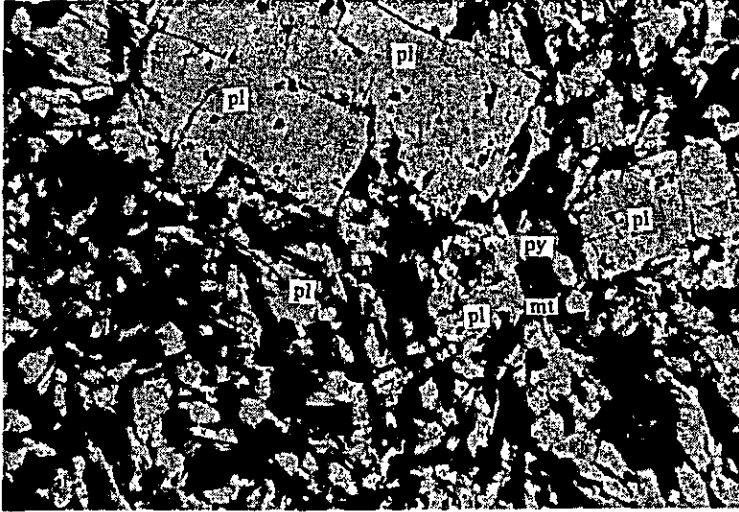


Photomicrograph 25



Only lower polar

Photomicrograph 26



Crossed polars



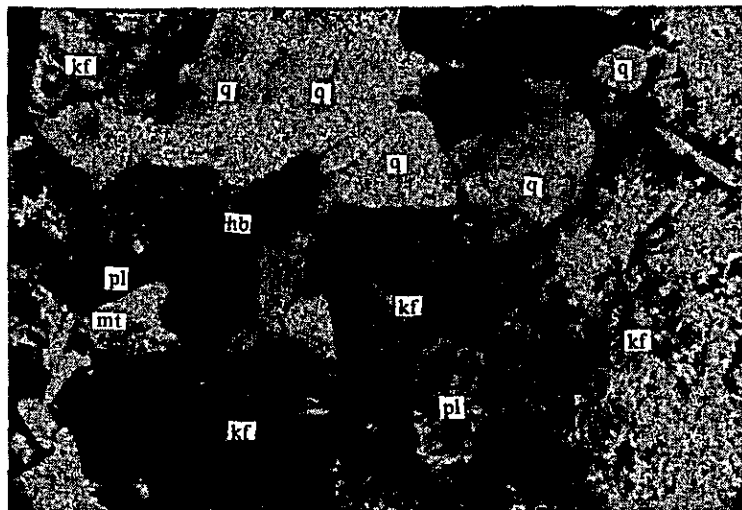
Sample No. : 26-B-102

Rock name : Biotite augite dolerite.

Locality : Wadi about 1.3 km east of Wadi Shaat camp, Salah area.

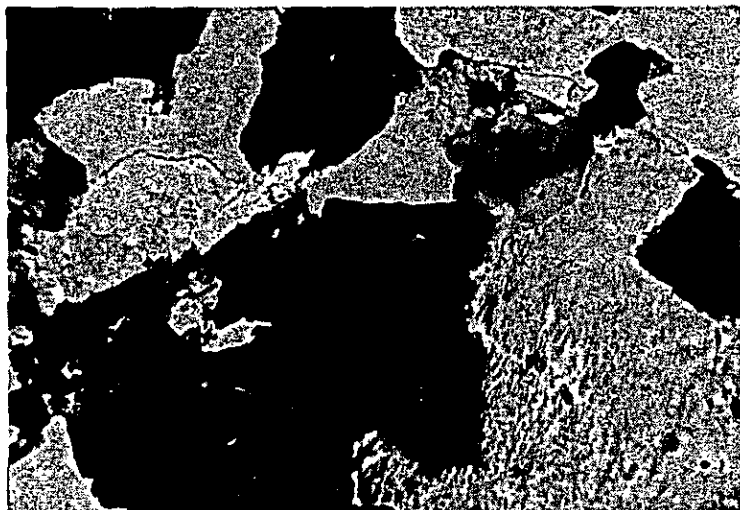
Observation : The rock is holocrystalline and has porphyritic texture. Phenocryst is composed of plagioclase (maximum 2 mm) and augite (maximum 1 mm) and groundmass is composed of plagioclase lath, augite, biotite and magnetite, showing intergranular texture. Plagioclase is altered somewhat to sericite and carbonate, and some of augite are altered to montmorillonite and biotite.

Photomicrograph 27



Only lower polar

Photomicrograph 28

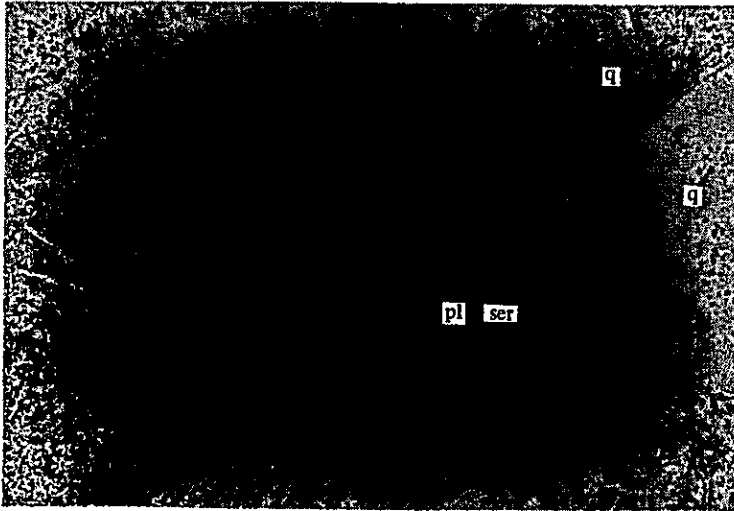


Crossed polars



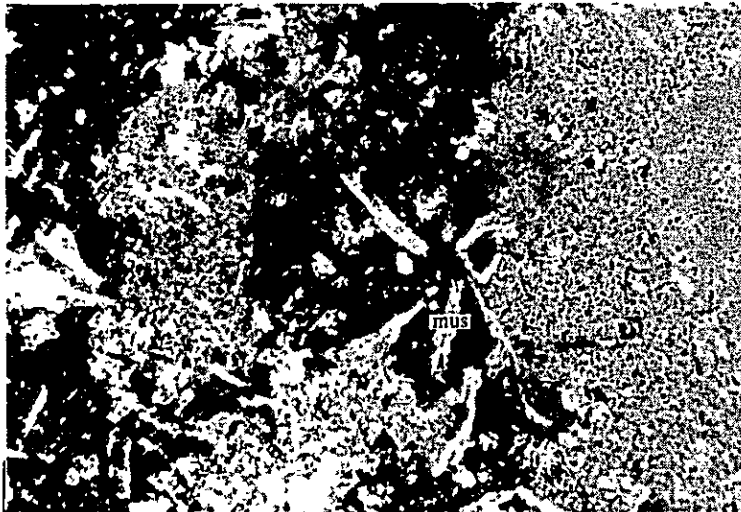
- Sample No. : 22-2
Rock name : Hornblende adamellite.
Locality : Bottom of Central Jabal Samhan, Salalah area.
Observation : The rock is holocrystalline, equigranular and composed of abundant K-feldspar, quartz and plagioclase, and a very small amount of hornblende, magnetite, sphene and apatite. It is altered weakly to sericite and chlorite.
K-feldspar : Maximum 2.5 mm, hypidiomorphic ~ xenomorphic, carlsbad twinning and perthite structure.
Quartz : Maximum 2 mm, xenomorphic.
Plagioclase : Maximum 2.5 mm, hypidiomorphic ~ idiomorphic, somewhat sericitized.
Hornblende : Maximum 0.8 mm, hypidiomorphic ~ idiomorphic, somewhat chloritized.
Magnetite : Frequently including apatite and sphene.

Photomicrograph 29

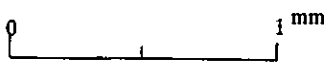


Only lower polar

Photomicrograph 30

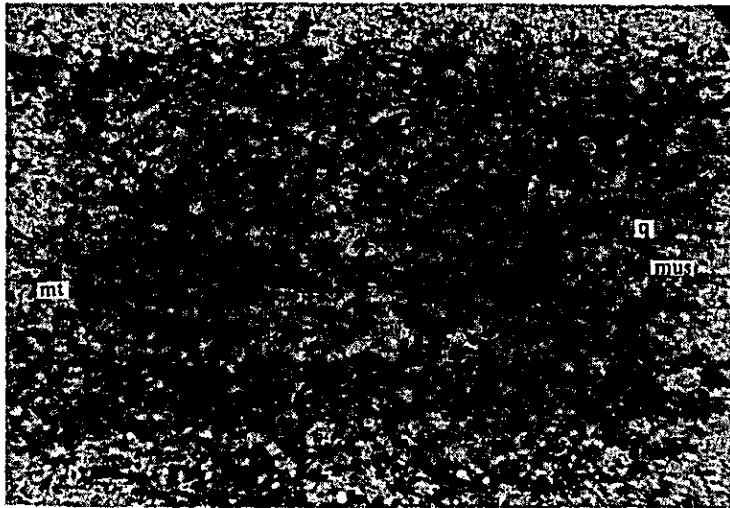


Crossed polar



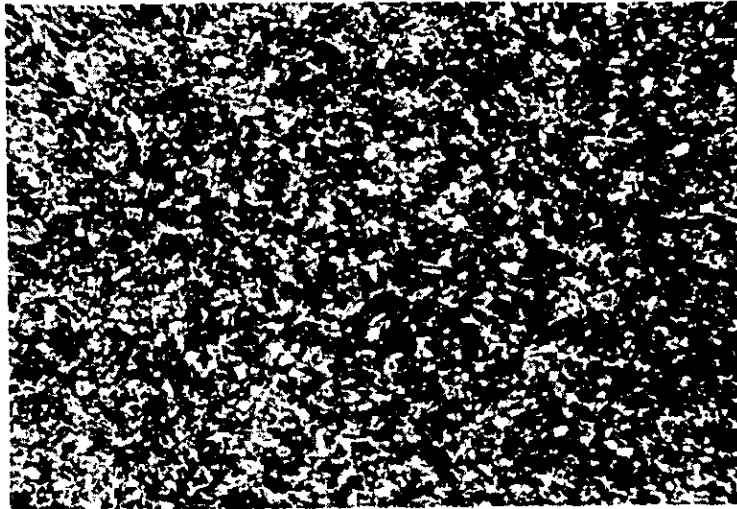
- Sample No. : 25-3-1
Rock name : Quartz porphyry
Locality : Road northeast of the Wadi Shaat camp, Salalah area
Observation : The rock is holocrystalline and porphyritic and phenocryst is composed of quartz and groundmass is composed of strongly sericitized plagioclase and muscovite.
Quartz phenocryst: Maximum 3 mm, surrounded by mantles of secondary quartz.
Plagioclase : Maximum 0.5 mm, showing mosaic structure, strongly sericitized.
Muscovite : Maximum 1 mm.

Photomicrograph 31



Only lower polar

Photomicrograph 32



Crossed polars

0 1 mm

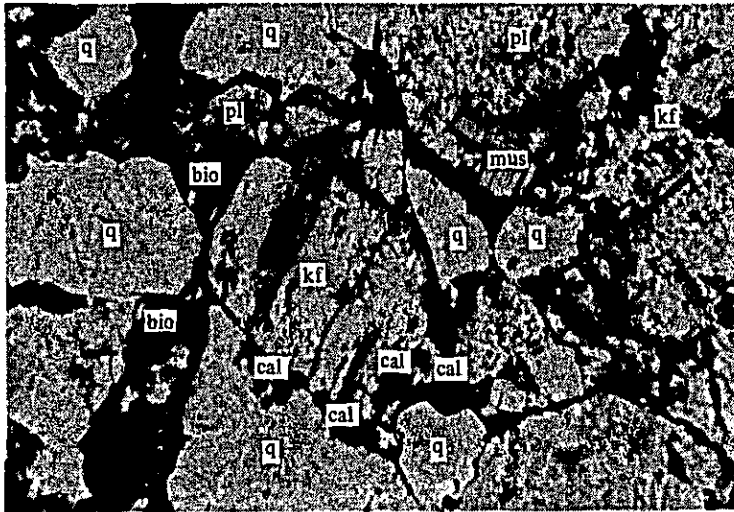
Sample No. : 22-9

Rock name : Siltstone, Mirbat sandstone formation.

Locality : Jabal Shereef, Salalah area.

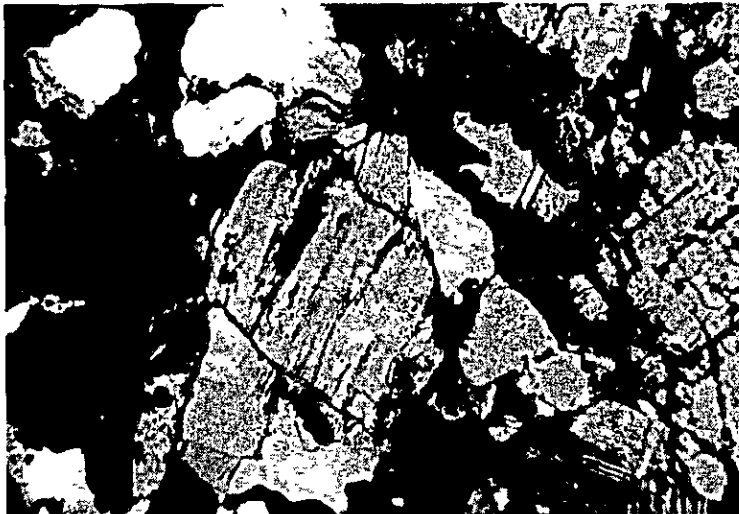
Observation : The rock is composed of fine grains of quartz and magnetite, and muscovite flakes showing nearly parallel arrangement along bedding.

Photomicrograph 33



Only lower polar

Photomicrograph 34

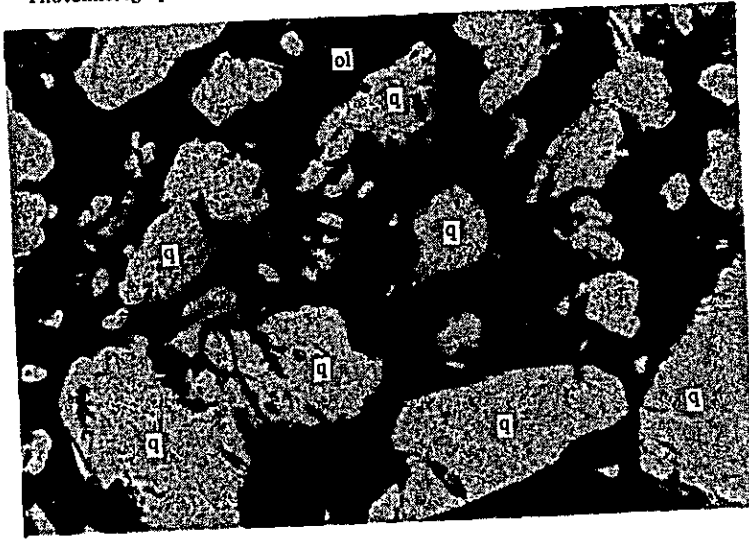


Crossed polars



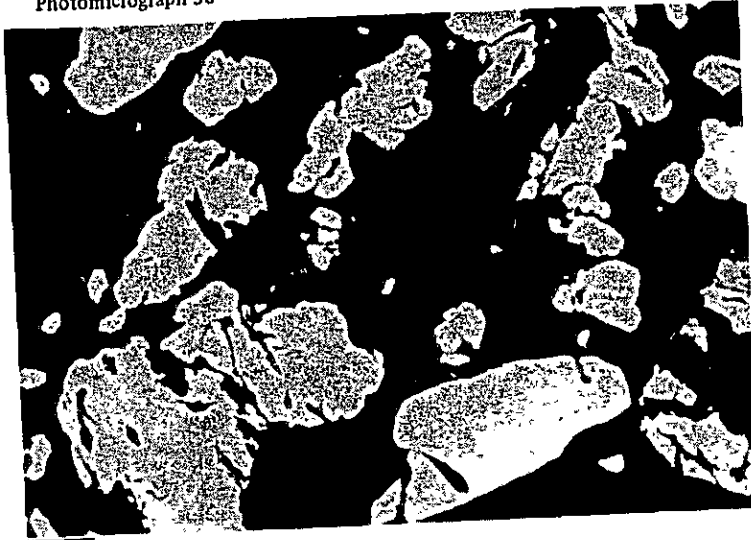
- Sample No. : 22-10
Rock name : Coarse-grained arkose sandstone, Mirbat sandstone formation.
Locality : Near Wadi Marsham, Salalah area.
Observation : The angular ~ subangular sand grains of quartz (maximum 2 mm), K-feldspar (maximum 3.5 mm) and plagioclase (maximum 2 mm), and flakes of biotite (maximum 1 mm) and muscovite (maximum 1 mm) are cemented by carbonate.

Photomicrograph 35



Only lower polar

Photomicrograph 36

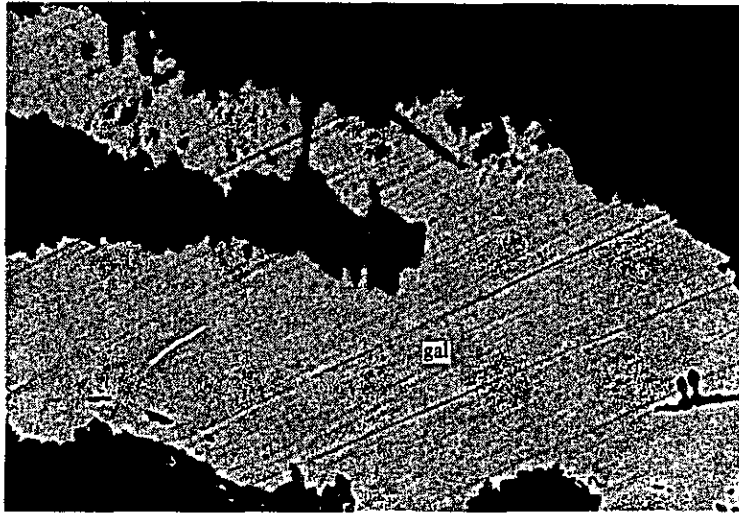


Crossed polars



Sample No. : 22-3-3
Rock name : Sandstone, Umm er Radhuma formation.
Locality : The middle part of escarpment of eastern Jabal Samhan, Salalah area.
Observation : Quartz grains of various size are cemented by small spherical limonite and small grains of silicate with irregular shape.

Photomicrograph 37

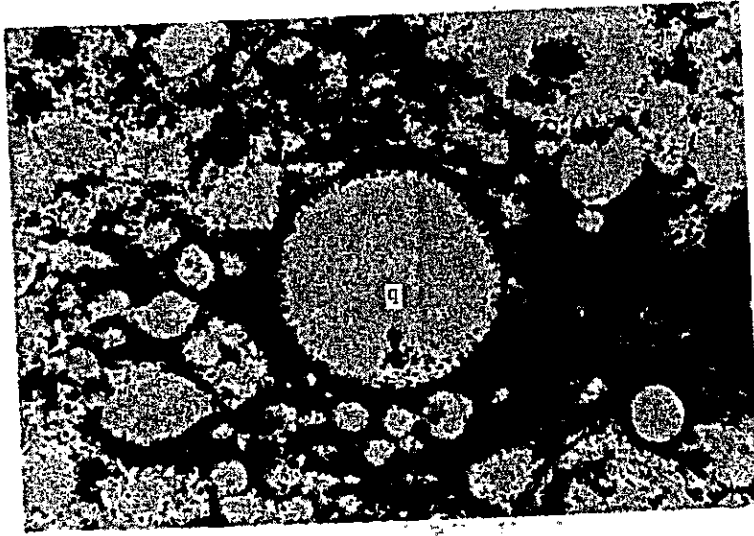


Reflected light
Only lower polar

0 0.5 mm

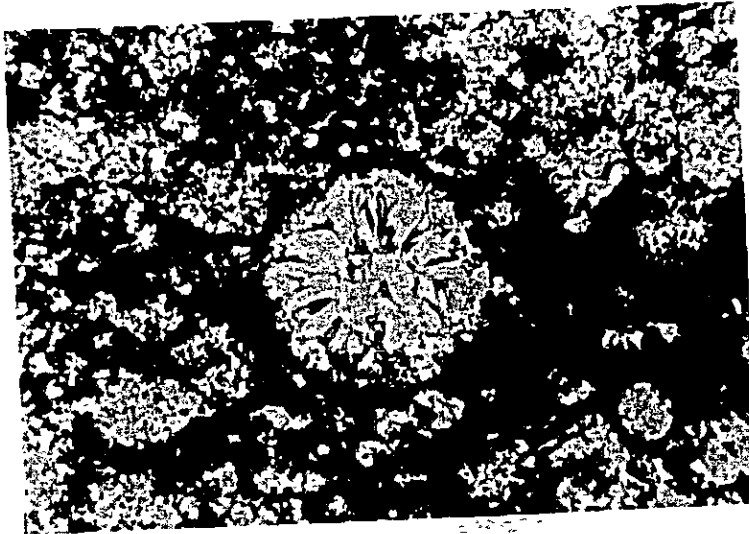
Sample No. : 25-5
Rock name : Galena ore.
Locality : Old lead pit, Salalah area.
Observation : The ore minerals other than galena are absent.

Photomicrograph 38

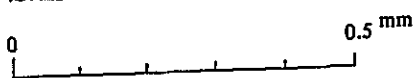


Only lower polar

Photomicrograph 39

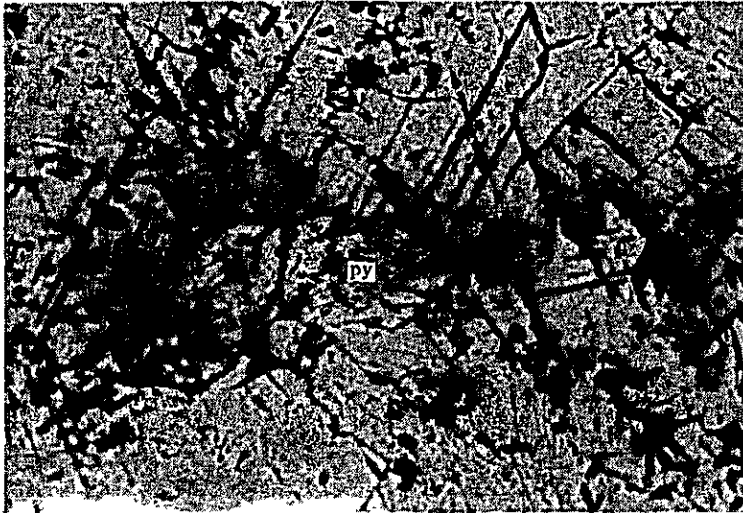


Crossed polars



- Sample No. : 8-A-112
Rock name : Radiolarian chert, Halfa formation.
Locality : Near western end of manganese ore zone, Eastern Sur area.
Observation : Abundant radiolarian mostly filled up by colorless radial quartz is cemented by cherty material composed of very fine-grained quartz and dusty reddish-brown iron mineral.

Photomicrograph 40



Reflected light
Only lower polar

Photomicrograph 41

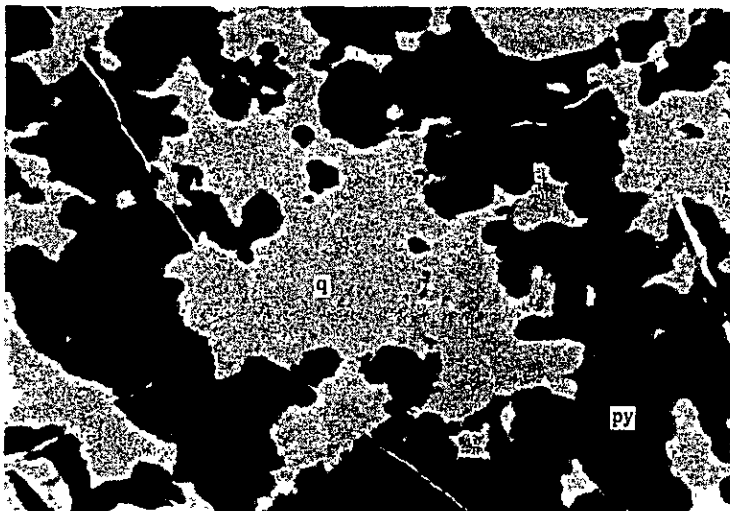


Crossed polars

0 0.3 mm

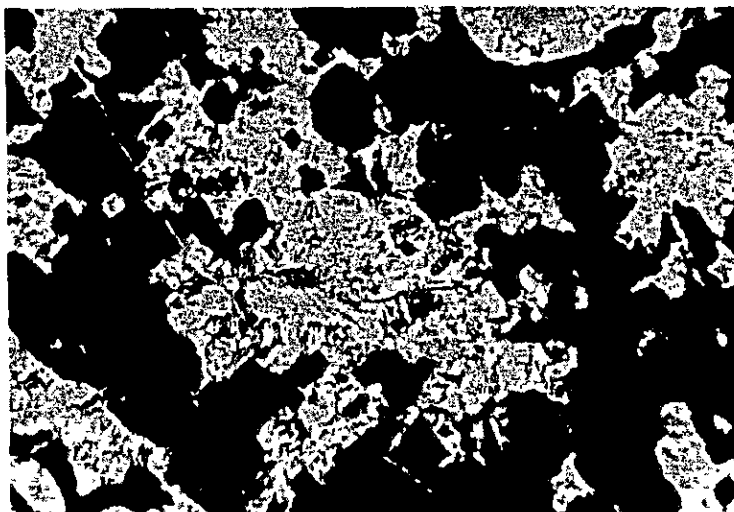
Sample No. : 8-A-104
Rock name : High grade manganese ore, Halfa formation.
Locality : No.1 ore deposit, Eastern Sur area.
Observation : Pyrolusite has distinct cleavages, cream-white in color, distinct pleochroism and strong isotropism.

Photomicrograph 42



Transmitted light
Only lower polar

Photomicrograph 43

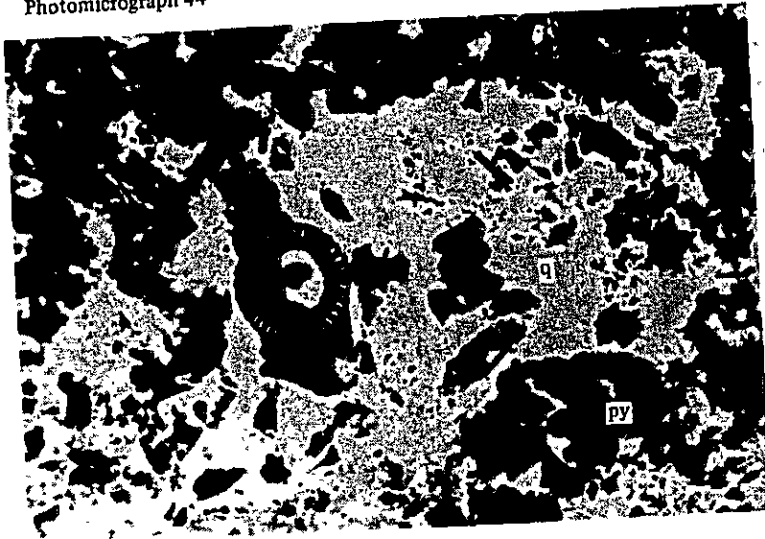


Crossed polars

0 0.3 mm

Sample No. : 8-A-103
Rock name : Low grade manganese ore, Halfa formation.
Locality : No.1 ore deposit, Eastern Sur area.
Observation : Pyrolusite occurs as interstices of chert composed of very fine-grained quartz. Feathery pyrolusite develops on the margin of pyrolusite and some parts of pyrolusite show spherulitic structure.

Photomicrograph 44



Transmitted light
Only lower polar

Photomicrograph 45

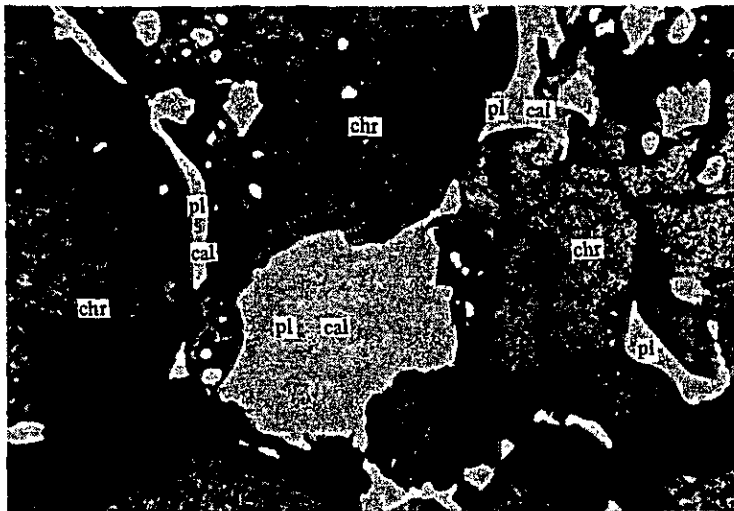


Crossed polars

0 0.3 mm

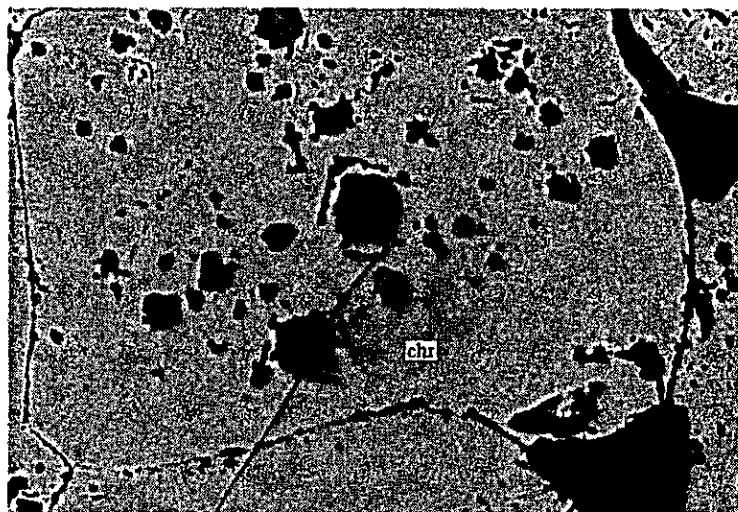
Sample No. : 8-A-103
Rock name : Low grade manganese ore, Halfa formation
Locality : No.1 ore deposit, Eastern Sur area.
Observation : The radiolarian inner part of which is replaced by quartz and pyrolusite is present.

Photomicrograph 46



Transmitted light
Only lower polar

Photomicrograph 47

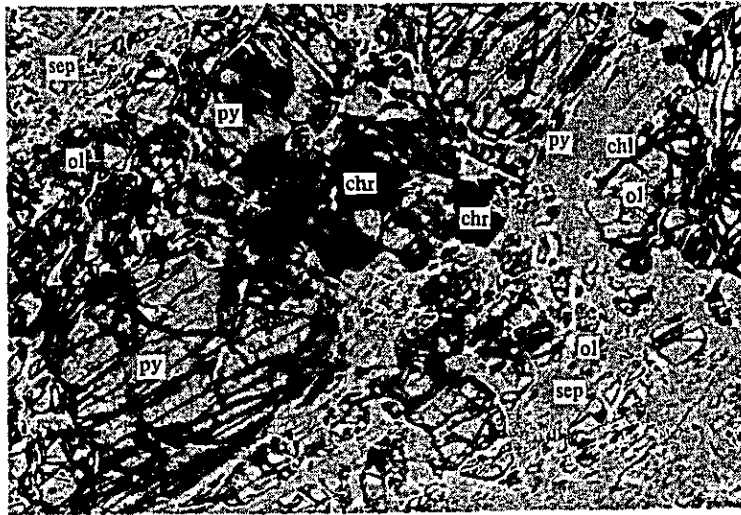


Reflected light
Only lower polar

0 0.5 mm

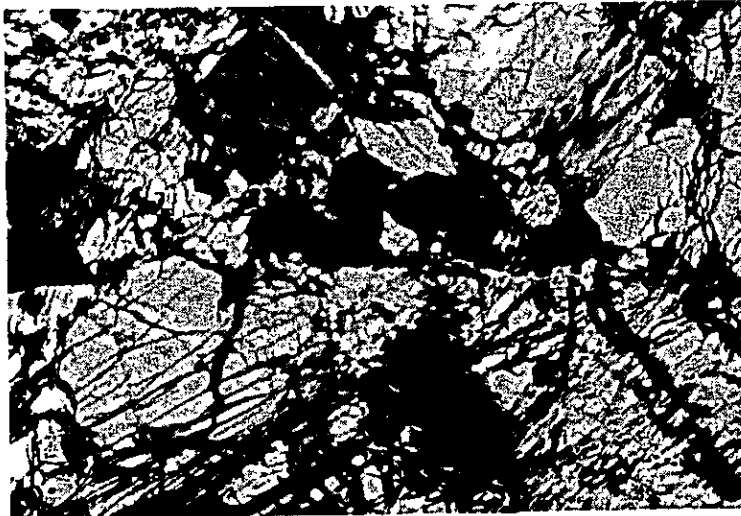
Sample No. : 5-A-101
Rock name : Chrome ore.
Locality : Wadi Jahfan, Batinah Coast area.
Observation : Under transmitted light chromite is brown in color with dark brown to opaque part along rim and crack. Under reflected light is dark gray in color. Filling up the interstices of chromite and in chromite, feldspar is present, sometimes accompanying carbonate.

Photomicrograph 48



Only lower polar

Photomicrograph 49



Crossed polars



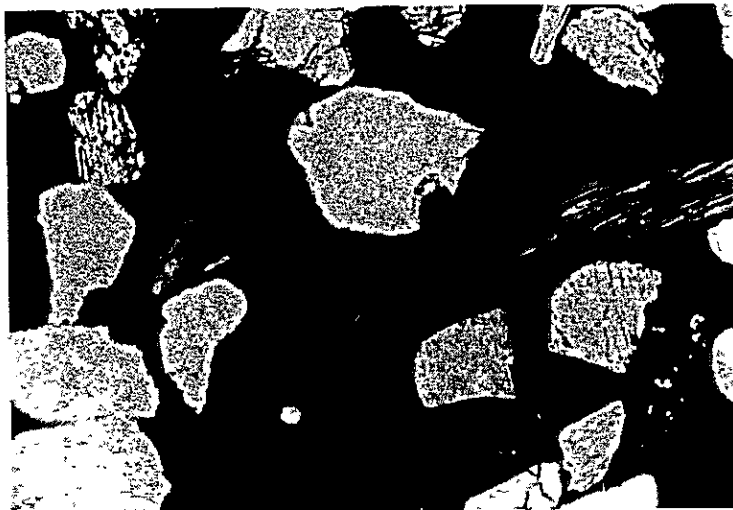
Sample No. : 6-A-101
Rock name : Olivine bearing serpentinized pyroxenite.
Locality : Al Bustan, Batinah Coast area.
Observation : The rock is holocrystalline and composed of abundant serpentinized olivine and augite as well as a small amount of chromite.
Chromite grains up to 0.5 mm, translucent, brown and isotropic, are embeded in the matrix of augite and olivine. Numerous network veinlets of serpentine cut the augite and olivine.

Photomicrograph 50



Only lower polar

Photomicrograph 51







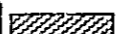
Crossed polars

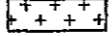
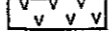
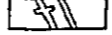
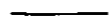
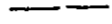



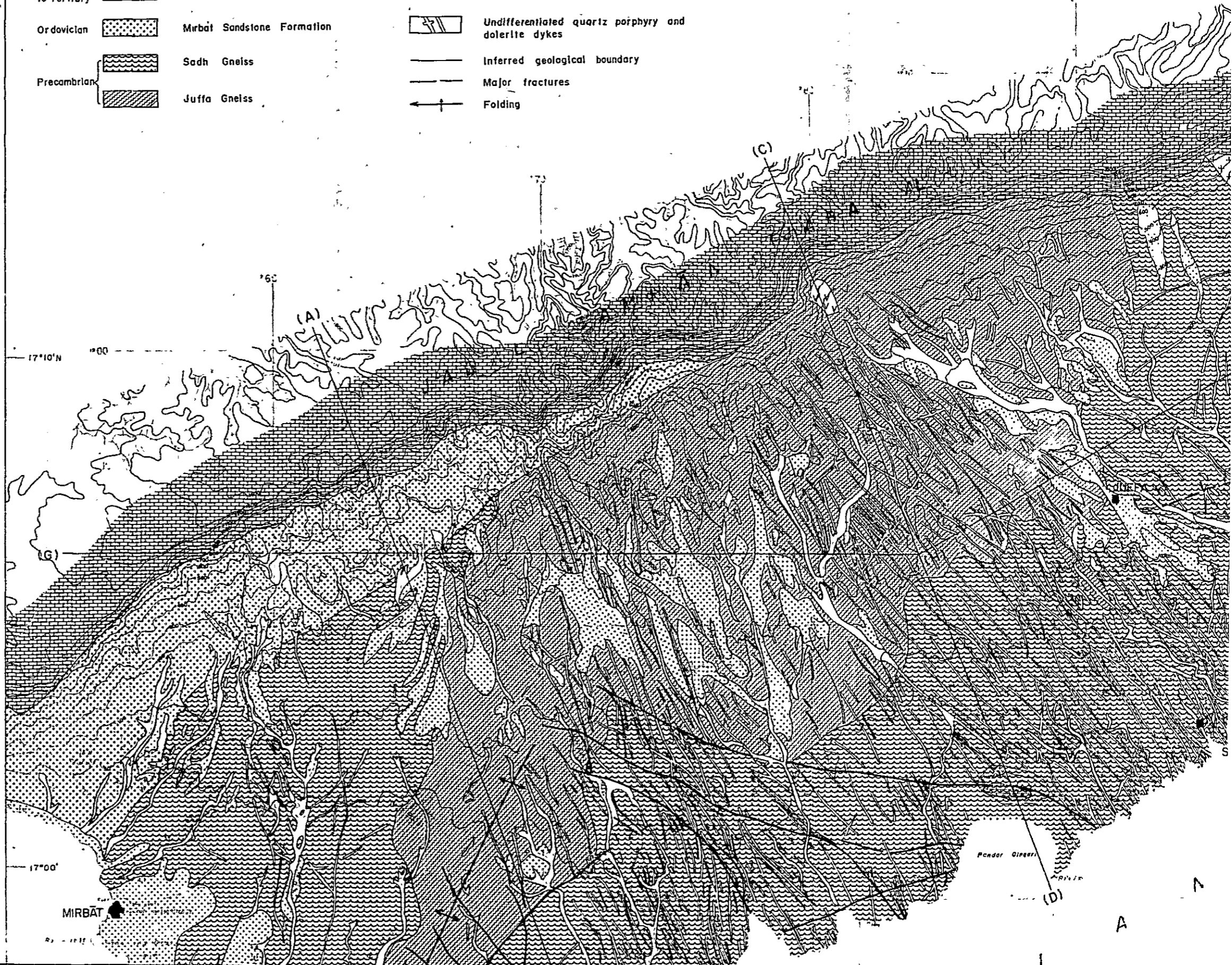
Sample No. : 6-A-11
Rock name : Beach sand (heavy part).
Locality : Wudam Aiwa, Batinah Coast area.
Observation : The heavy grains are composed of augite, chromite, olivine as well as a small amount of hornblende.
Chromite grains are dark brown.

LEGEND

IGNEOUS ROCKS

- Quaternary  Sand gravel
- Cretaceous to Tertiary  Umm er Radhuma Formation
- Ordovician  Mirbat Sandstone Formation
- Precambrian  Sakh Gneiss
- Precambrian  Juffa Gneiss

-  Quartz diorite ~ granodiorite
-  Adamellite
-  Undifferentiated quartz porphyry and dolerite dykes
-  Inferred geological boundary
-  Major fractures
-  Folding

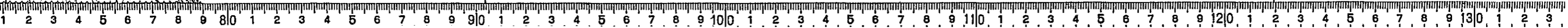
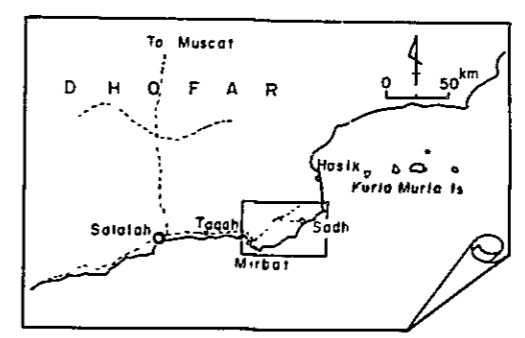
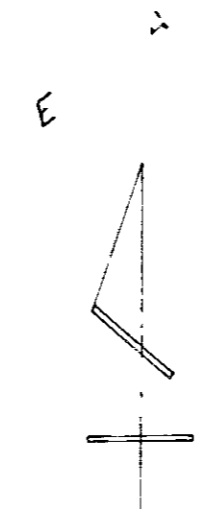
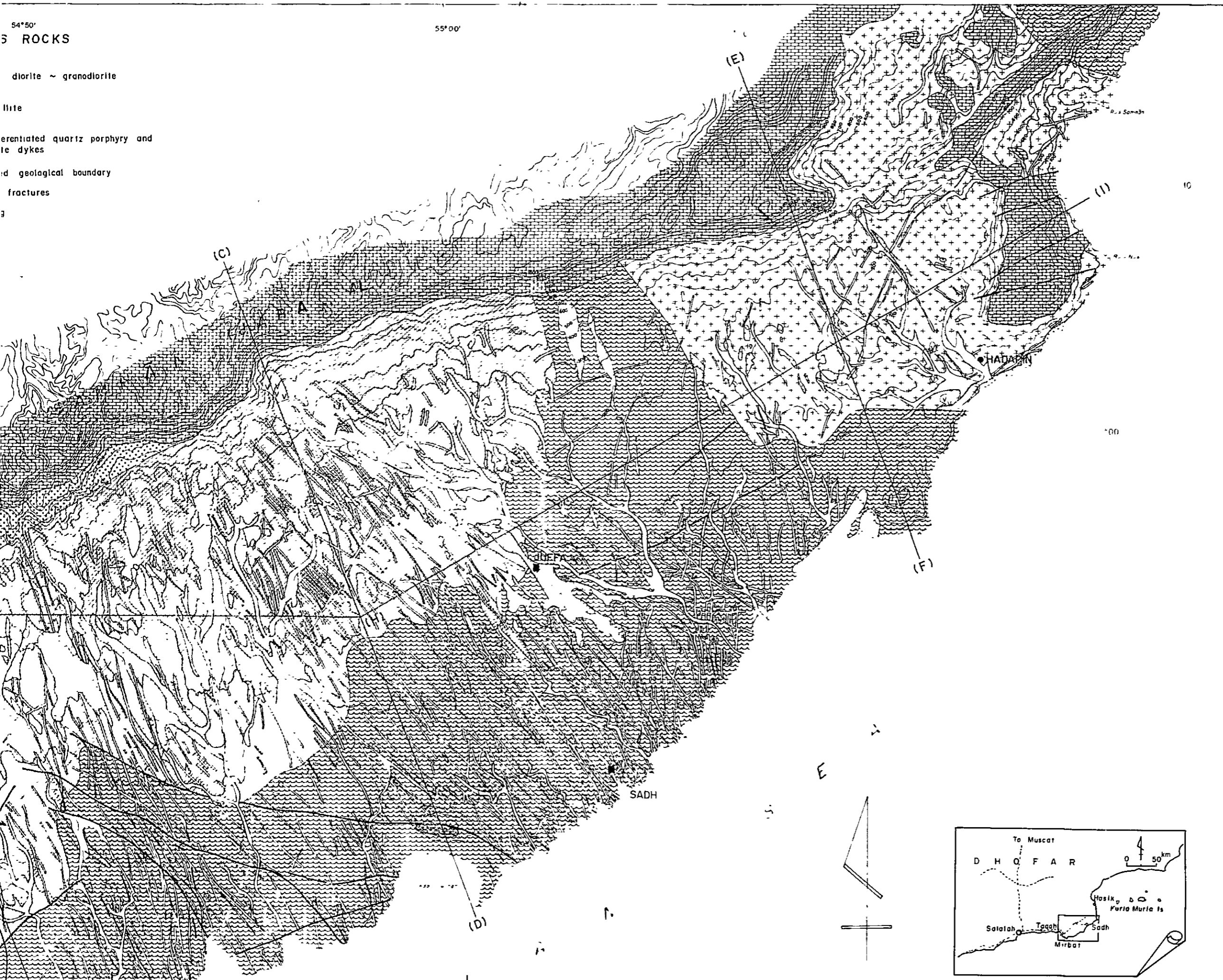


54°50'

55°00'

ROCKS

- diorite ~ granodiorite
- gabbro
- basalt
- differentiated quartz porphyry and
leucite dykes
- geological boundary
- fractures



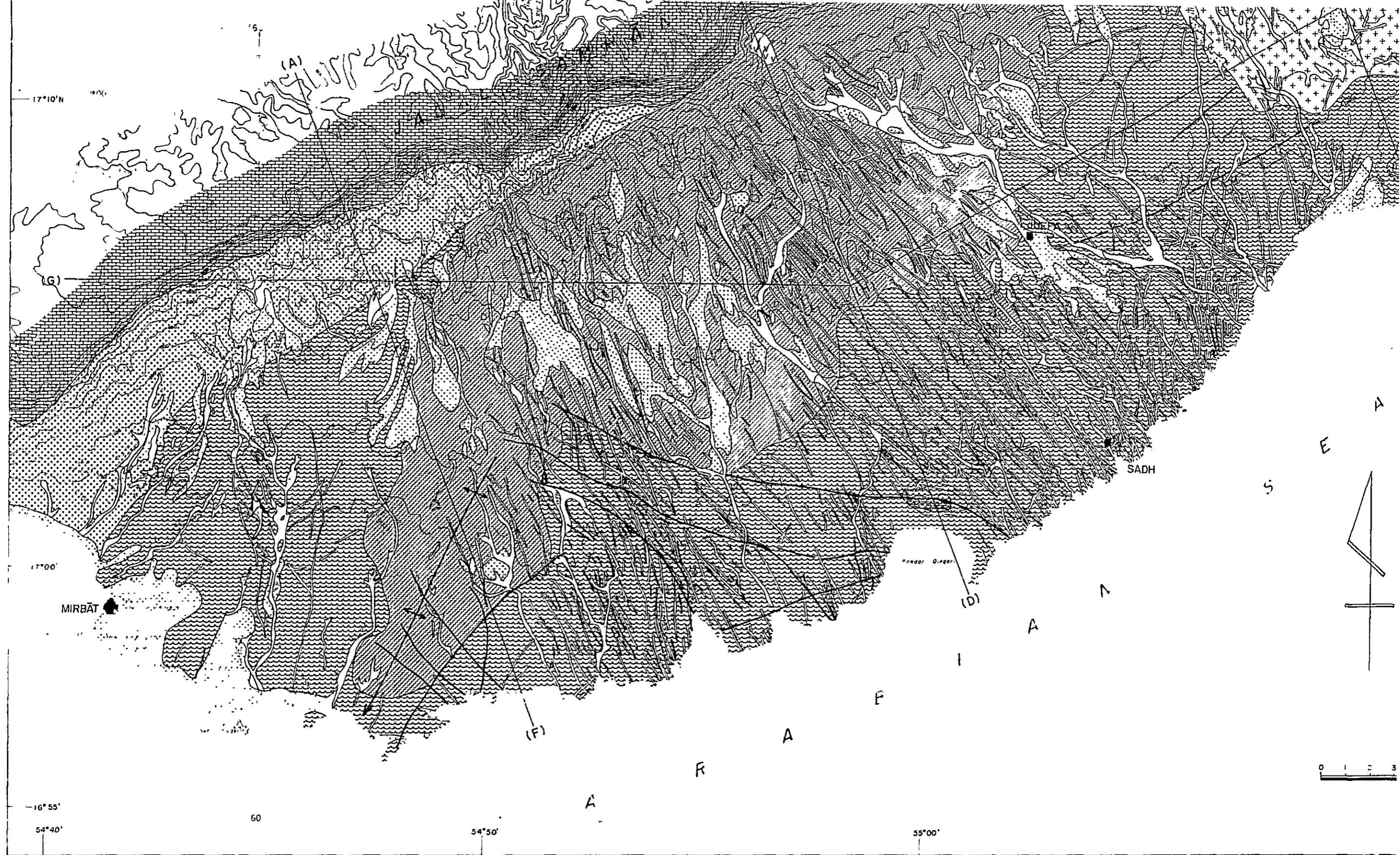


Fig. 11 Geologic map of Salah area.



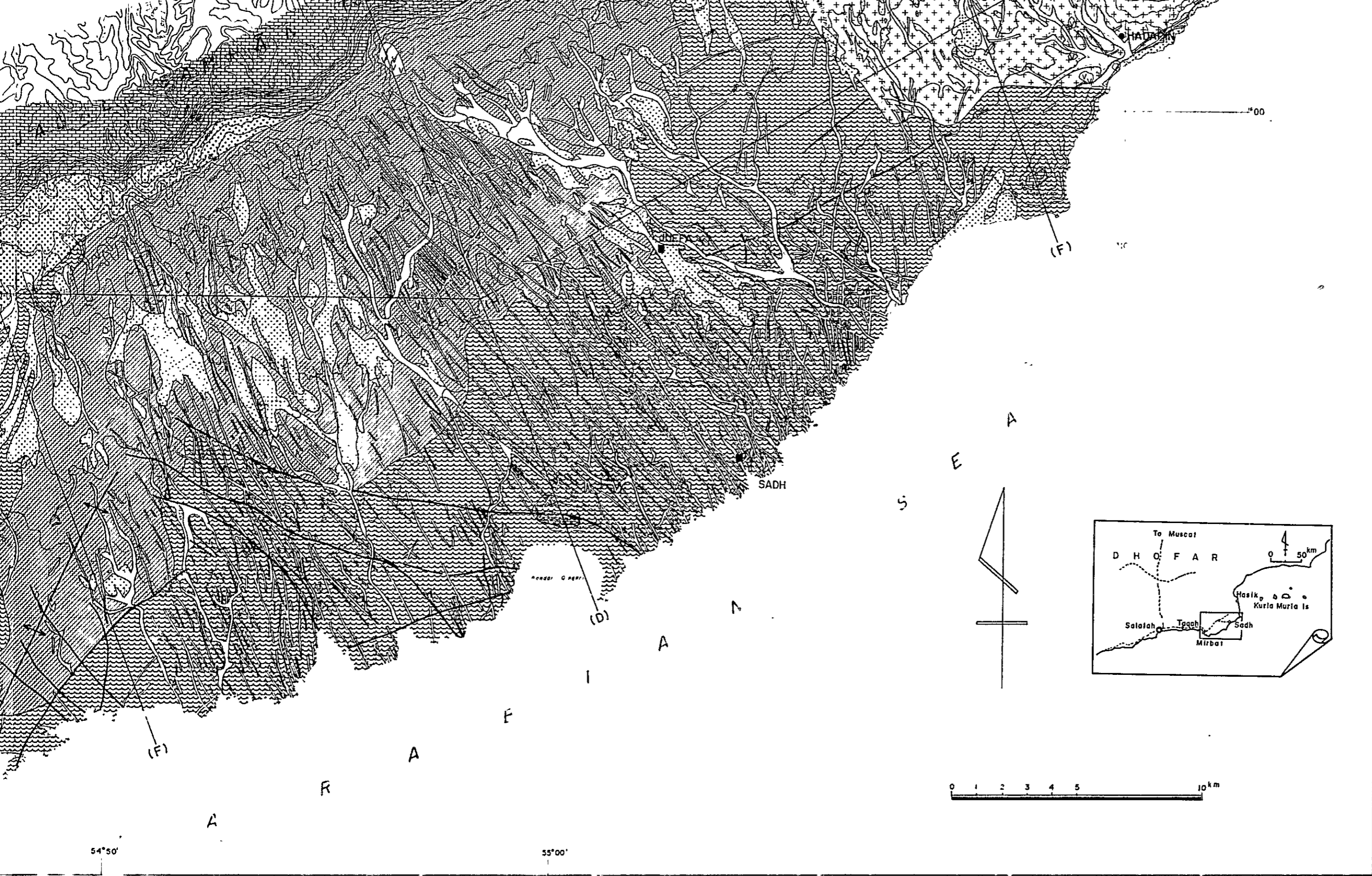


Fig. 11 Geologic map of Salalah area.

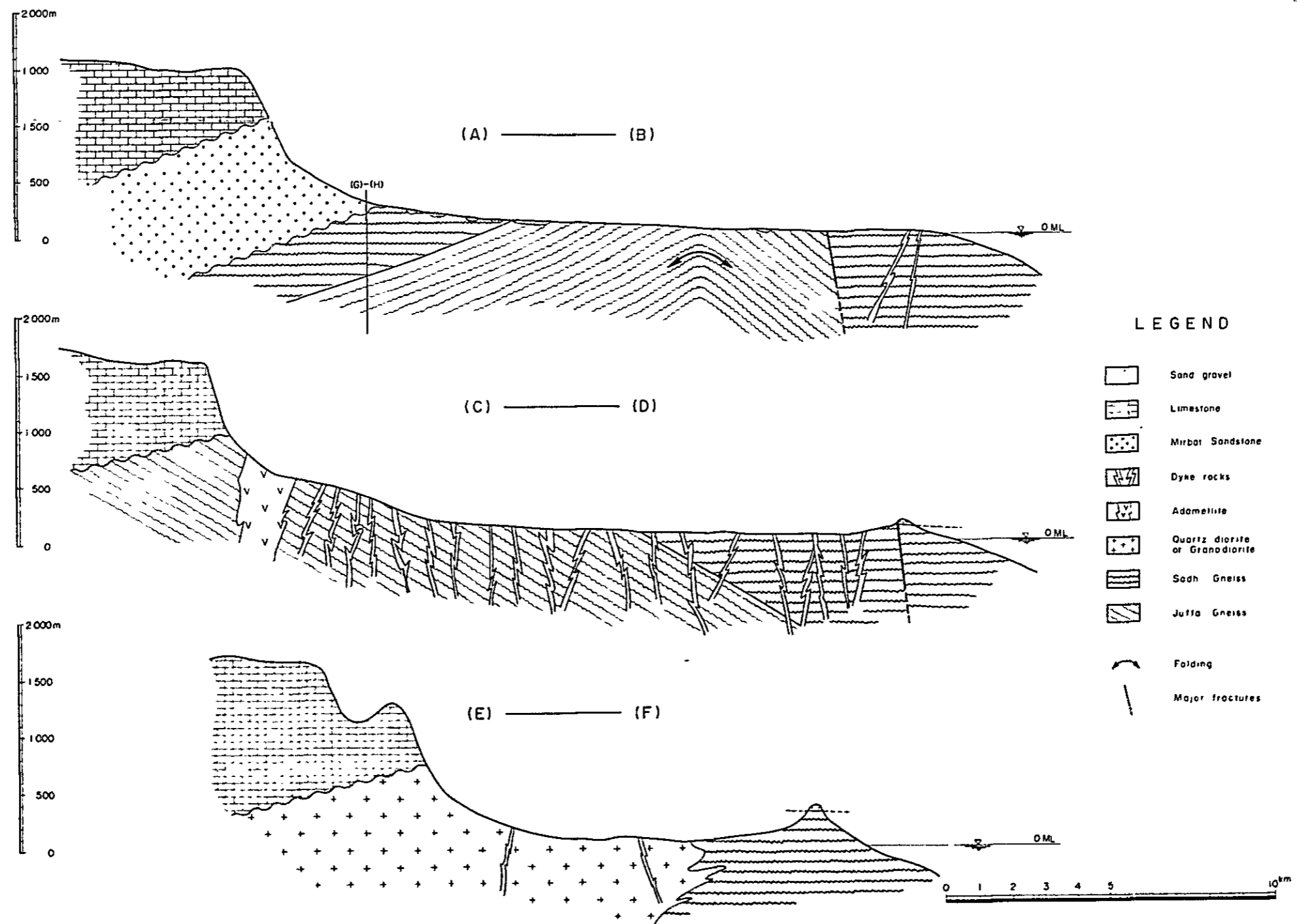


Fig. 12 Geological cross sections of Salah area (1)

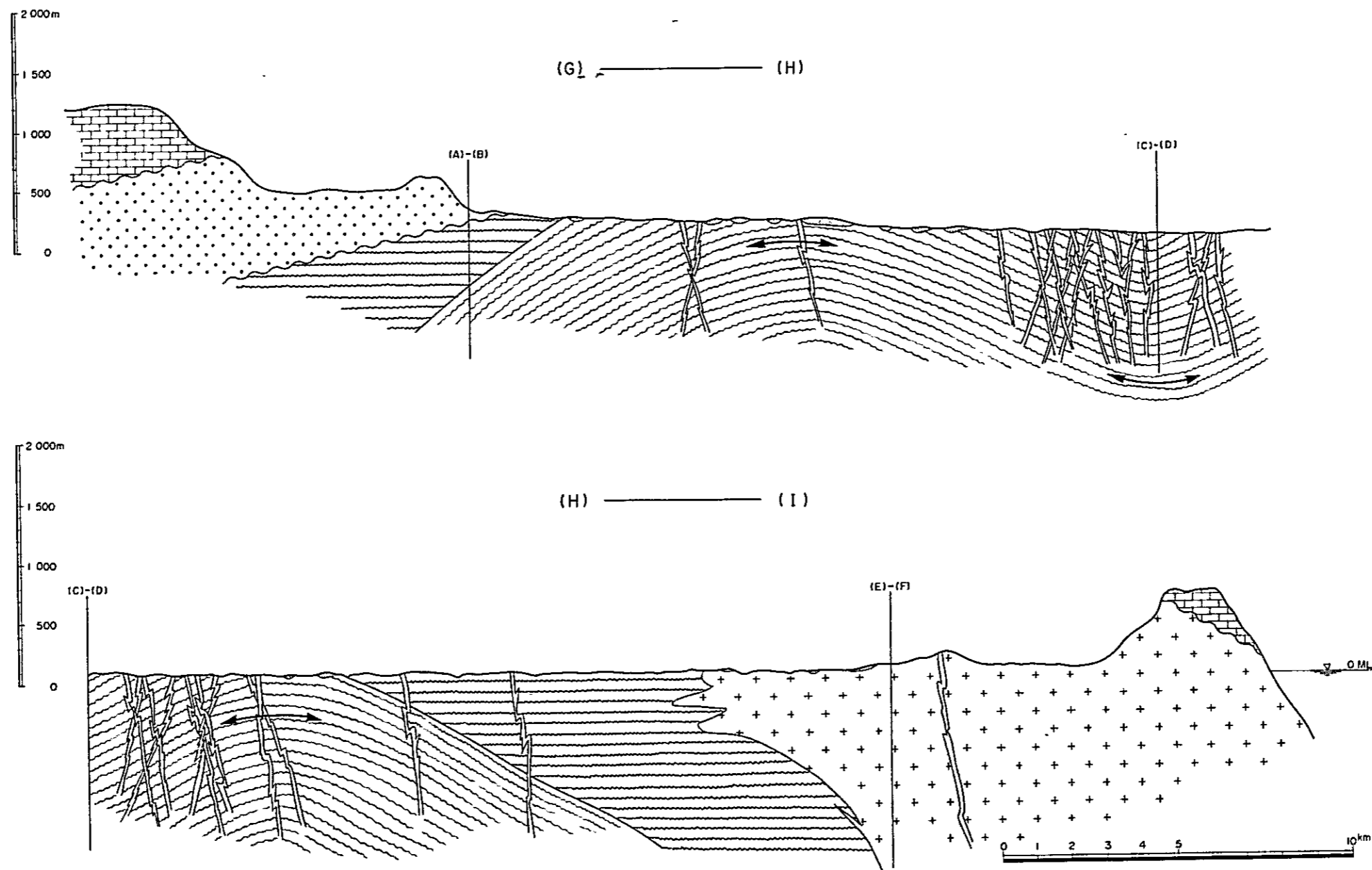


Fig. 13 Geological cross sections of Salah area (2)

