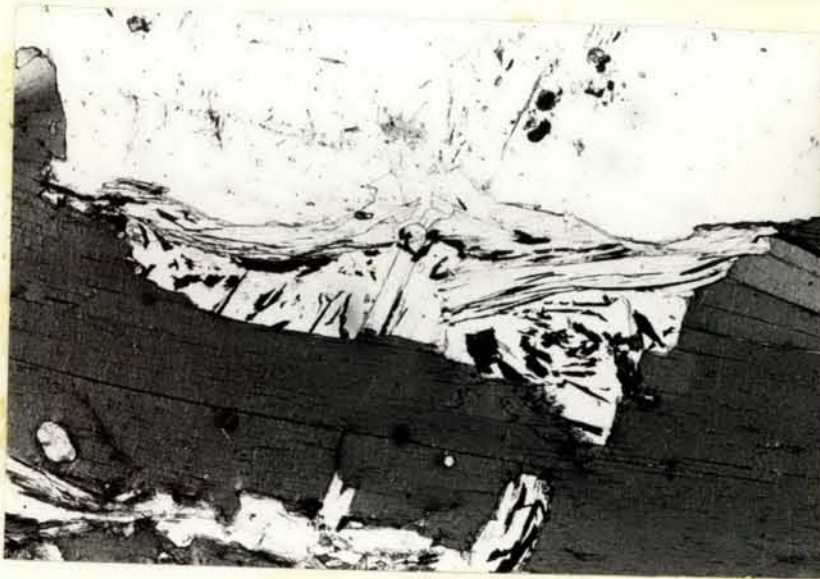
The mode of crystallization of muscovite at the biotite grain boundaries within the Tia Granodiorite, (plane light).

Plate 16C

A cluster of small garnets within the Tia Granodiorite, (plane light).

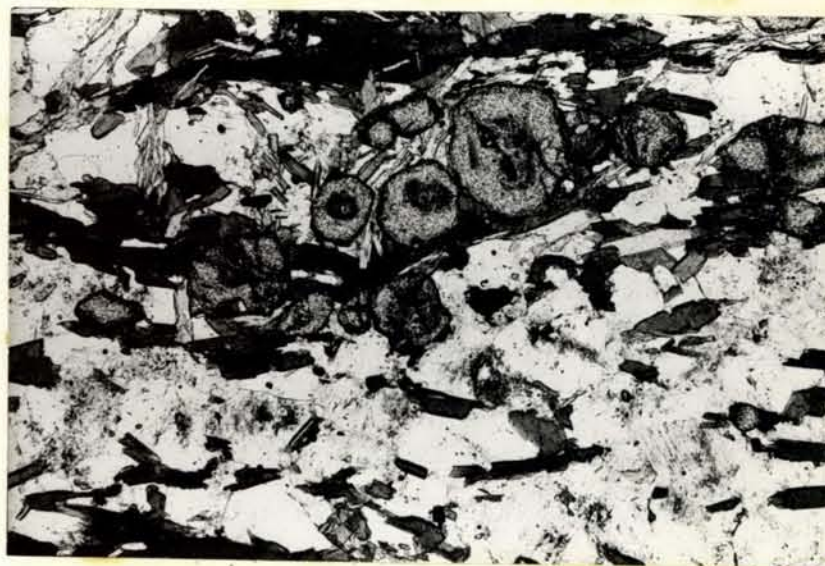


16A



16B

1mm



16C

1mm

Plate 17A

The principal exposure of the partially serpentinitised peridotite within the Nowendoc Serpentinite.

Plate 17B

The breccia-like structure that typifies the composite serpentinite, consisting of angular blocks of massive serpentinite in a schistose matrix.

Plate 17C

Weathered surface of the mylonitised harzburgite showing enstatites etched out in relief.



17A



17B



17C

Plate 18A

The mylonitic foliation developed in the harzburgites as revealed by surface weathering.

Plate 18B

An outcrop showing the mineralogic layering near hammer, dipping at a steep angle to the left, parallel to the mylonitic foliation illustrated above.

Plate 18C

A large angular inclusion of massive serpentinite excavated during quarrying for road metal.



18A



18B



18C

Plate 19A

The texture of the mylonitised harzburgites, with a domain of finely granulated olivine running from the upper left to lower right of the photograph, (X nicols) .

Plate 19B

A brucite-magnetite veinlet in the partially serpentinitised harzburgite, surrounded by an aureole of complete serpentinitisation, (plane light).

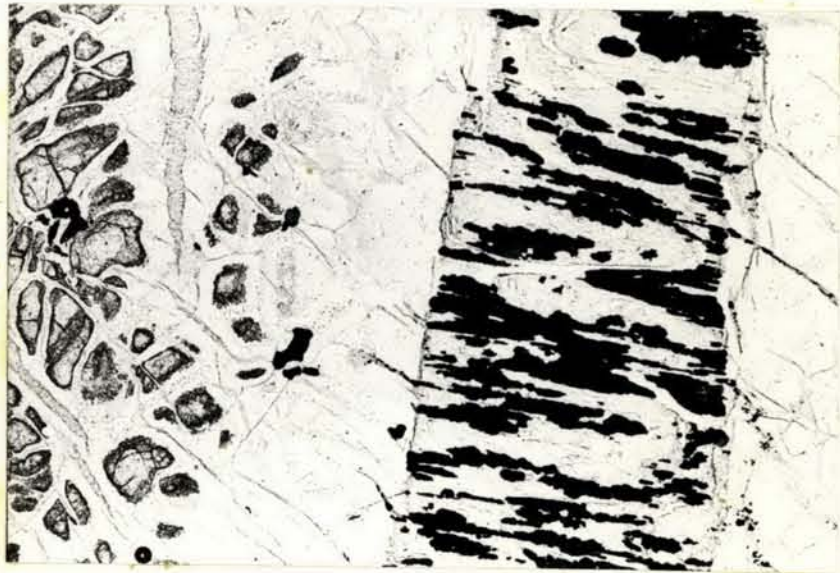
Plate 19C

The texture of the more massive harzburgites. The right half of the photograph is occupied by a coarse olivine in extinction. This should be contrasted with 19B, (X nicols).



19A

1mm



19B

1mm



19C

1mm

Plate 20A

The structure of the schistose serpentinite, containing only a small proportion of small rounded inclusions of massive serpentinite.

Plate 20B

The texture of the albitised hornblende dolerite. The darker high relief patches are dominantly zoisite and grossular, (plane light).

Plate 20C

Rodingite consisting of grossular and chlorite, This is inferred to have arisen from alteration of the hornblende dolerites. The similarity of fabric should be noted, (plane light).



20A



20B

1mm



20C

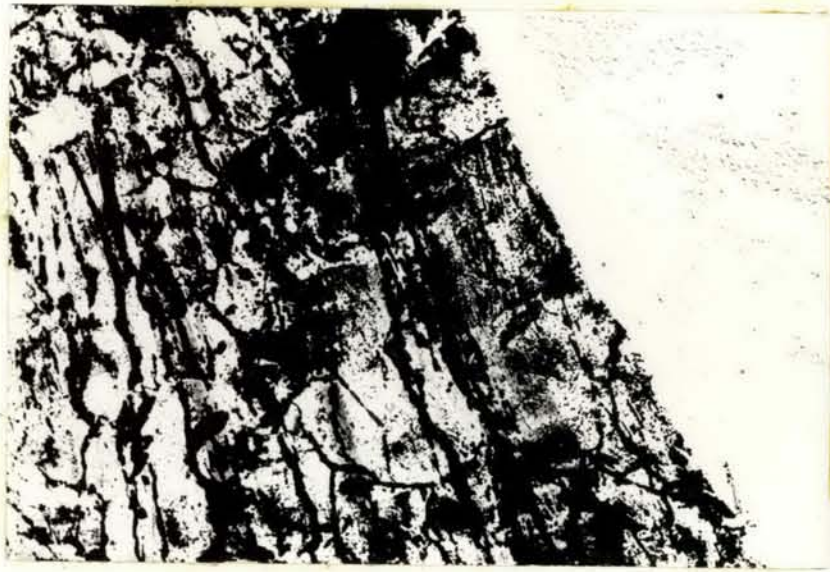
1mm

Plate 21A

The magnetite-choked rim of a massive serpentinite inclusion, (plane light).

Plate 21B

As above with X nicols. The fine structure of the schistose serpentinite at the interface is now apparent.



21A

1mm



21B

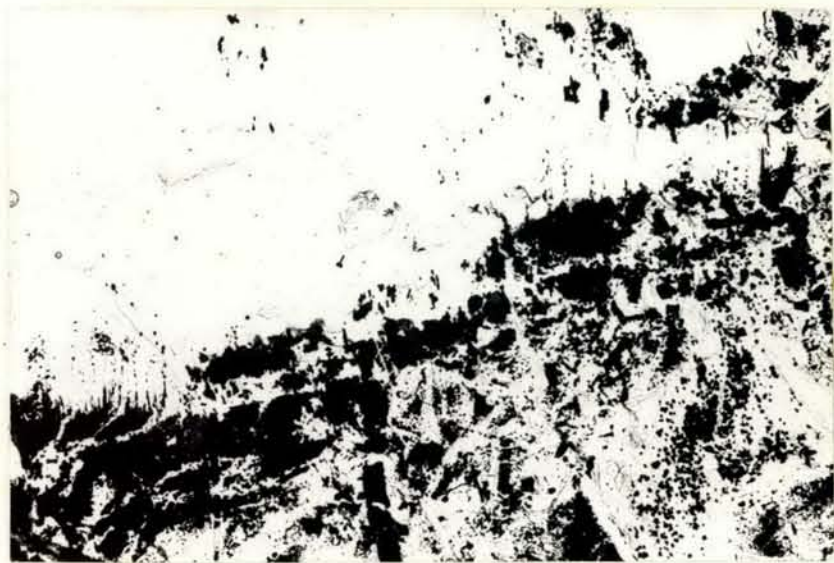
1mm

Plate 22A

A further example of enrichment in magnetite at the rim of a massive serpentinite inclusion, (plane light).

Plate 22B

As above with X nicols, showing the structure within the schistose serpentinite.



22A

1mm



22B

1mm