PHOTOGRAPHS

Photo. 1 General View of Juffa Gneiss, II-member consists mainly of mica gneiss
Loc. Wadi Shaat

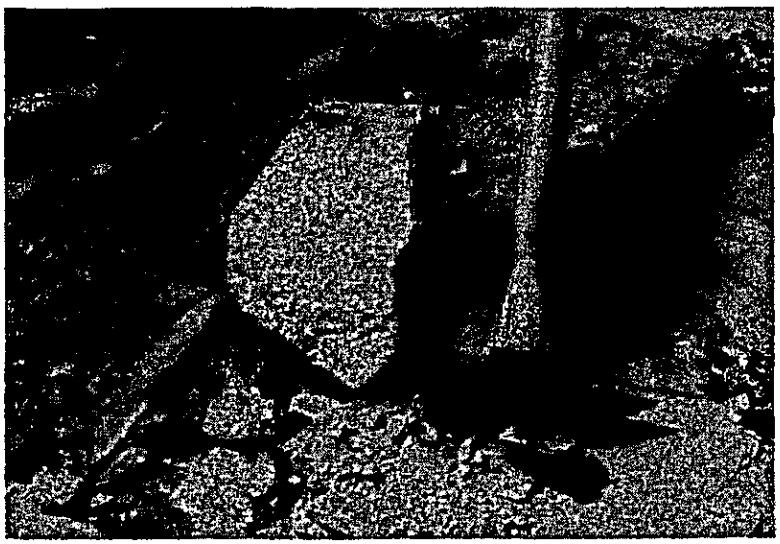


Photo. 2 Mica gneiss in II-member of Juffa Gneiss
Loc. Wadi Shaat

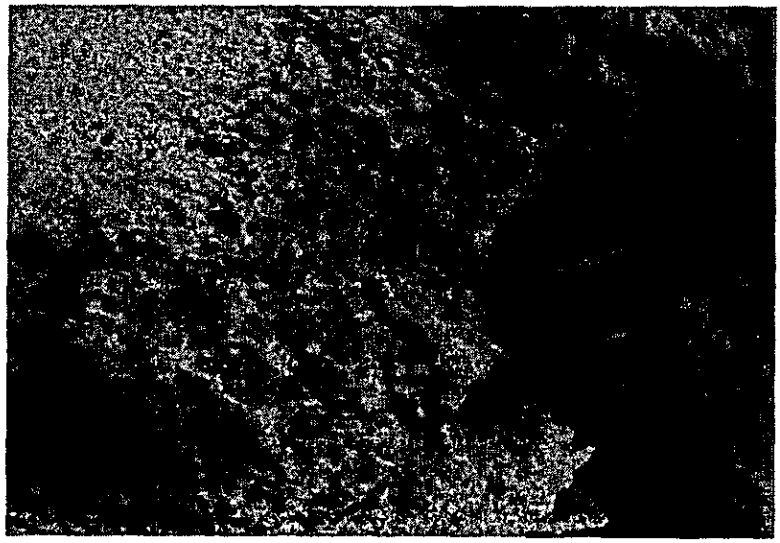


Photo. 3 Coarse grain Garnet in II-member of Juffa Gneiss
Loc. Wadi Ain

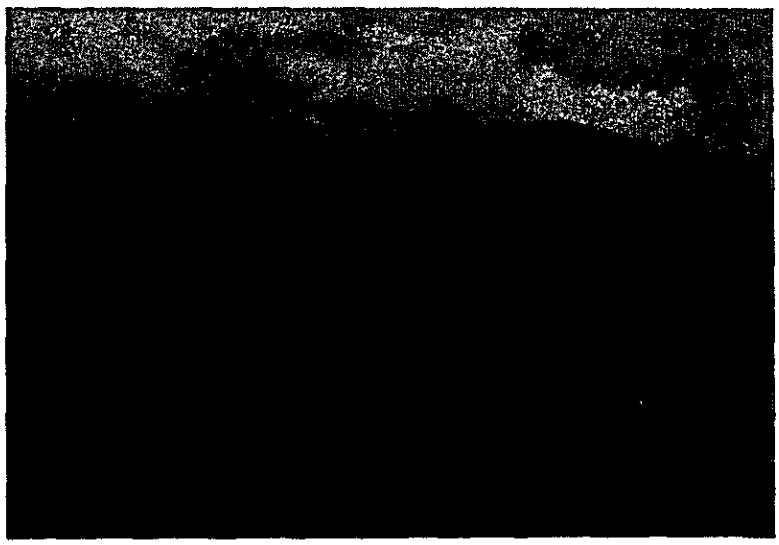


Photo. 4 Juffa Gneiss, I-member consists of alternation of mica gneiss and basic gneiss
Loc. Wadi Bayt Said

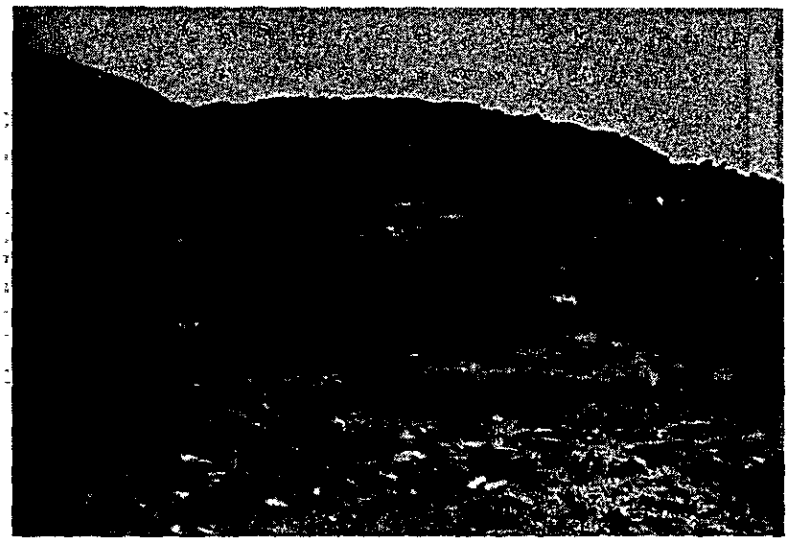


Photo. 5 Juffa Gneiss, I-member (alternation of mica gneiss and basic gneiss)
Loc. Wadi Shaat

Photo. 6 Juffa Gneiss, I-member intercalates basic gneiss
Loc. Wadi Bayt Said

Photo. 7 Basic gneiss of Sadh Gneiss showing a minor folding, cut by quartz veinlets
Loc. Wadi Atah

Photo. 8 Basic gneiss of Sadh Gneiss showing a minor folding
Loc. Wadi Anib

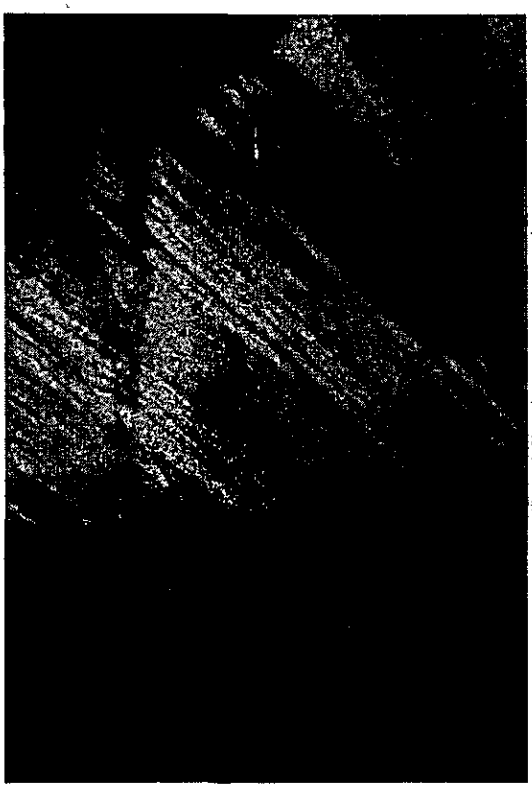


Photo. 9 Intermediate gneiss of Sadh Gneiss
Loc. Wadi Anib

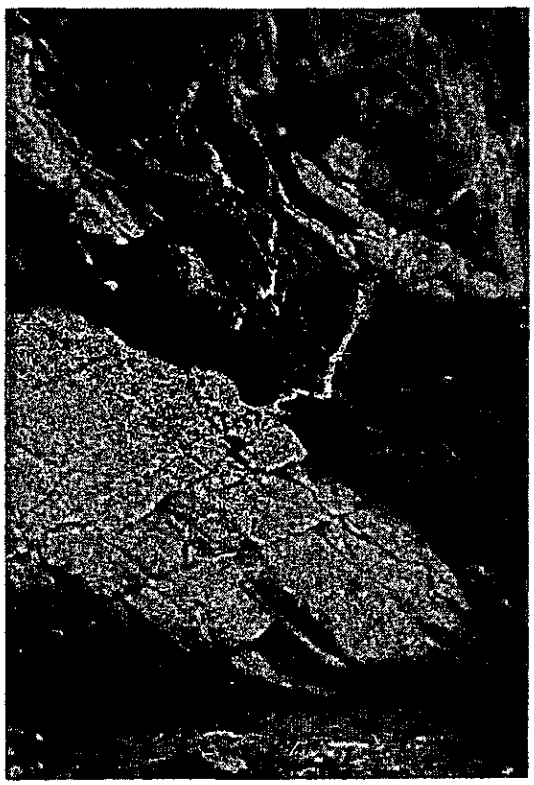


Photo. 10 Sada Gneiss consists of acidic gneiss (black)
Loc. Wadi Anib

Photo. 11 Quartz rich pegmatite veins (white) intruded into Sadh Gneiss
Loc. Wadi Hinun

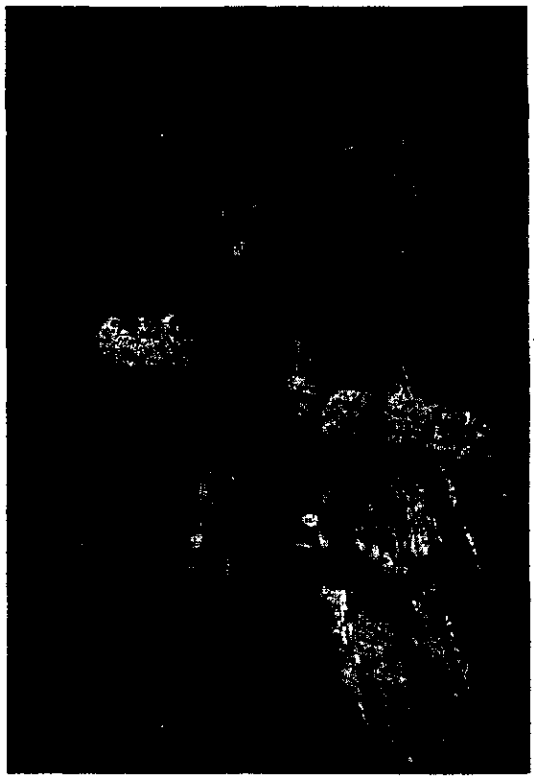


Photo. 12 Potash feldspar rich pegmatite vein intruded into Sadh Gneiss
Loc. Wadi Ain

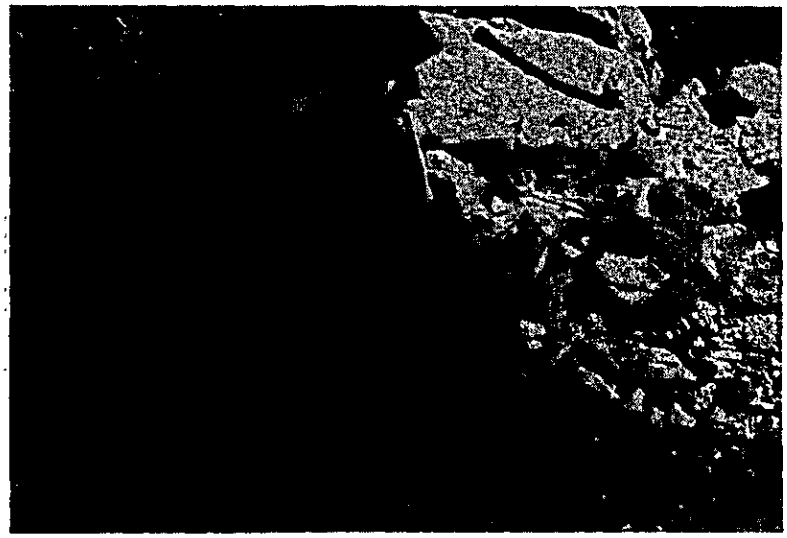


Photo. 13 Quartz rich pegmatite (white) is cut by dolerite dyke (black)
Loc. Wadi Khornhant

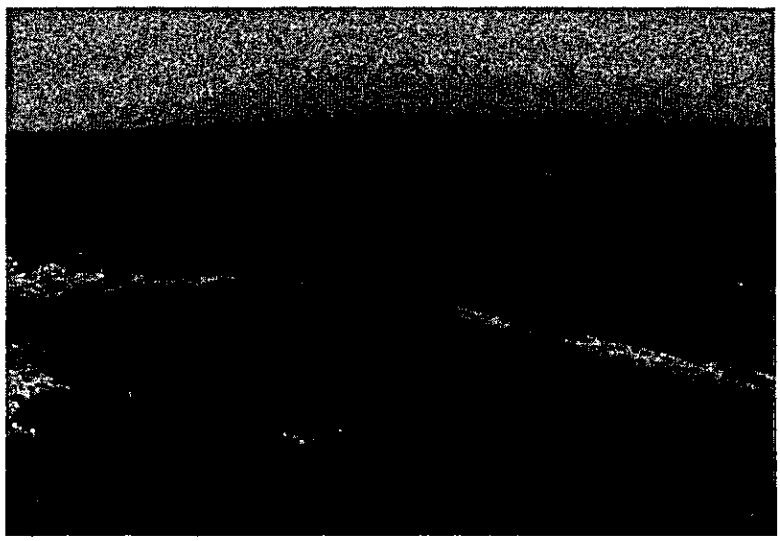
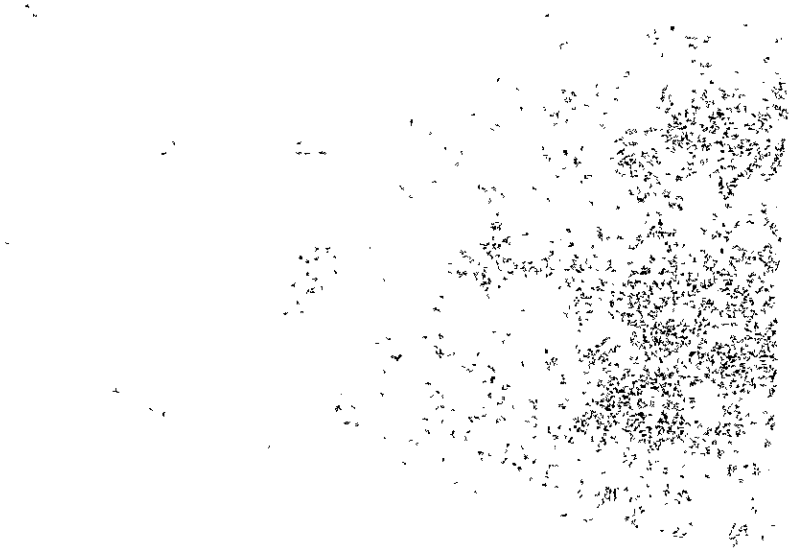


Photo. 14 Quartz rich pegmatites (white) are cut by acidic dyke (dark)
Loc. Wadi Khorhant



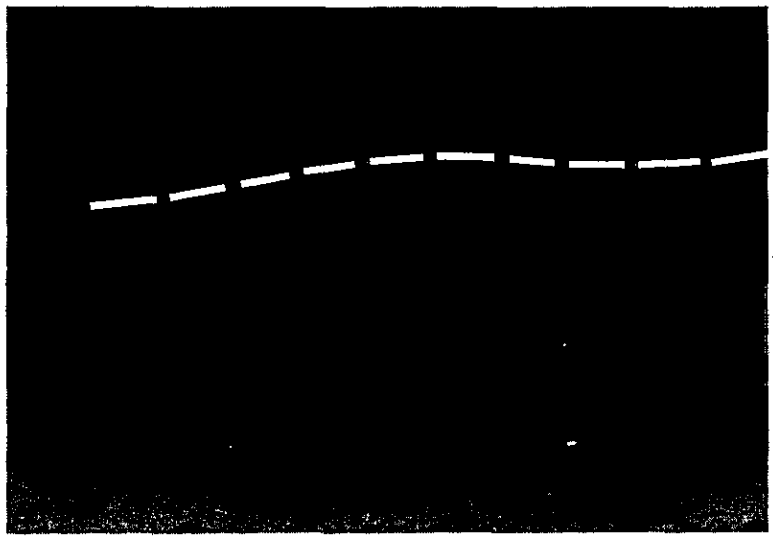


Photo. 15 Hadabin body (granodiorite to quartz diorite) is overlain by Umm er Radhuma Formation (Bedded limestone) Loc. Hadabin

Photo. 16 Xenolith of Sadh Gneiss (dark) in Hadabin body Loc. Wadi Fushi

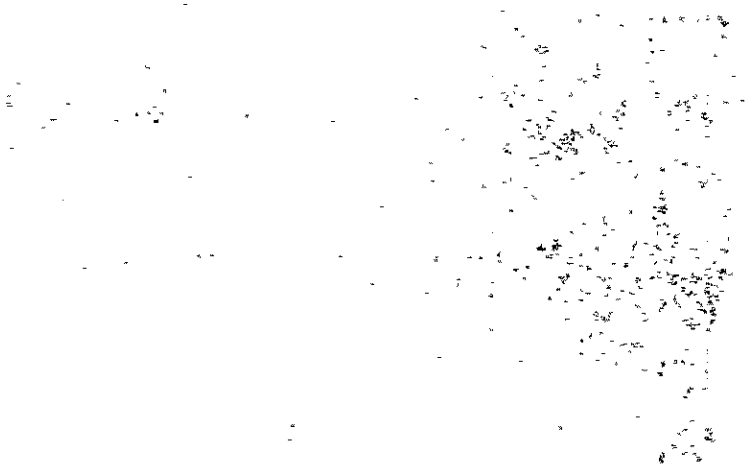


Photo. 17 Quartz monzonite (dark) intruded into Juffa Gneiss
Loc. Wadi Shiliyarn

Photo. 18 Quartz monzonite hill
Loc. Wadi Shiliyarn

Photo. 19 Dolerite dyke intruded into Sadh Gneiss
Loc. Wadi Khornant

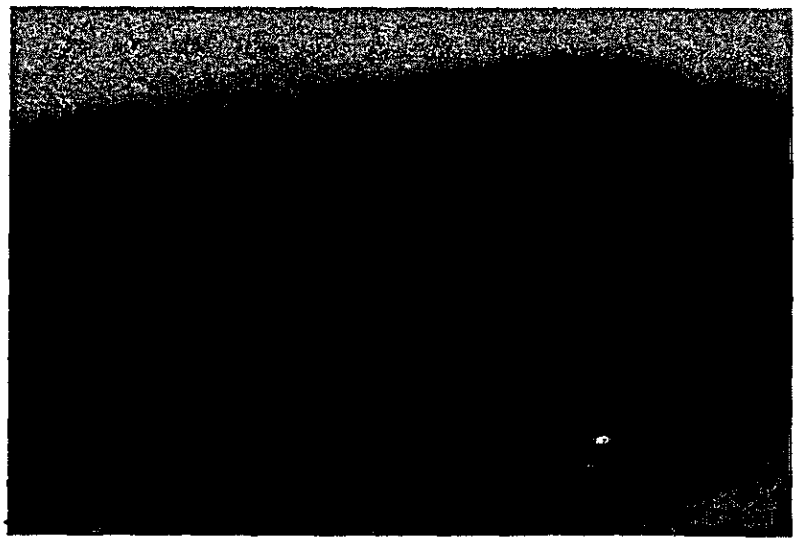


Photo. 20 Acidic dyke forming ridge of hills, intruded into Sadh Gneiss
Loc. Mirbat–Juffa main road

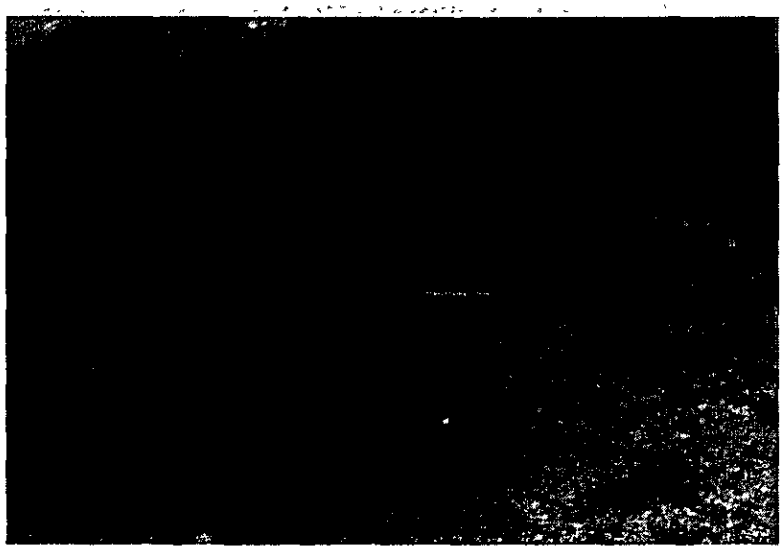


Photo. 21 Dolerite dyke (black) is covered by Mirbat Sandstone Formation shown with hammer
Loc. Wadi Bayt Said

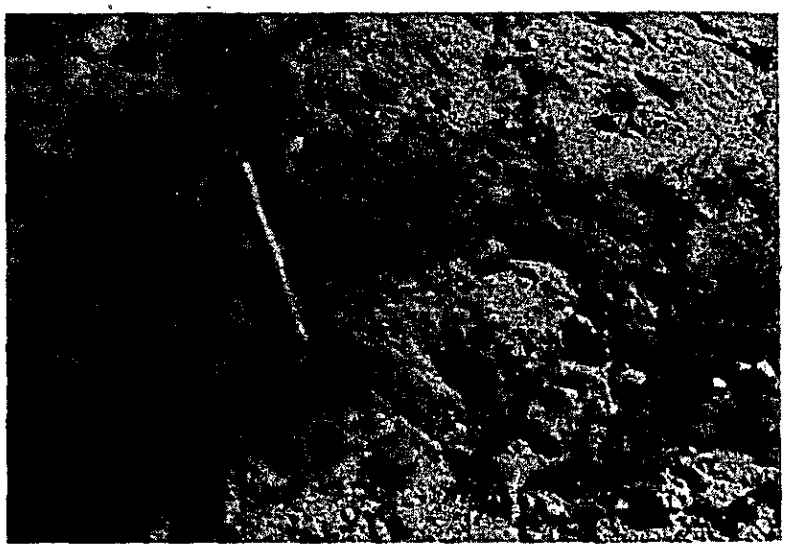


Photo. 22 Conglomerate in the lower member of Mirbat Sandstone Formation
Loc. Wadi Hinun

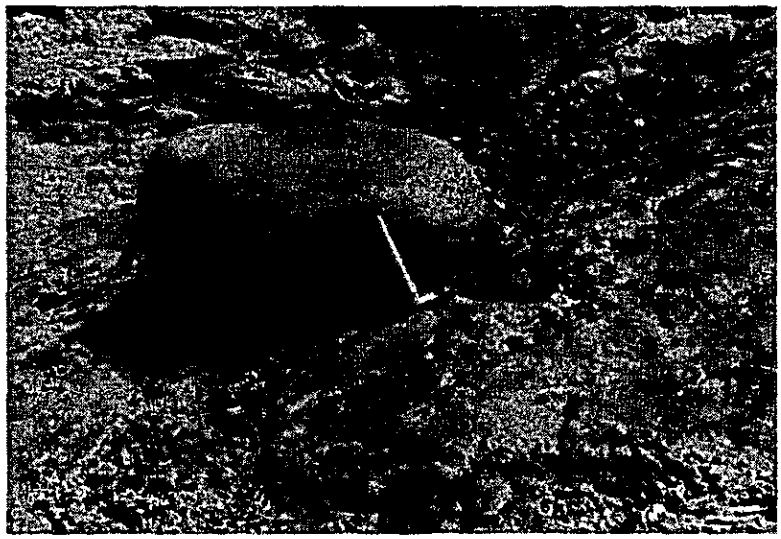


Photo. 23 A granodiorite boulder is observed in conglomerale bed of Lower member of Mirbat Sandstone Formation Loc. Wadi Hinun

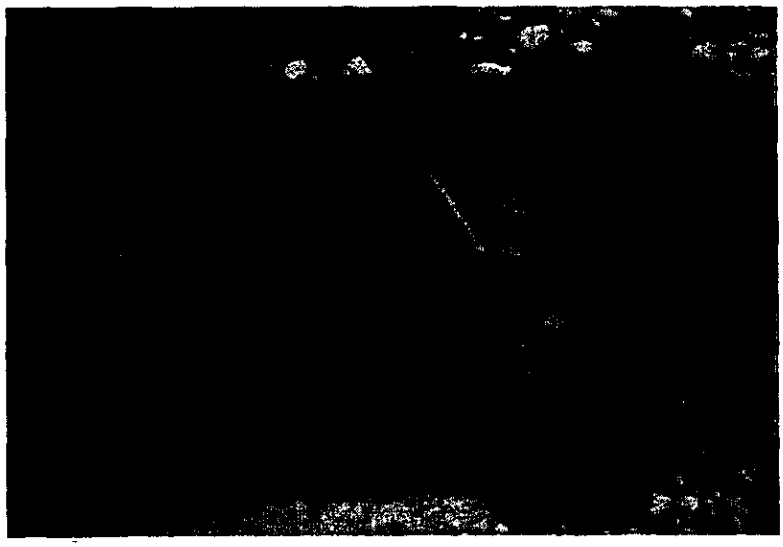


Photo. 24 Basal breccia consisting mainly of Sadh Gneiss is observed in Lower member of Mirbat Sandstone Formation Loc. Wadi Ercahol

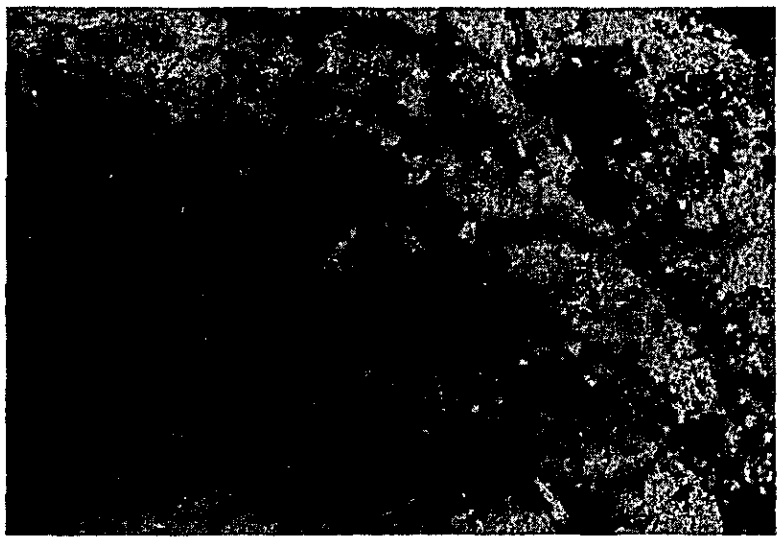


Photo. 25 Barite veins in Lower member of Mirbat Sandstone Formation
Loc. Wadi Ercahol

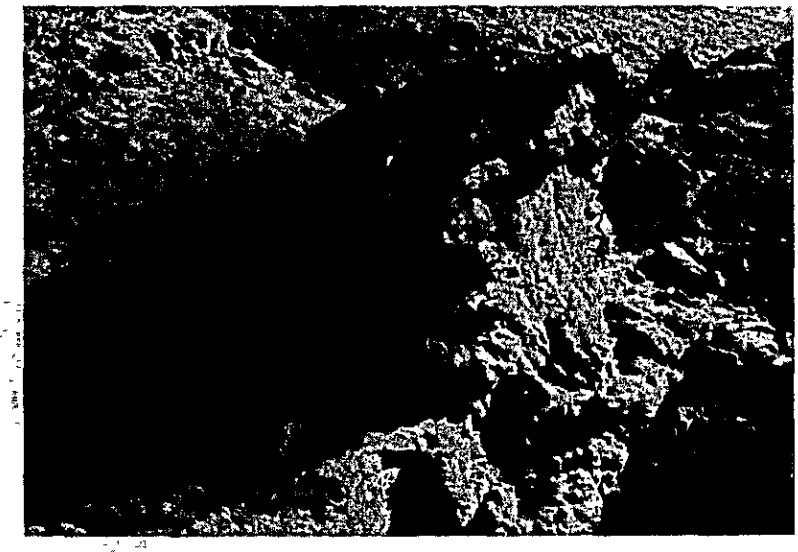


Photo. 26 Limestone (stinkstone) at the base of Middle member of Mirbat Sandstone Formation
Loc. Wadi Ercahol

Photo. 27 Very coarse grain quartzose sandstone in Middle member of Mirbat Sandstone Formation
Loc. Wadi Hinun

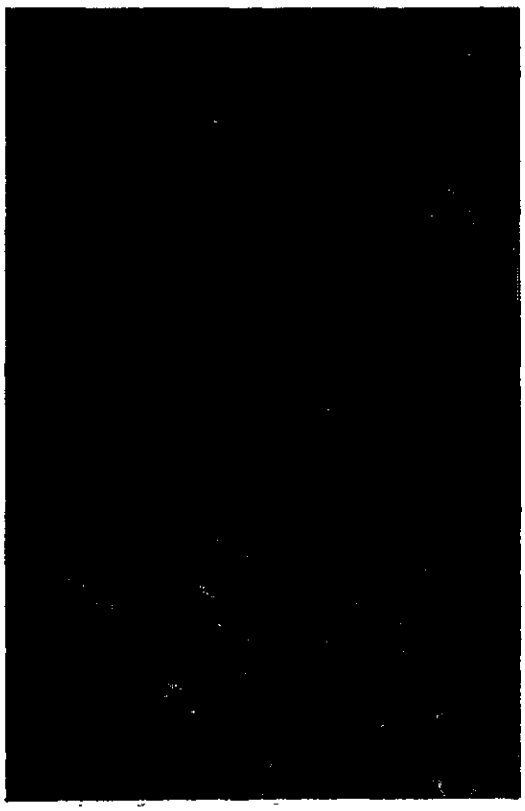
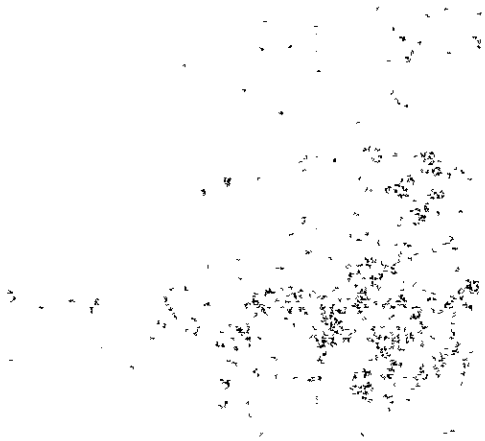


Photo. 28 General view of Middle member of Mirbat Sandstone Formation
Loc. Wadi Ercahol



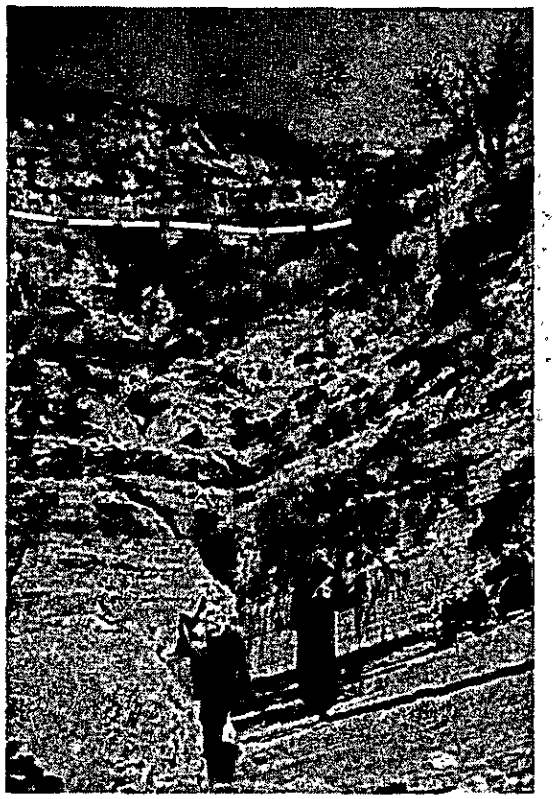


Photo. 29 Upper member of Mirbat Sandstone Formation is overlain by Umm er Radhuma Formation
Loc. Wadi Ercahol

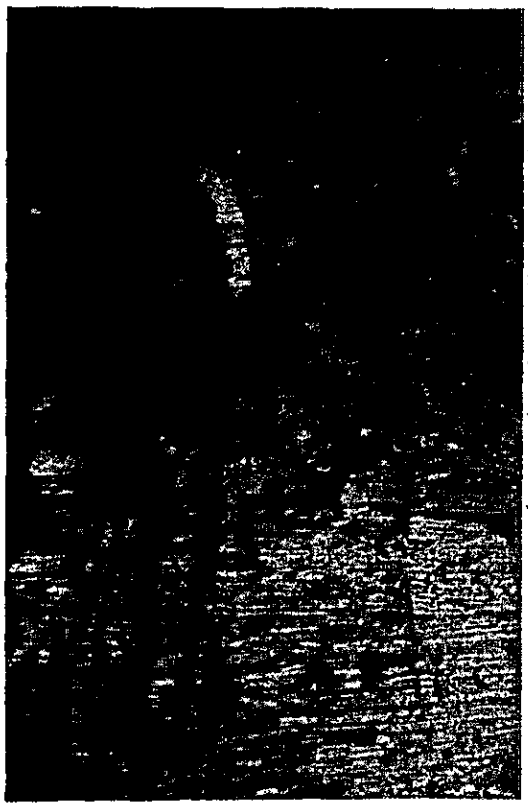


Photo. 30 Buff colour shale with intercalation of fine sandstone is observed in Upper member of Mirbat Sandstone Formation
Loc. Wadi Ercahol

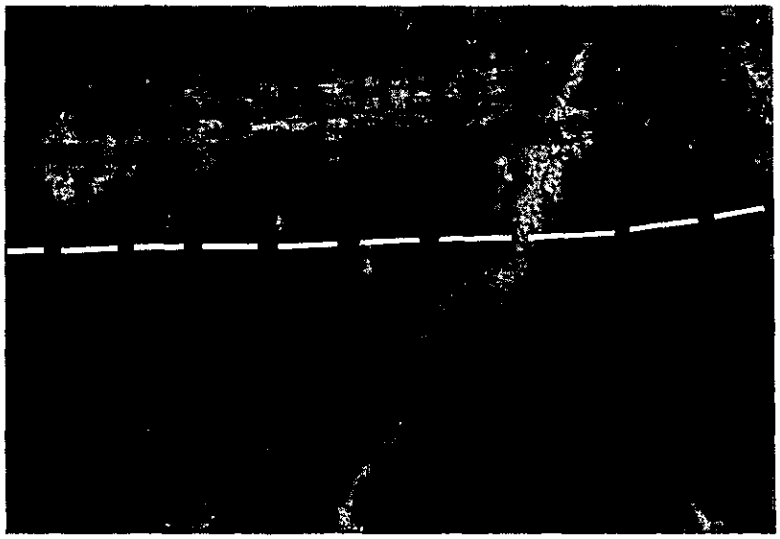


Photo. 31 Boundary of Umm er Radhuma Formation and Mirbat Sandstone Formation
Loc. Jabal Samhan

Photo. 32 General view of escarpment with Umm er Radhuma Formation
Loc. Jabal Samhan

Photo. 33 Umm er Radhuma Formation showing a well bedded structure
Loc. Jabal Samhan

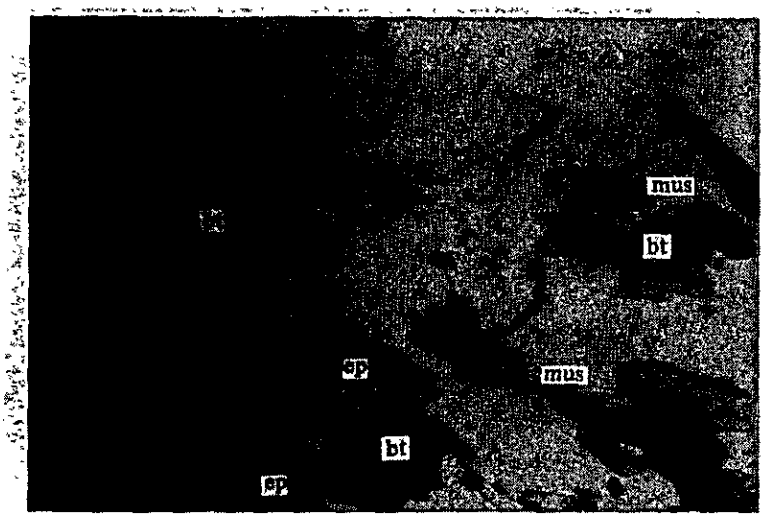
Photo. 34 White unconsolidated sandstone at the base of Umm er Radhuma Formation
Loc. Wadi Maseer

APPENDICES

Fig. A–1 Microphotography of Thin Section

Abbreviations

q : quartz
pl : plagioclase
kf : potash feldspar
bt : biotite
mus : muscovite
hb : hornblende
au : augite
ga : garnet
op : opaque mineral
sph : sphene
ser : sericite
ep : epidote



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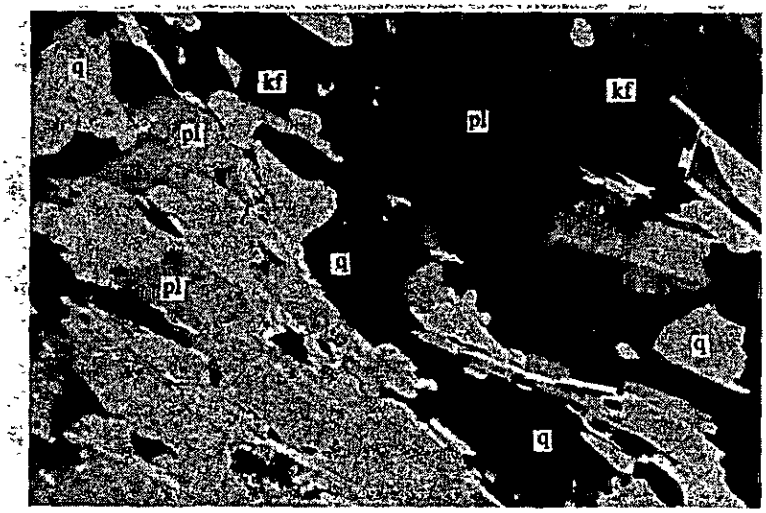
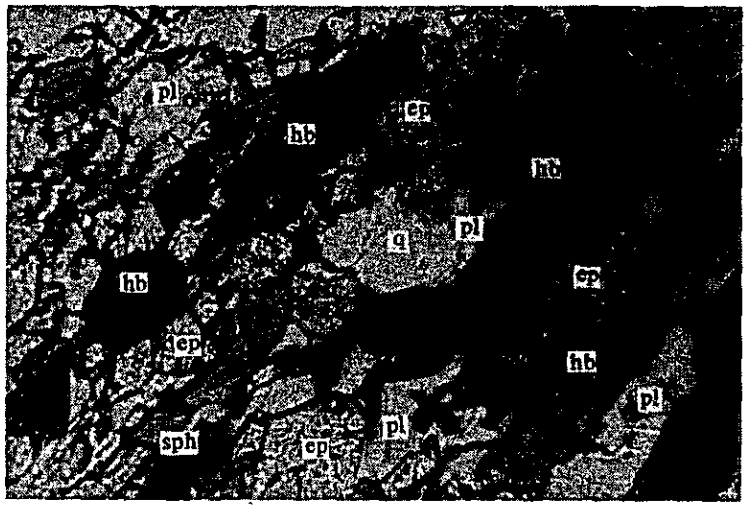


Crossed polars

0 1 mm

Sample No.	:	D–035
Rock name	:	Muscovite biotite gneiss, Juffa Gneiss.
Location	:	Wadi Bayt Said
Observation	:	The rock is composed of quartz, K-feldspar, plagioclase, biotite, muscovite, garnet and others showing gneissose texture and myrmekitic texture.
Quartz	:	Maximum 2.5 mm, anhedral.
K-feldspar	:	Maximum 2 mm, anhedral to subhedral, showing microcline structure.
Plagioclase	:	0.4 to 1.3 mm, anhedral, partly altered to sericite.
Biotite	:	Maximum 2 mm in length, partly altered to chlorite.
Muscovite	:	Maximum 2.5 mm in length.
Garnet	:	0.05 to 0.5 mm, euhedral.
Others	:	Epidote, apatite, opaque minerals.



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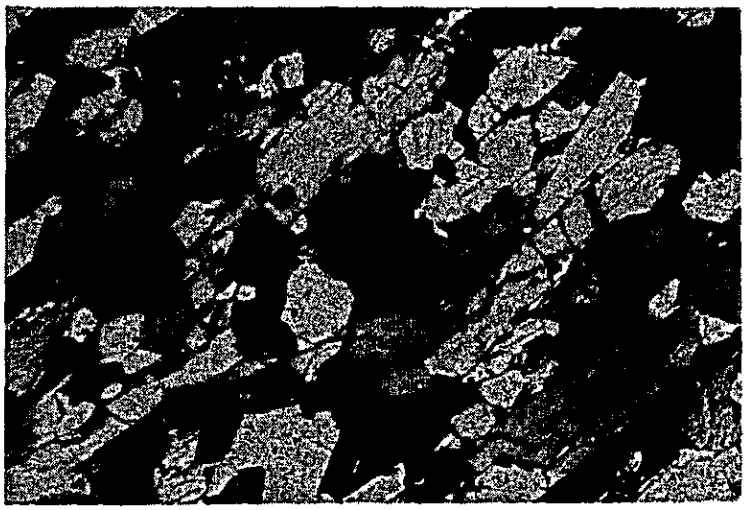
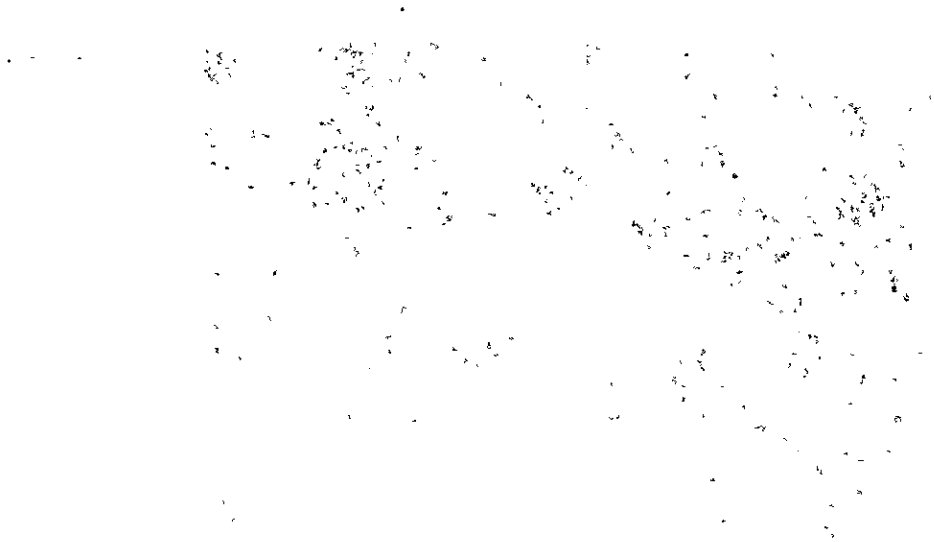


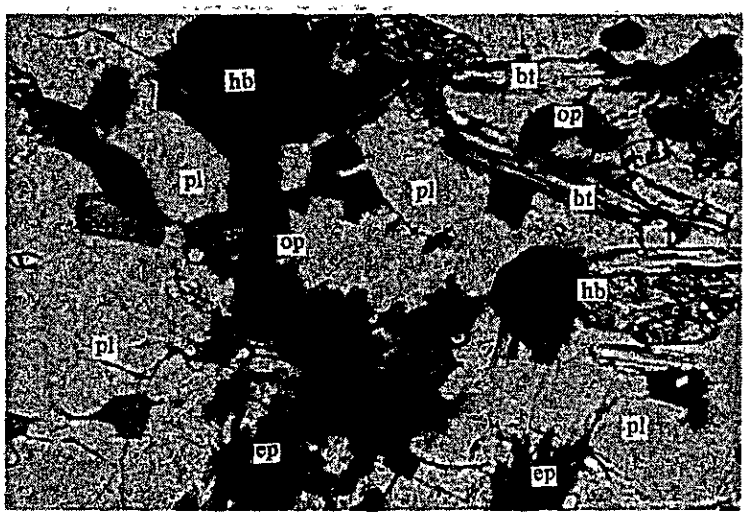
Crossed polars

0 0.5 mm

Sample No. : C–002
Rock name : Epidote hornblende gneiss, Juffa Gneiss.
Location : Wadi Ain
Observation : The rock is composed of hornblende, plagioclase, epidote, quartz, sphene and garnet showing gneissose texture.

Hornblende	:	0.1 to 1.0 mm, euhedral, pale green to bluish green colours.
Plagioclase	:	0.1 to 0.4 mm, anhedral, sometimes altered to sericite in a vermicular form.
Epidote	:	0.05 to 0.3 mm, euhedral.
Quartz	:	Maximum 0.8 mm, anhedral.
Sphene	:	Maximum 0.15 mm, euhedral.
Garnet	:	0.1 mm, euhedral.





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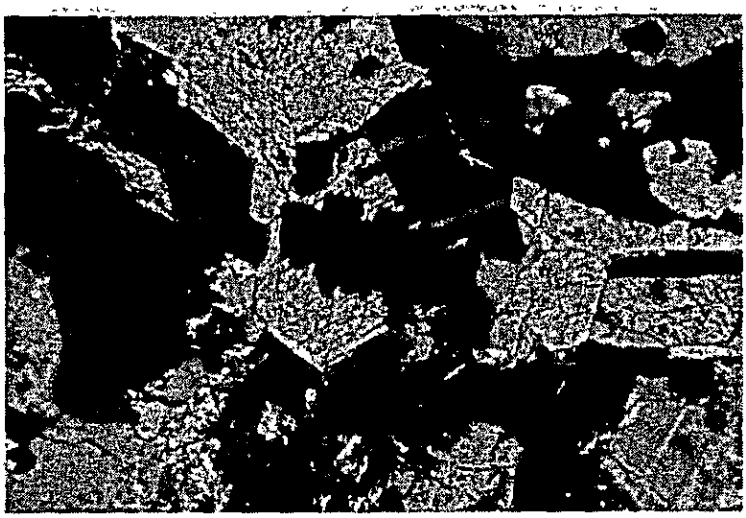
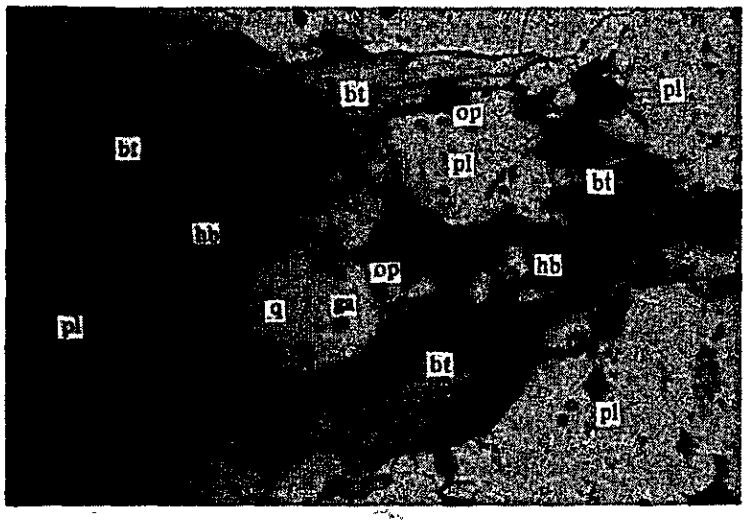


Crossed polars

0 0.5 mm

Sample No. : A–021
Rock name : Biotite hornblende gneiss, Sadh Gneiss.
Location : Wadi Shaat
Observation : The rock is composed of hornblende, plagioclase, biotite and others showing gneissose texture

Hornblende	:	0.05 to 0.5 mm, euhedral to subhedral, pale green to green or bluish green.
Plagioclase	:	0.1 to 0.3 mm, anhedral to subhedral, altered to sericite and epidote.
Biotite	:	0.2 to 0.4 mm in length, partly or completely altered to chlorite or epidote.
Others	:	abundant opaque minerals and very small amount of garnet and apatite.



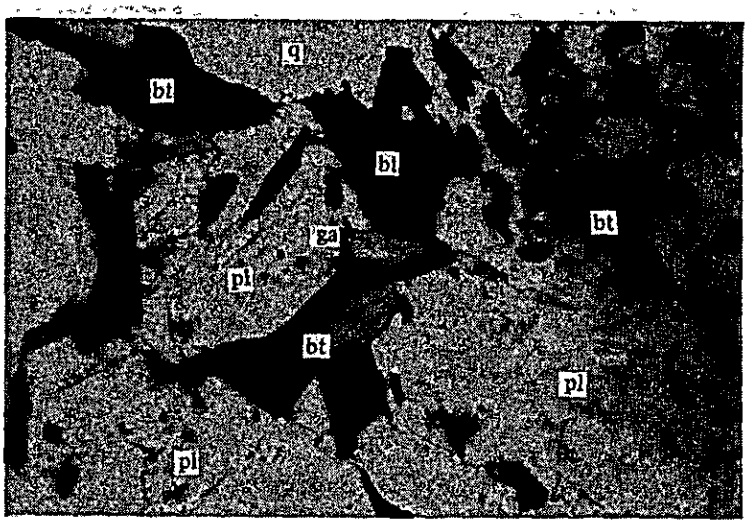
Only lower polar

Crossed polars

0 1 mm

Sample No. : C–055
Rock name : Hornblende biotite gneiss, Sadh Gneiss.
Location : Wadi Ain
Observation : The rock is composed of plagioclase, biotite, quartz, hornblende, garnet and others showing gneissose texture

Plagioclase	:	0.2 to 2.0 mm, anhedral, partly altered to sericite.
Biotite	:	0.2 to 0.8 mm in length, rarely includes garnet.
Quartz	:	Maximum 0.8 mm, anhedral.
Hornblende	:	0.2 to 1.2 mm, euhedral to subhedral, pleochroism and cleavage are distinct.
Garnet	:	0.05 mm, hexagonal to rounded shape, mainly included in plagioclase.
Others	:	Opaque minerals, apatite, epidote, sphene and calcite.



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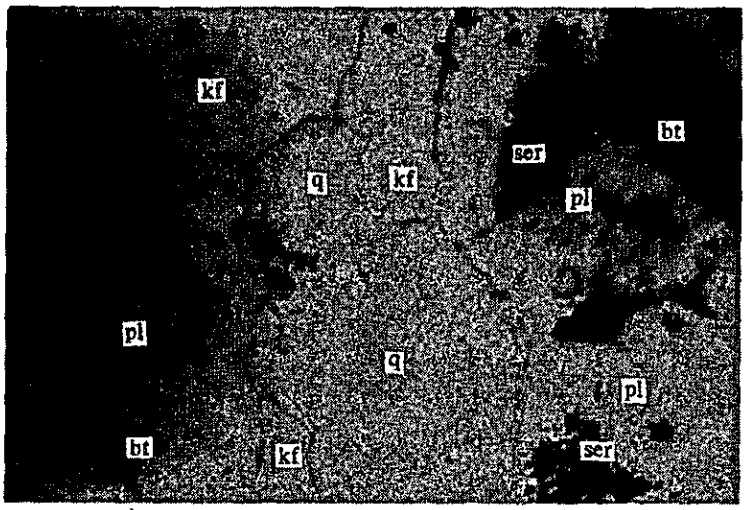
Crossed polars

0 ——— 1 mm

Sample No. : B–071
Rock name : Biotite gneiss, Sadh Gneiss.
Location : 3 km east of Mirbat.
Observation : The rock is composed of quartz, plagioclase, biotite, K-feldspar, garnet and others showing gneissose texture.

Quartz	:	Maximum 1.5 mm, anhedral.
Plagioclase	:	0.2 to 3.0 mm, anhedral to subhedral, partly altered to sericite.
Biotite	:	Maximum 3.0 mm in length, euhedral to subhedral, rarely altered to chlorite in part.
K-feldspar	:	0.2 to 0.7 mm, anhedral.
Garnet	:	0.1 to 0.2 mm, euhedral to subhedral.
Others	:	Sphene, epidote, apatite and opaque minerals.



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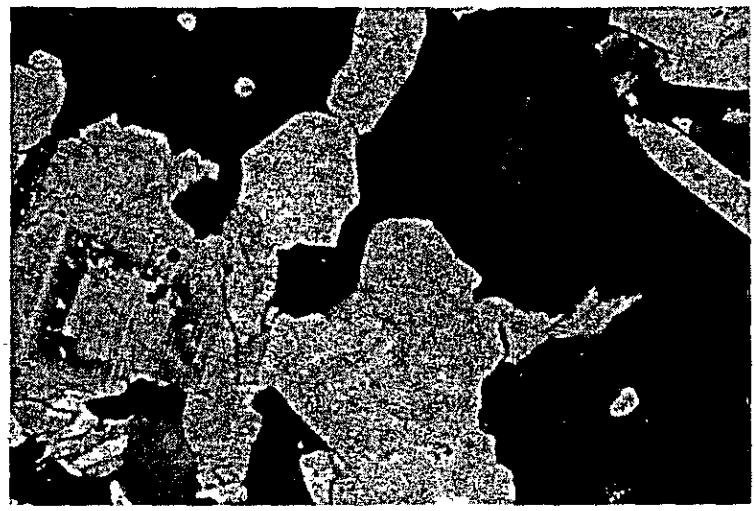
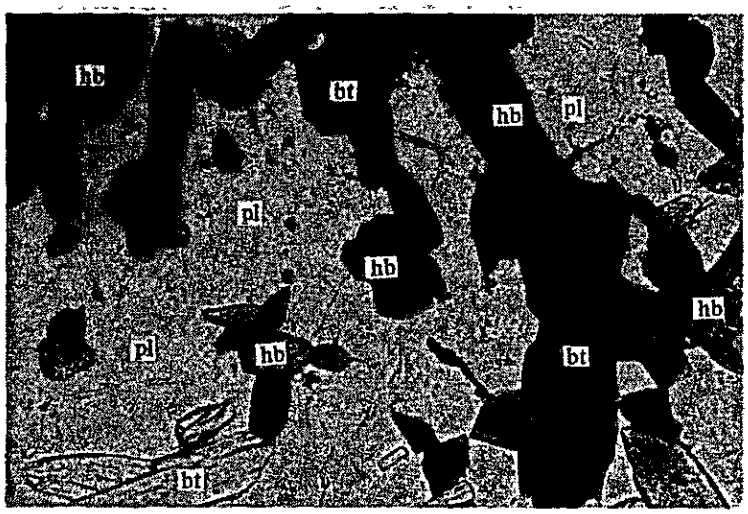


Crossed polars

0 1 mm

Sample No.	:	B–095
Rock name	:	Granodiorite
Location	:	2 km west of Hadabin
Observation	:	The rock is holocrystalline, equigranular and composed of quartz, plagioclase, K-feldspar, biotite and others.
	Quartz	: 0.15 to 2.0 mm, anhedral.
	Plagioclase	: 0.3 to 2.5 mm, euhedral to subhedral, showing zonal structure, partly altered to sericite and epidote.
	K-feldspar	: 0.4 to 1.5 mm, microcline structure.
	Biotite	: 0.2 to 0.8 mm in length, partly altered to chlorite and epidote.
	Others	: Muscovite, garnet, sphene and opaque minerals.



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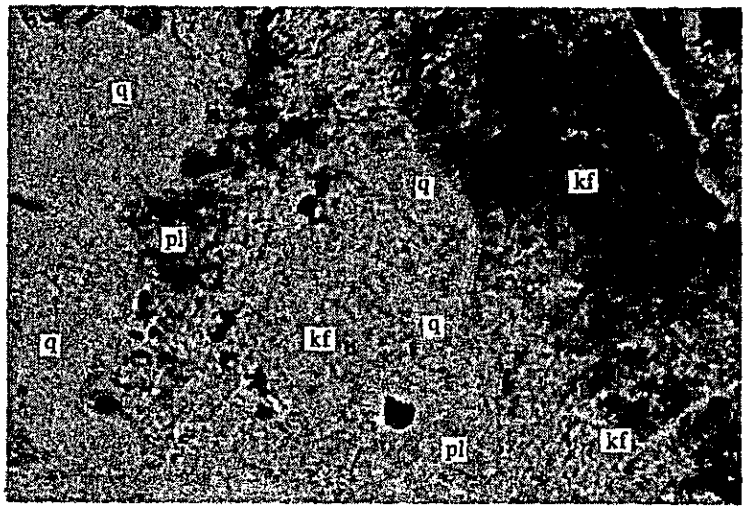
Crossed polars

0 0.5 mm

Sample No. : C-129
Rock name : Quartz diorite
Location : Wadi Fushi
Observation : The rock is holocrystalline, equigranular and composed of plagioclase, quartz, biotite, hornblende and others.

Plagioclase	:	0.15 to 0.7 mm, euhedral to subhedral, displaying zonal structure, partly altered to sericite.
Quartz	:	0.1 to 0.4 mm, anhedral.
Biotite	:	0.1 to 0.8 mm, euhedral to subhedral.
Hornblende	:	0.05 to 0.8 mm, euhedral to subhedral, yellowish green to bluish green.
Others	:	Garnet, sphene, epidote and opaque minerals.



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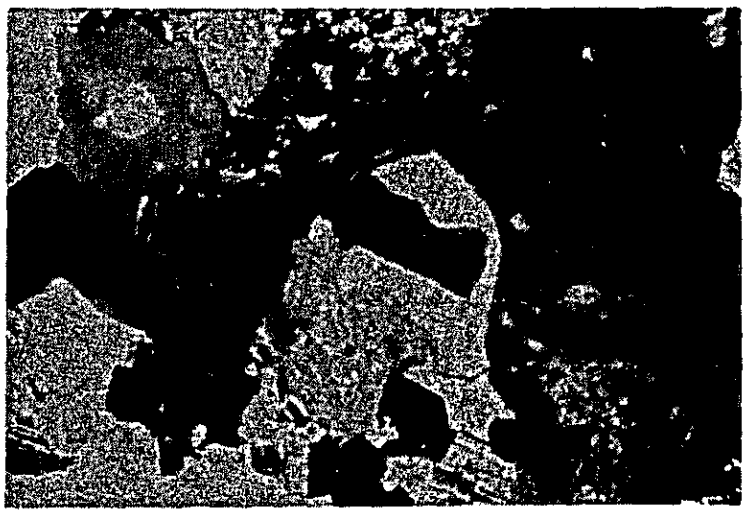
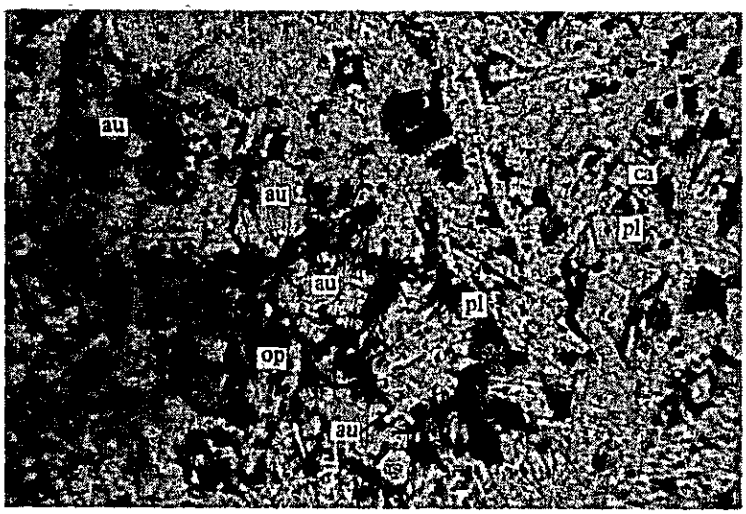


Crossed polars

0 1 mm

Sample No. : B–028
Rock name : Quartz monzonite
Location : Wadi Arzaq
Observation : The rock is holocrystalline, equigranular and composed of quartz, K-feldspar, plagioclase, muscovite, biotite and secondary minerals.

Quartz	:	0.2 to 1.7 mm, subhedral to anhedral.
K-feldspar	:	Maximum 4.0 mm, subhedral to anhedral, showing perthetic structure, partly altered to Sericite.
Plagioclase	:	0.3 to 2.5 mm, euhedral to subhedral, showing zonal structure, altered to sericite in a vermicular form.
Muscovite	:	0.1 to 0.4 mm, euhedral to subhedral.
Biotite	:	0.15 to 0.25 mm, completely altered to chlorite, epidote and opaque minerals.



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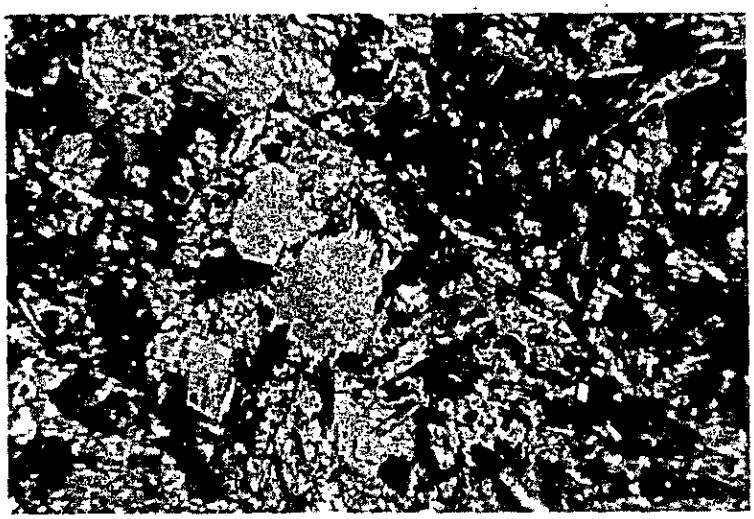
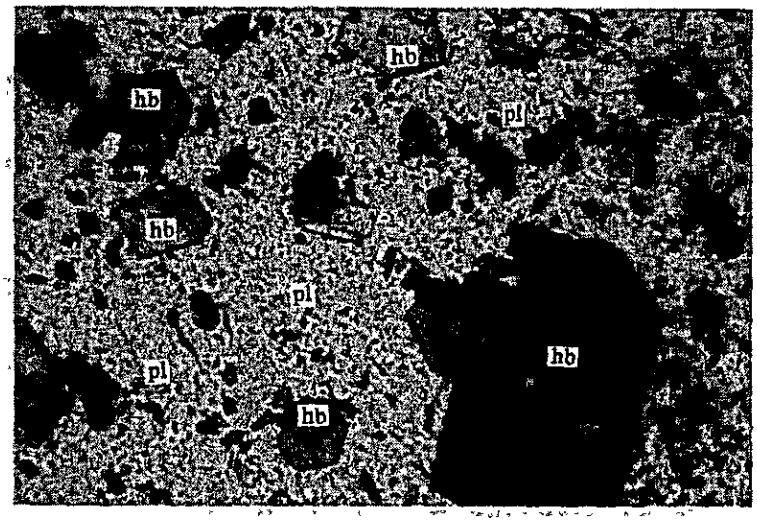


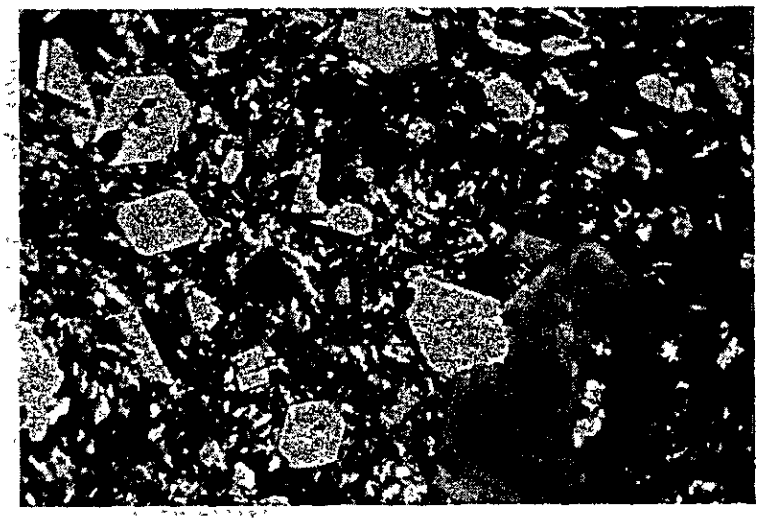
Crossed polars

0 1 mm

Sample No. : D–071
Rock name : Dolerite
Location : Wadi Khorhant
Observation : The rock is holocrystalline, porphyritic and composed of augite, plagioclase and others showing ophitic texture.
Augite : 0.1 to 0.75 mm, euhedral to subhedral.
Plagioclase : 0.2 to 0.6 mm, euhedral to subhedral, strongly altered to sericite, calcite and chlorite.
Others : Sphene and opaque minerals.



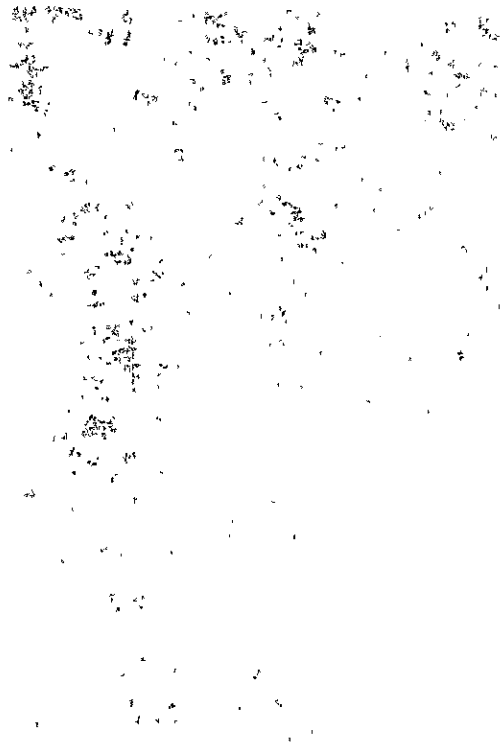
Only lower polar

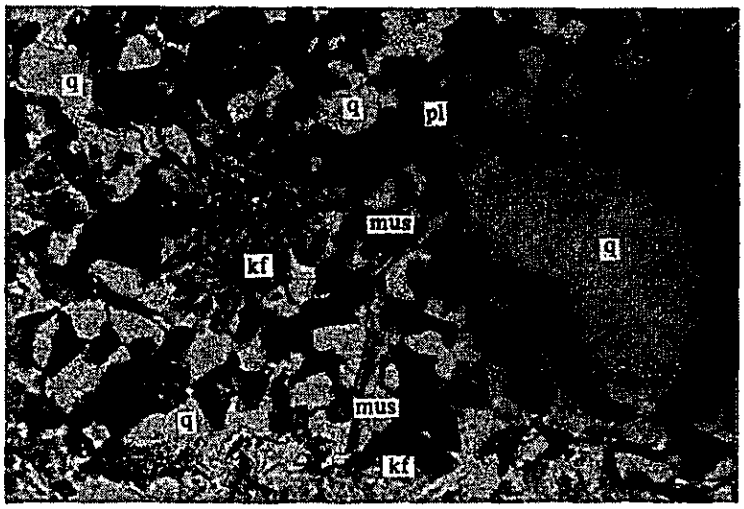


Crossed polars

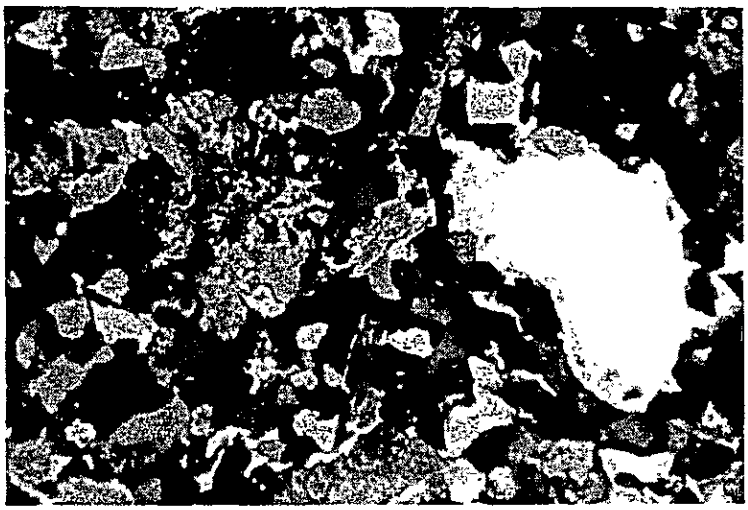
0 1 mm

Sample No. : B–105
Rock name : Andesite
Location : Wadi Marir
Observation : The rock shows pilotaxitic texture. Phenocryst is composed of hornblende (0.1 to 0.25 mm), plagioclase (0.1 to 3.3 mm) and opaque minerals (0.05 to 0.2 mm). Groundmass consists of lathlike plagioclase, needle-like hornblende and opaque minerals. Hornblende is partly altered to chlorite.





Only lower polar



Crossed polars

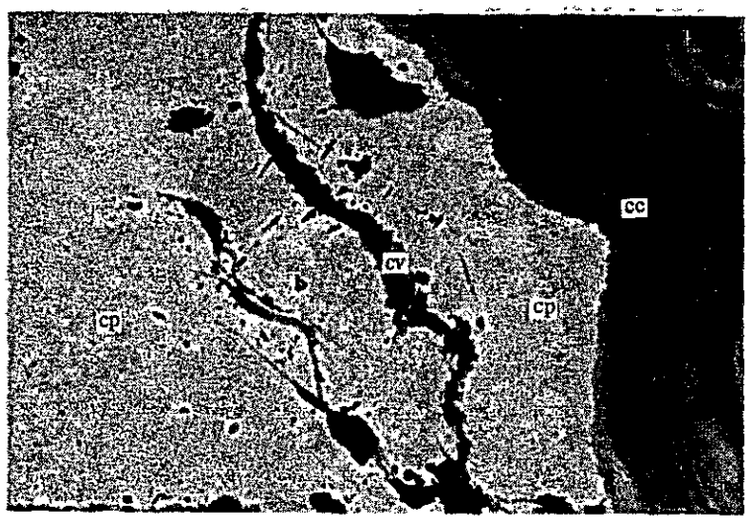
0 0.5 mm

Sample No. : A–020
Rock name : Quartz porphyry
Location : Wadi Khorhant
Observation : The rock is holocrystalline, porphyritic and partly shows micrographic texture. Phenocryst is composed of quartz (0.2 to 1.6 mm), K-feldspar (0.2 to 1.0 mm), plagioclase (0.2 to 0.8 mm) and muscovite (0.1 to 0.3 mm). Groundmass consists of quartz, K-feldspar, muscovite and plagioclase. Sericitization is observed.

Fig. A–2 Microphotography of Polished Section

Abbreviations

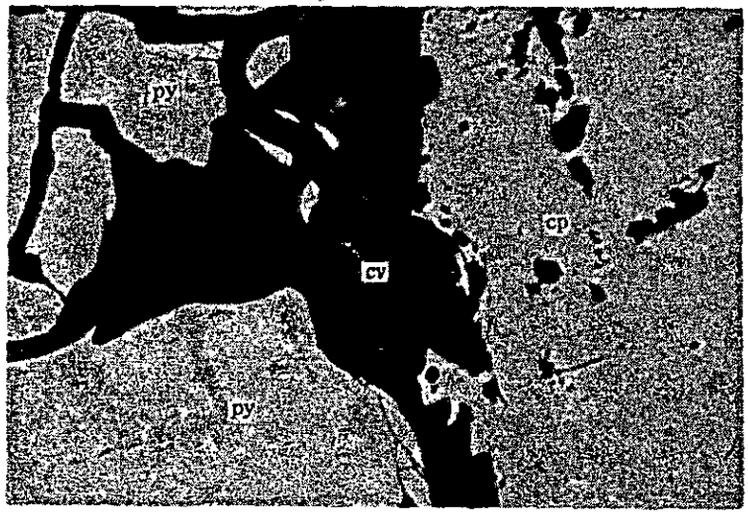
il : ilmenite
hem : hematite
cp : chalcopyrite
py : pyrite
cv : covelline
cc : chalcocite
gal : galena



Reflected light
Only lower polar

0 0.5 mm

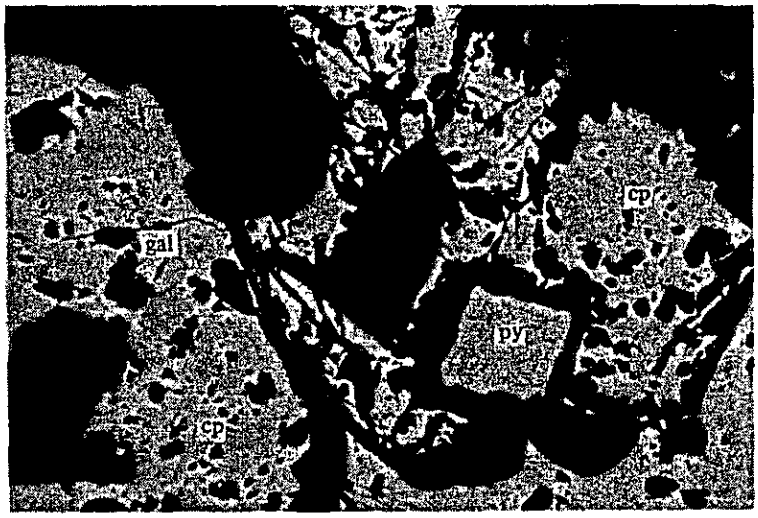
Sample No. : B–116
Rock name : Copper ore.
Location : Wadi Shiliyarn.
Observation : Spots of chalcopyrite with covelline and chalcocite as secondary oxidized minerals.



Reflected light
Only lower polar

0 0.5 nn

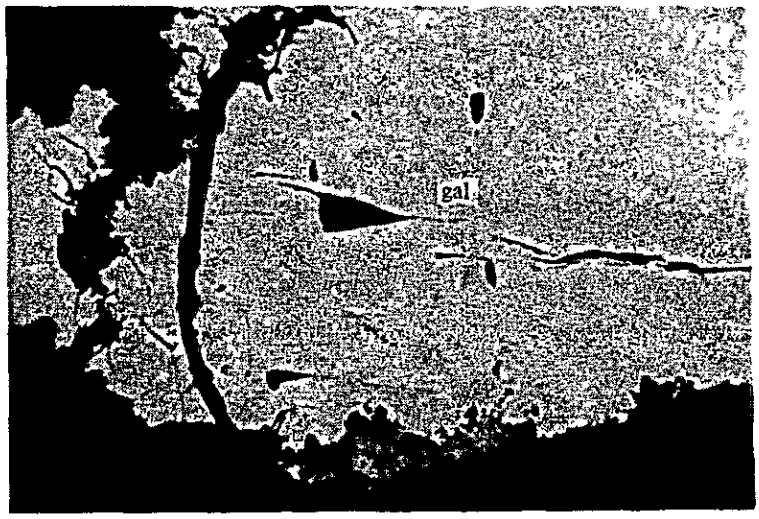
Sample No. : B–120
Rock name : Copper ore.
Location : Wadi Shiliyarn.
Observation : Spots of chalcopyrite and pyrite with covelline as secondary oxidized mineals.



0 0.5 mm

Refrected light
Only lower polar

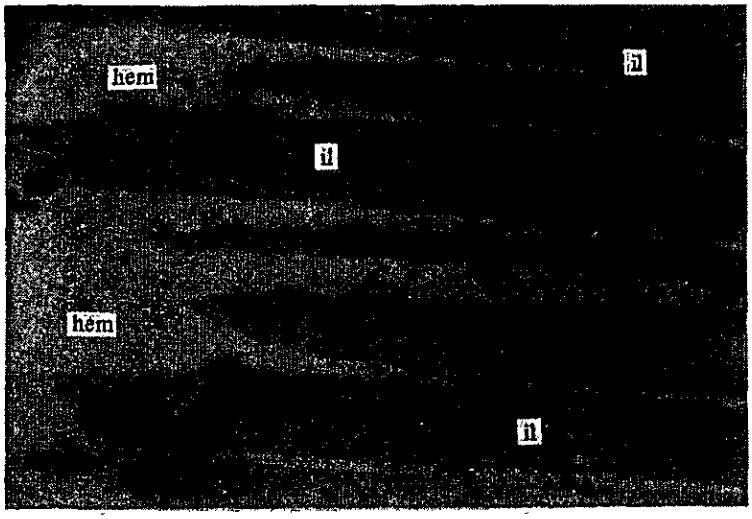
Sample No. : B–019
Rock name : Copper ore.
Location : Wadi Shiliyarn.
Observation : Spots of chalcopyrite containing small crystals of pyrite and galena.



0 0.5 mm

Refrected light
Only lower polar

Sample No. : C–112
Rock name : Lead ore
Location : Wadi Autant
Observation : Small spots of galena in barite.



0 0.5 mm

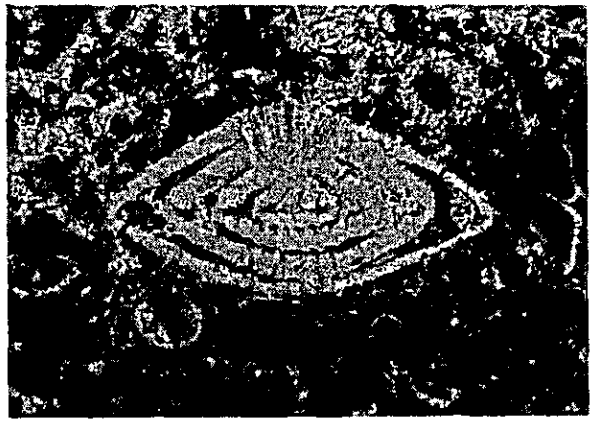
Refrected light
Only lower polar

Sample No. : A–017
Rock name : Titanium ore
Location : 6 km NW of Juffa
Observation : Ilmenite and hematite show exsolution lamellae.

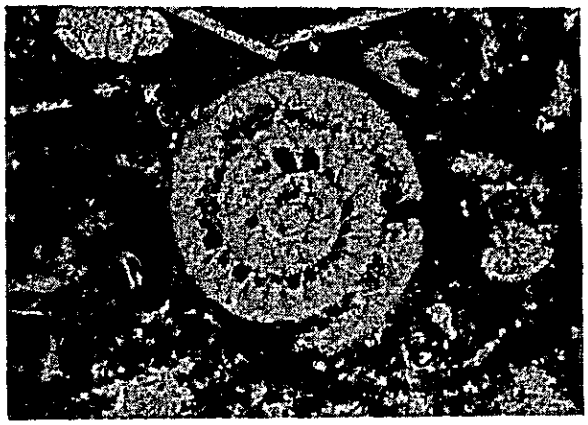
Fig. A–3 Microphotograph of Foraminifera

Nummulites globlus Leymerie, 1846 (x 25.5)

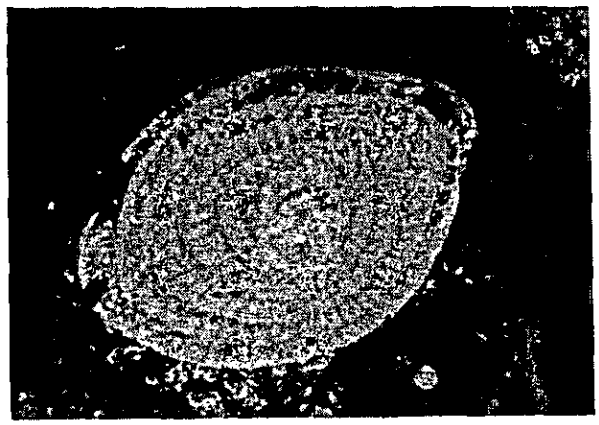
megalospheric form
(axial section)



megalospheric form
(oblique section)



megalospheric form
(equatorial section)

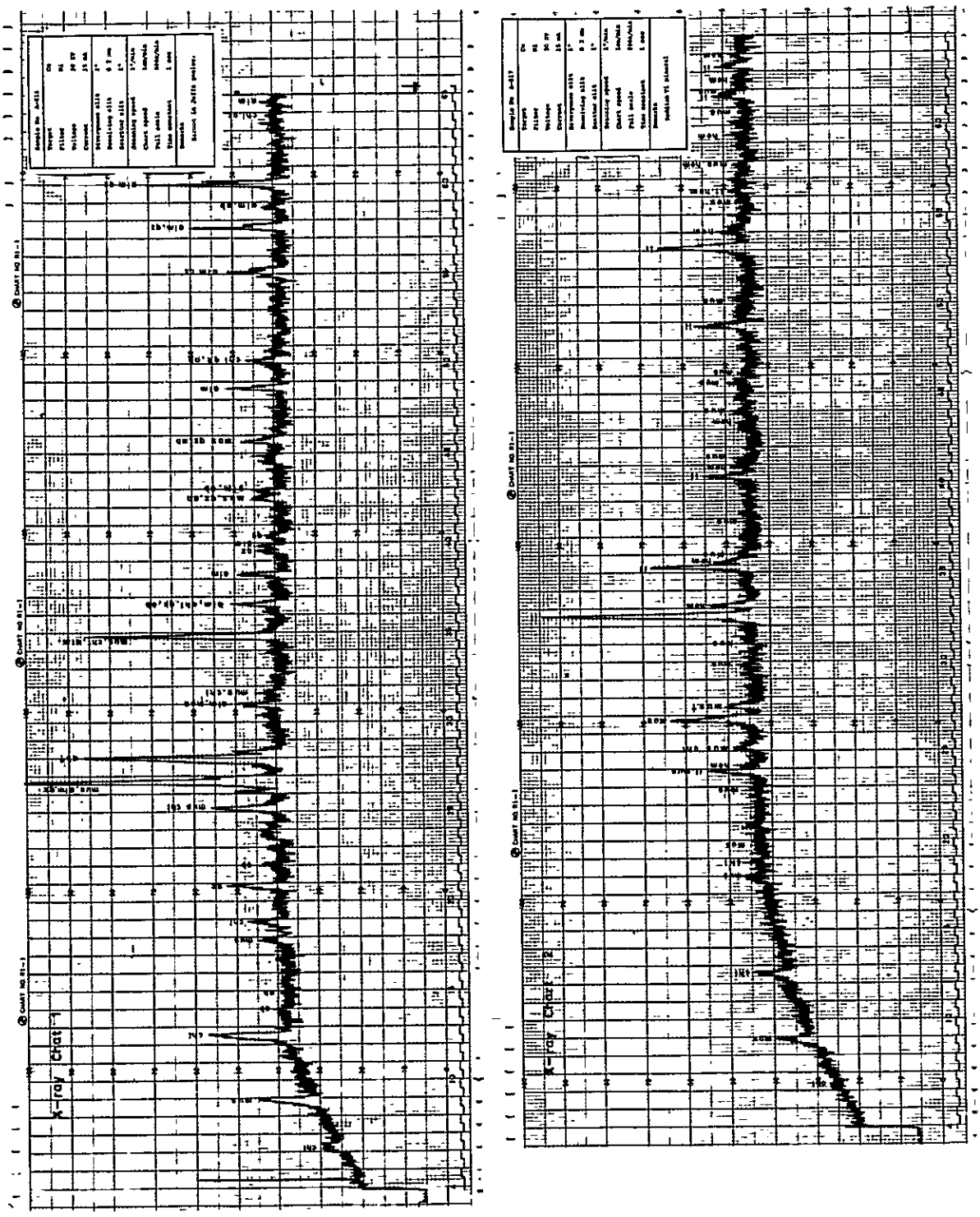


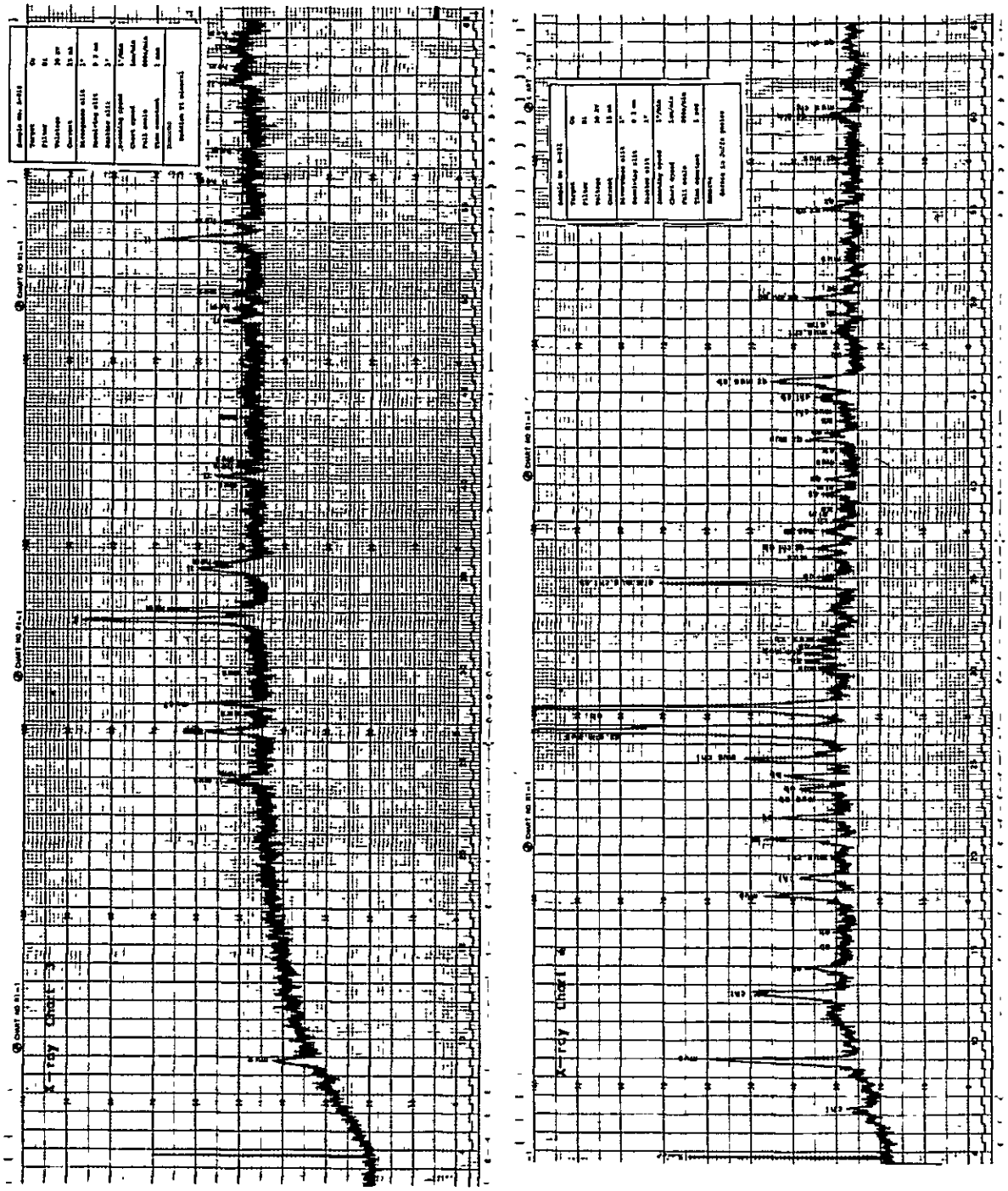
microspheric form
(oblique section)

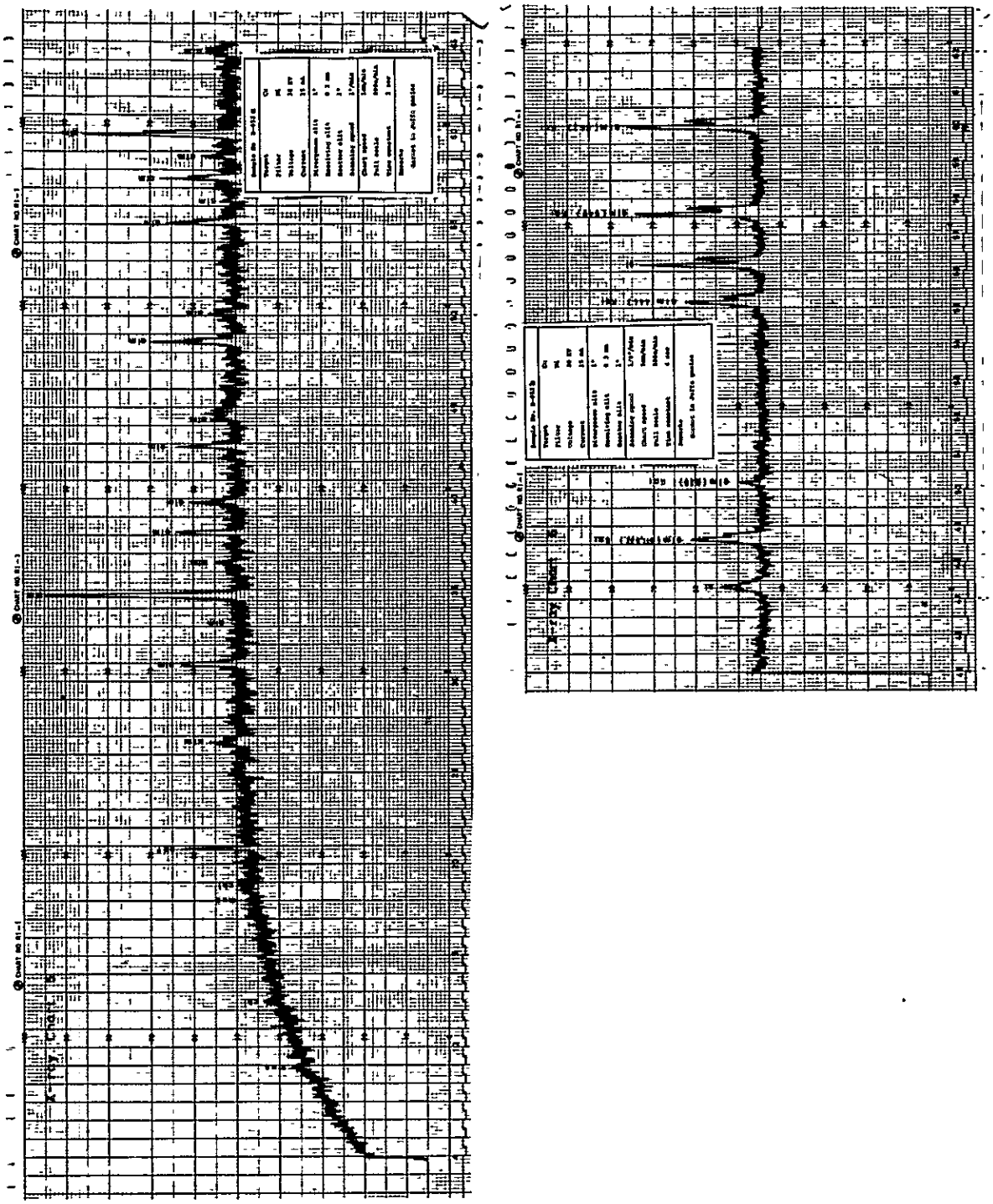
Fig. A–4 Chart of X-ray Diffractive Analysis

Abbreviation

qz : quartz
ab : albite
mus : muscovite
chl : chlorite
cal : calcite
dol : dolomite
alm : almandine
il : ilmenite
hem : hematite


X-ray Chart
X-ray Chart





X-ray Chart 8

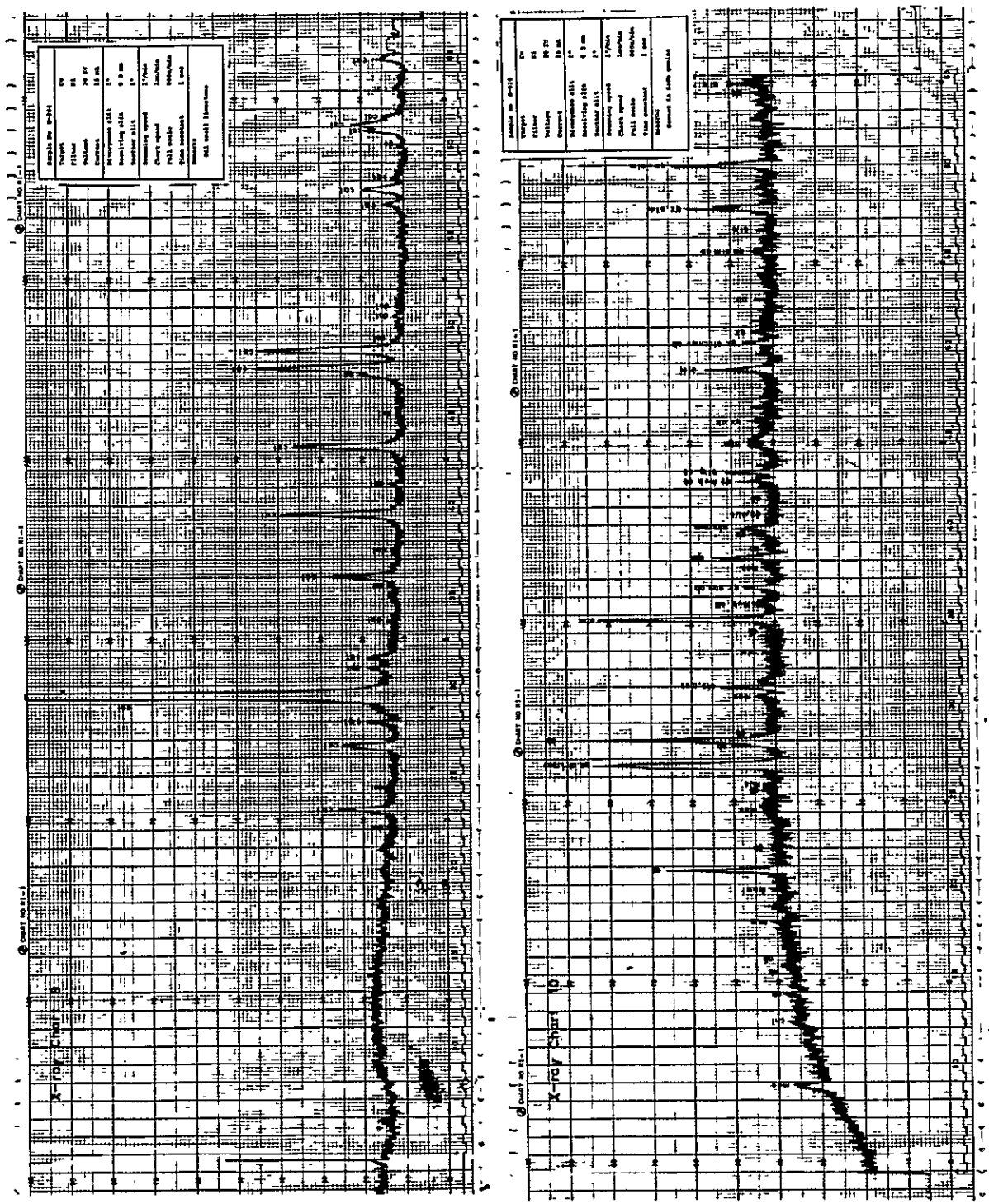


Table A–1 Microscopic Observation of thin section

Abbreviation

q	:	quartz
pl	:	plagioclase
kf	:	potash feldspar
bt	:	biotite
mus	:	muscovite
hb	:	hornblende
au	:	augite
ga	:	garnet
op	:	opaque mineral
ap	:	apatite
sph	:	sphene
ser	:	sericite
chl	:	chlorite
ep	:	epidote
ca	:	calcite

Group		Sample No.	Rock name	q	pl	kf	bt	mus	hb	au	ga	op	ap	sph	ser	chl	ep	cs	Remarks
Jutta Gneiss	Mica gneiss	A-001	mus bt gneiss		○	•		○			•	•	•	•	•	•		•	gneissose texture
		A-012	bt mus gneiss		•		◎	◎			•	•		•	•	•	•		ditto
		A-016	bt mus gneiss		◎	○	◎	◎			○		•	•	•	•			ditto , most of bt is altered to chl
		B-043	mus bt gneiss		○			○			•	•	•		•	•	•	•	ditto , bt is altered to chl and ser
		B-051	bt gneiss		○		◎	•			•	•	•			•	•		ditto , bt is altered to chl and ser
		C-001	bt mus gneiss		○		○					•		•	•	○	•		ditto
		C-010	bt mus gneiss		○		◎	◎			•	•			•		•		ditto
		C-037	mus bt gneiss		○			○				•		•	•	•	•	•	ditto
		C-041	mus gneiss	•	•	•	•	○			•	•	•	•	○	•	•	•	ditto , bt is altered to chl
		D-034	mus bt gneiss		○			○			•	•	•		•		•		ditto , most of bt is altered to chl
		D-035	mus bt gneiss	○	○	○	○	○			•	•	•		•	•	•		ditto , myrmekite texture
	Basic gneiss	B-036	ep hb gneiss	○	○				◎		•			○	•		○		ditto
		B-046	ep hb gneiss	○	○						•	○		•	•	•	•	•	ditto
		C-002	ep hb gneiss	•	◎				◎		•	○		○	•		○		ditto
		C-023	ep hb gneiss	○	•			•			•	•		○	•		◎	•	ditto
		D-069	amphibolite						◎			○		•				•	
		D-072	ep hb gneiss	•	○			•			•	•		○	•		○		gneissose texture
Sadh Gneiss	Acidic gneiss	A-008	bt gneiss		○	○	○	•			•	•	•	•	•	•	•		ditto
		A-009	mus bt gneiss		◎	○	○	○			•	•		•	•	•	•		ditto
		B-001	mus bt gneiss	•	◎	○	•	•				○		•	•	•	•		ditto
		B-071	bt gneiss	◎	◎	•	○				•	•	•	•	•	•	•		ditto , myrmekite texture
		B-114	bt gneiss	◎	◎	•	◎	•			•	•		•	•	•	○		ditto
		D-057	bt gneiss	◎	◎	◎	•				•	•	•	•	•	•	•		ditto , equigranular
		D-063	bt gneiss		◎	○	○				•	•	•		•	•	•		ditto , bt is altered to chl
	Intermediate gneiss	B-062	hb bt gneiss	◎	◎			•			•	•		•	•		•	•	ditto
		B-068	bt hb gneiss	◎	○	○	•	•	○		•	•	•	•	•	○	•	•	ditto , bt is altered to chl
		B-103	hb bt gneiss	○	◎		○		○		•	•		•	•	•	•		ditto , equigranular
		C-05₂	hb bt gneiss	○	◎		○		○		•	•	•	•	•		•	•	ditto
	Basic gneiss	A-021	bt hb gneiss		◎		○		◎		•	○	•		•	•	•		ditto
		B-053	hb gneiss	○	(○)						•	•	•	•	○	•	•		ditto
		B-060	ep hb gneiss	•	•			•						•	•	•	○		ditto
		B-108	bt hb gneiss								•	•	•		•	•	•		ditto
		B-111	bt hb gneiss				◎				•	•			○	•	•		ditto , bt is altered to chl, pl is altered to ser
		C-045	ep hb gneiss								•	•	•	○	•	•	○	•	ditto
		D-058	ep amphibolite	•	○						•	•		○	•				poikiloblastic texture
		D-062	ep amphibolite	○							•	•		•	•	○		•	poikiloblastic texture
		D-065	ep amphibolite					○					•		•	•			
Intrusive rocks	Hadabin body	B-090	q diorite				•		○		•	•	•	•	•	•			equigranular , pl is altered to ser, epidotized
		B-095	granodiorite				○	•			•	•	•	•	•	•	•		ditto , myrmekite texture
		B-113	granodiorite	◎		○	○	•			•	•	•	•	•	•	•		ditto , coarse grained
		B-118	granodiorite porphyry					•				•	•	•	•	•	•		porphyritic texture
		C-118	granodiorite			○	○	•			•	•	•	•	•	•	•		equigranular
		C-129	q diorite	◎							•	•	•	•	•	•	•		ditto , fine grained
		C-131	granodiorite			•	◎	•			•	•	•	•	•	•	•	•	ditto
		C-204	granodiorite	◎			○	•			•	•	•		•	•	•		ditto , myrmekite texture
	Mirbat stock	B-077	granodiorite	◎			○	○			•		•		•		•	•	ditto , myrmekite texture, ca veinlets
		D-025	q monzonite			◎		•					•		•		•	•	ditto , ca veinlets
	Arzat stock	D-026	granodiorite				○	○			•		•	•	•		•	•	ditto , myrmekite texture, coarse grained
		B-028	q monzonite				(•)	•					•		•	•	•		ditto , kf shows perthite structure
	Acidic dyke	A-004	q porphyry											•			•	•	porphyritic texture, micrographic texture, chloritized
		A-010	rhyolite												○		•	•	microcryptocrystalline, spherulitic texture, sericitized
		A-014	rhyolite	○			○					•	•		○			○	spherulitic texture, sericitized and carbonatized
		A-020	q porphyry				•					•			•	•		•	porphyritic texture, micrographic texture
		B-015	q porphyry									•			○		•	•	ditto ditto , sericitized
		B-016	q porphyry									•					•		ditto , strongly sericitized
		B-102	rhyolite			○	•				•	•	•		•	•	•	•	spherulitic texture chloritized
		D-051	q porphyry	•			◎					•	•		•	○	•	•	porphyritic texture, micrographic texture, chloritized
		D-073	q porphyry	○		○		•				•					•	•	porphyritic texture, micrographic texture
	Basic dyke	A-005	q dolerite	•	◎		•			◎		○			•	•	•	•	subophitic texture, chloritized
		A-013	diorite porphyry	•	◎		○					•	○			•	•	•	porphyritic texture, strongly chloritized and carbonatized
		B-105	andesite									•			•	•	•	•	pilotaxitic texture
		B-115	diorite porphyry	•			◎					•			•				porphyritic texture, ca veinlets
		D-071	dolerite									•		•	○	•	•	•	ophitic texture
	Others	C-047	aplite				•	•				•	•		•	•	•	•	equigranular, ca veinlets
		D-045	pegmatite			○	○	•				•	•		•	•	•	•	ditto , very coarse grained

◎ abundant ○ : common • rare ( ) : pseudomorph

Table A–2 Micoscopic Observation of Polished Section

Sample No.	Location	Ore minerals							Remarks
		Il	Hem	Cp	Py	Cv	Cc	Gal	
A–017	Main road (near Juffa)	◎	○						showing exsolution lamellae
B–019	Wadi Shiliyarn			◎	•	•		•	Py and Gal are enclosed in Cp
B–116	Wadi Shiliyarn			◎		◎	○		strongly oxidized
B–120	Wadi Shiliyarn			◎	◎	○			strongly oxidized
C–112	Wadi Autant							◎	small spots in Barite vein
D–033	Wadi Bayt Said				◎				limonitized

Abbreviation Il : Ilmenite, Hem : Hematite, Cp : Chalcopyrite, Py : Pyrite, Cv : Covelline, Cc : Chalcocite, Gal : Galena

◎ : abundant, ○ : common, • : rare

Table A–3 List of Foraminifera

Foraminifera		Formation	Umm er Radhuma F.	Mirbat Sandstone Formation										
		Sample No.	D–101	C–016	C–118	C–119	D–004	D–008	D–011	D–013	D–021	D–028	D–054	D–100
		Location	Jabal Nuss	Wadi Ain	Wadi Hinum	Wadi Hinum	Wadi Ercahol	Wadi Ercahol	Wadi Ercahol	Wadi Ercahol	Wadi Ercahol	Wadi Baqiat	Wadi Marsham	Wadi Hinun
Lager foraminifera	Nummulites globulus Leymerie, 1846		○											
Benthonic foraminifera	Alveolinidae		○											
	Cyclamininae		○											
	Soritinae		○											
Non foraminifera				○	○	○	○	○	○	○	○	○	○	○

Attachment 4 to Item 2 of Agenda

Table A–4 List of X-ray Diffractive Analysis

Sample No.	qz	ab	mus	chl	ser	alm	il	hem	cal	dol	Remarks
A–106	◎	◎	○	○		○					Garnet in Juffa Gneiss.
A–017			•	•			◎	○			Ti mineral in Juffa Gneiss
A–019			•				◎	○			Ti mineral in Sada Gneiss
B–021	◎	◎	○	•		•					Garnet in Juffa Gneiss
B–052 (a)			•	•		◎					Garnet in Juffa Gneiss
B–052 (b)						◎					Garnet in Juffa Gneiss
B–081	◎	○	○	○	• ?						Pale gray clay in Mirbat Sandstone Formation
C–138	○	◎	○			•					Garnet in pegmatite vein
D–004									◎	•	Stinkstone
D–020	○	○	•	•		◎					Garnet in Sadh Gneiss

Abbriviation

qz : quartz, ab : albite, mus : muscovite, chl : chlorite, ser : sericite alm : almandine, il : ilmenite, hem : hematite, cal : calcite, dol : dolomite

◎ : abundant ○ : common • : rare

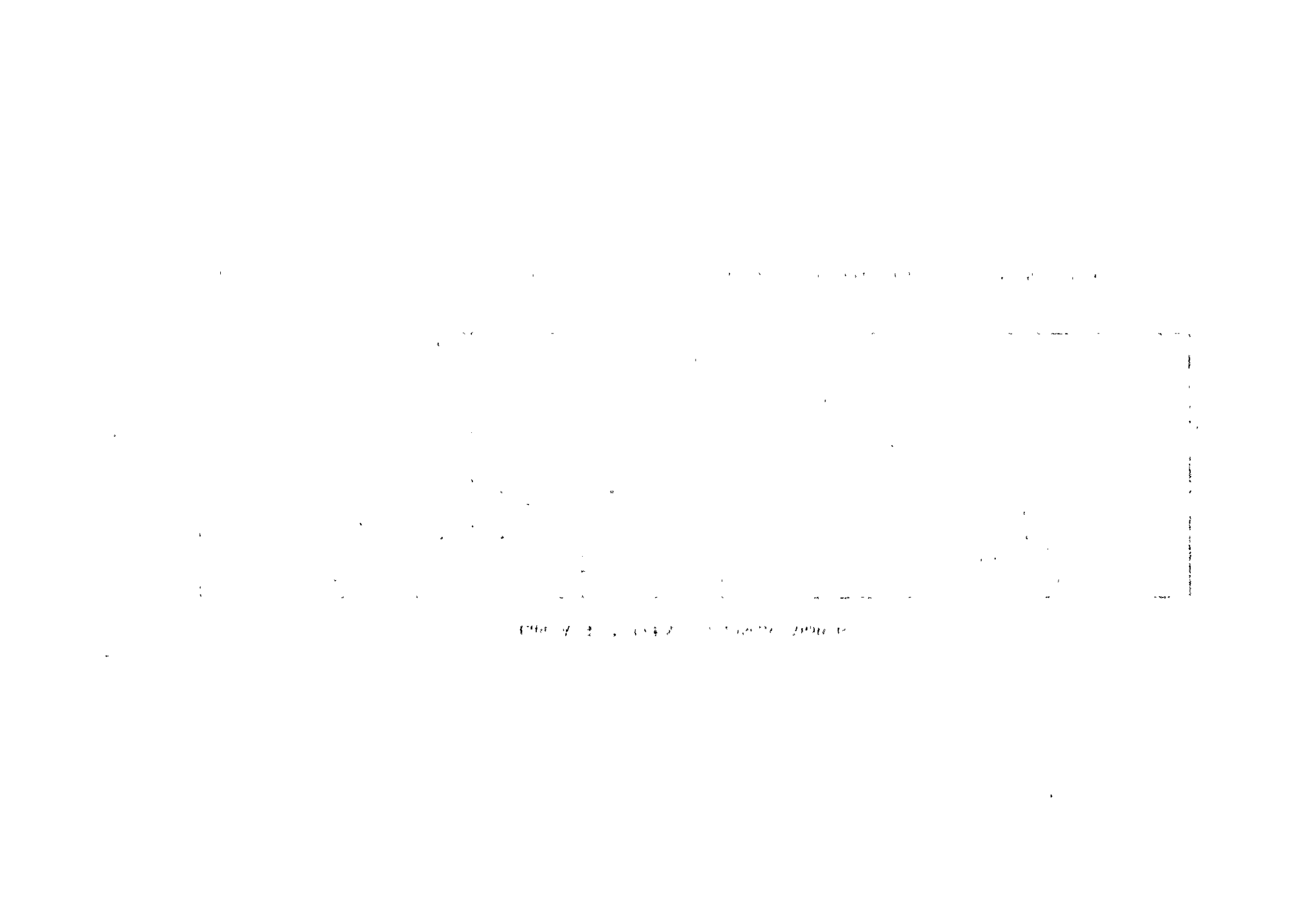


Table A - 5 Result of Radioactive Measurement (1)

	Upper member			Middle member							Lower member						Basement
	ss	siltstone	shale	cg	v.c. ss	c. ss	m-f. ss	siltstone	shale	ls	cg	v.c. ss	c. ss	m-f. ss	siltstone	shale	
1 — 1					8												
1 — 2						5											
1 — 3									10								
1 — 4									9								
1 — 5									10								
1 — 6						5			8								
1 — 7						5											
1 — 8			6														
1 — 9			6														
1 — 10			6														
1 — 11			8														
1 — 12			11														
1 — 13	7																
2 — 1										2							
2 — 2									9								
2 — 3									11								
2 — 4					7												
2 — 5						7											
2 — 6									14								
2 — 7							15										
2 — 8							10										
2 — 9						5											
2 — 10							9										
2 — 11									15								
2 — 12			11														
2 — 13							12		12								
2 — 14									12								
2 — 15									15								
2 — 16			15														
3 — 1						4							5				
3 — 2												5					
3 — 3													5				
3 — 4							9		15								
3 — 5							9		15								
3 — 6																12	
3 — 7									14								
3 — 8									12								
3 — 9							12		15								
3 — 10			15														
4 — 1																	3
4 — 2				4						3							
4 — 3																	4
4 — 4																	5
4 — 5																	3
4 — 6																	12
4 — 7																	7
4 — 8																	4
4 — 9																	6
4 — 10																	15
4 — 11																	10
4 — 12																	15

	Upper member			Middle member							Lower member						Basement
	ss	siltstone	shale	cg	v.c. ss	c. ss	m-f ss	siltstone	shale	ls	cg	v.c ss	c ss	m-f ss	siltstone	shale	
4 — 13																	26
4 — 14																	13
4 — 15																	14
4 — 16																	6
4 — 17												5					
4 — 18											5						
4 — 19											5						
4 — 20											5						
4 — 21												4					
4 — 22												6					
4 — 23											7						
4 — 24											7				11		
4 — 25											7						
4 — 26												8					
4 — 27										4							
4 — 28									9								
4 — 29							6										
4 — 30									8								
4 — 31							6										
4 — 32									10								
4 — 33									8								
4 — 34									9								
4 — 35	5																
4 — 36			10														
4 — 37			7														
5 — 1																	4
5 — 2																	4
5 — 3																	4
5 — 4																	3
5 — 5																	6
5 — 6																	5
5 — 7																	2
5 — 8																	5
5 — 9																	4
5 — 10																	4
5 — 11																	4
5 — 12											8						
5 — 13																	5
5 — 14											7						
5 — 15											8						
5 — 16									8								
5 — 17					5												
5 — 18					8				11								
5 — 19							7										
5 — 20									10								
5 — 21									9								
5 — 22			6														
5 — 23			9														
5 — 24			9														
6 — 1											7						
6 — 2											7						

Result of Radioactive Measurement (2)

	Upper member			Middle member							Lower member						Basement
	ss	siltstone	shale	cg	v.c. ss	c. ss	m-f ss	siltstone	shale	ls	cg	v.c ss	c ss	m-f ss	siltstone	shale	
6 — 3														10			
6 — 4											7						
6 — 5							10										
6 — 6								10									
6 — 7							10										
6 — 8			9														
6 — 9			11														
6 — 10			12														
7 — 1											8						
7 — 2																10	
7 — 3											8						
7 — 4									13								
7 — 5						10			12								
7 — 6			12														
8 — 1																	4
8 — 2											6						
8 — 3														10			
8 — 4														11			
8 — 5														10			
8 — 6																	10
8 — 7											6						
8 — 8														8	11		
8 — 9											6						
8 — 10														8			
8 — 11											5						
9 — 1																	10
9 — 2																	5
9 — 3											6						
9 — 4											6						
9 — 5											6						
9 — 6														7			
9 — 7														5			
9 — 8														12			
9 — 9											7						
9 — 10											8						
9 — 11													11				
9 — 12											7						
9 — 13														8			
9 — 14											7						
9 — 15													8				
9 — 16											7						
9 — 17													9				
9 — 18											7						
9 — 19														8			
9 — 20											7						
9 — 21											7						
9 — 22														8			
9 — 23											11						
9 — 24													7				
9 — 25											9						
9 — 26											13						

	Upper member			Middle member							Lower member						Basement
	ss	siltstone	shale	cg	v.c ss	c ss	m-f ss	siltstone	shale	ls	cg	v.c. ss	c. ss	m-f. ss	siltstone	shale	
9 — 27											10						
9 — 28											10						
9 — 29								12									
9 — 30								16									
9 — 31						7											
9 — 32						9	9										
9 — 33								13									
9 — 34							11	11									
9 — 35							11	11									
9 — 36			11														
10 — 1																	8
10 — 2																	10
10 — 3											7						
10 — 4			11