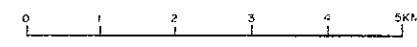


Pm-1-R	ST-1-D	ST-7-R	ST-11-O-2
Pm-1-O-1	ST-1-R	ST-7-T	ST-11-P
	ST-1-T	ST-8-R	ST-12-O-1
	ST-2-O	ST-8-T	ST-12-O-2
	ST-3-O-1	ST-9-R	ST-12-P
	ST-3-O-2	ST-9-T	ST-13-D
	ST-4-O	ST-9-O	ST-13-P
	ST-5-O	ST-9-P	ST-14-R
	ST-6-O	ST-10-O	ST-14-T
	ST-6-P	ST-10-P	ST-15-P

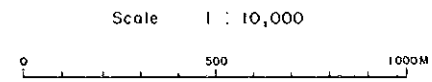
Fig. II-2-2
Location Map of Samples
in Labuk Region, Sabah

Scale 1 : 50,000

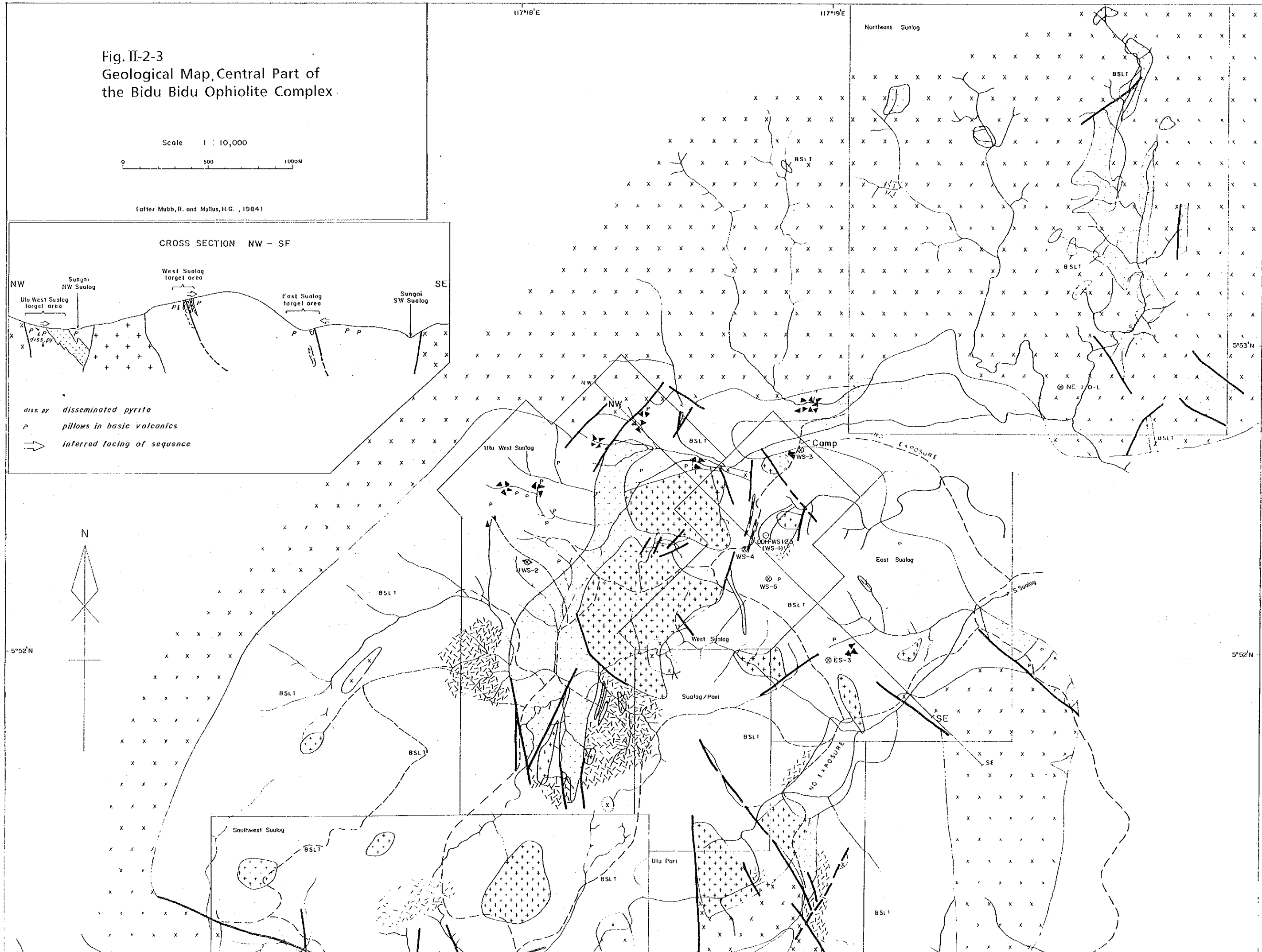
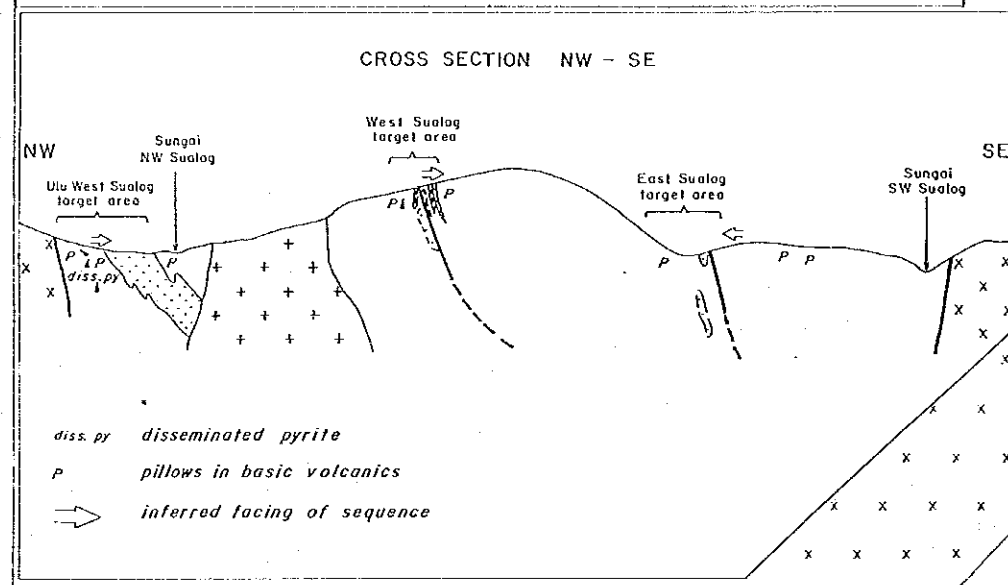


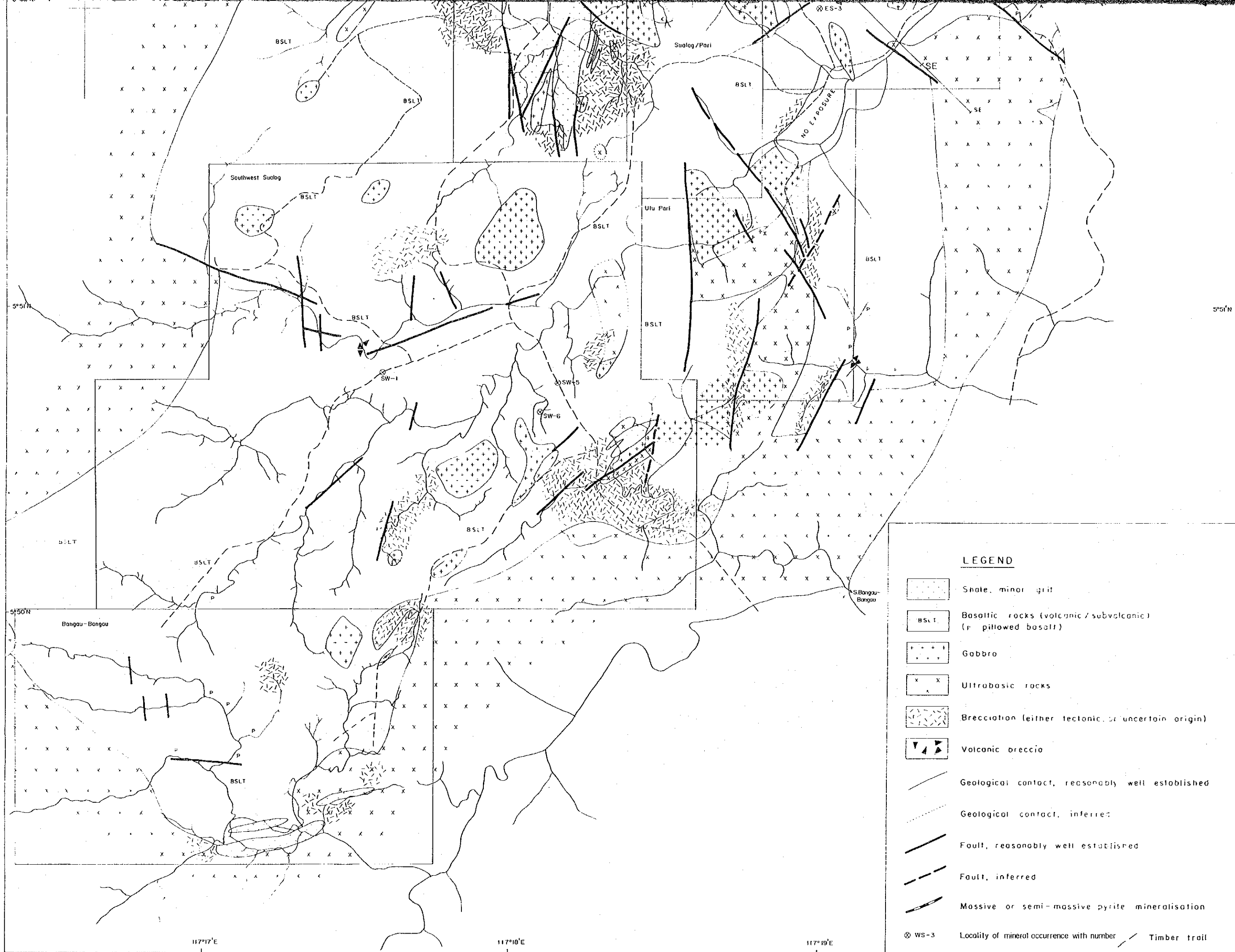
⊗ ST-1-D: Location of sample with number

Fig. II-2-3
 Geological Map, Central Part of
 the Bidu Bidu Ophiolite Complex



(after Mubb, R. and Mylius, H.G., 1984)





LEGEND

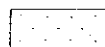
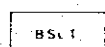
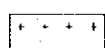
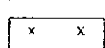
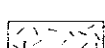
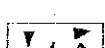

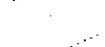




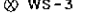
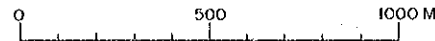
-  Slate, minor grit
-  Basaltic rocks (volcanic / subvolcanic)
(r. pillowed basalt)
-  Gabbro
-  Ultrabasic rocks
-  Brecciation (either tectonic or uncertain origin)
-  Volcanic breccia
-  Geological contact, reasonably well established
-  Geological contact, inferred
-  Fault, reasonably well established
-  Fault, inferred
-  Massive or semi-massive pyrite mineralisation
-  WS-3 Locality of mineral occurrence with number
-  Timber trail

Fig. II-2-4
Geological Map of the Telupid
Area, Labuk Region, Sabah

Scale 1 : 10,000



(after Johnston, J.C. and Walls, P.J., 1978)

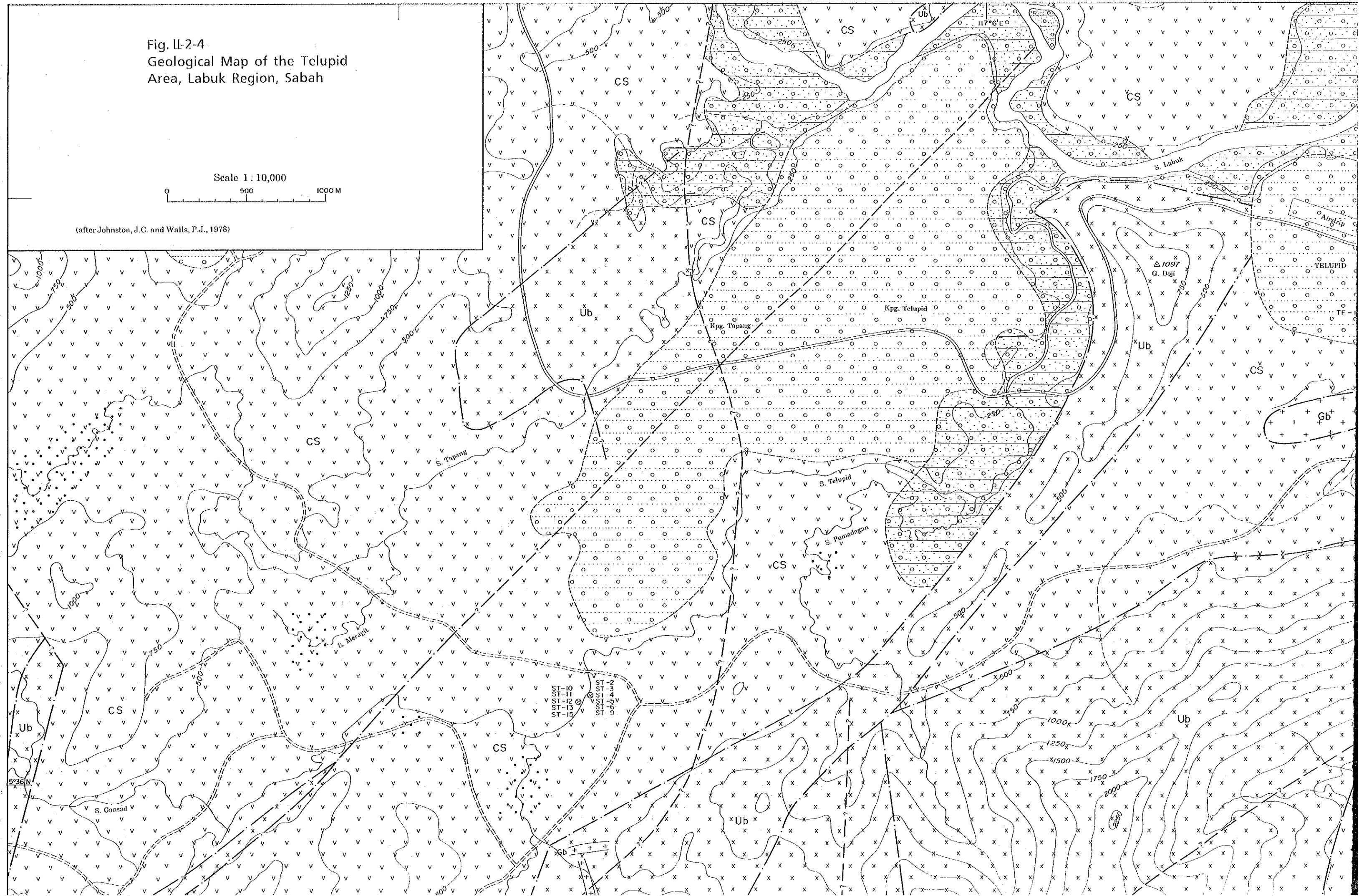
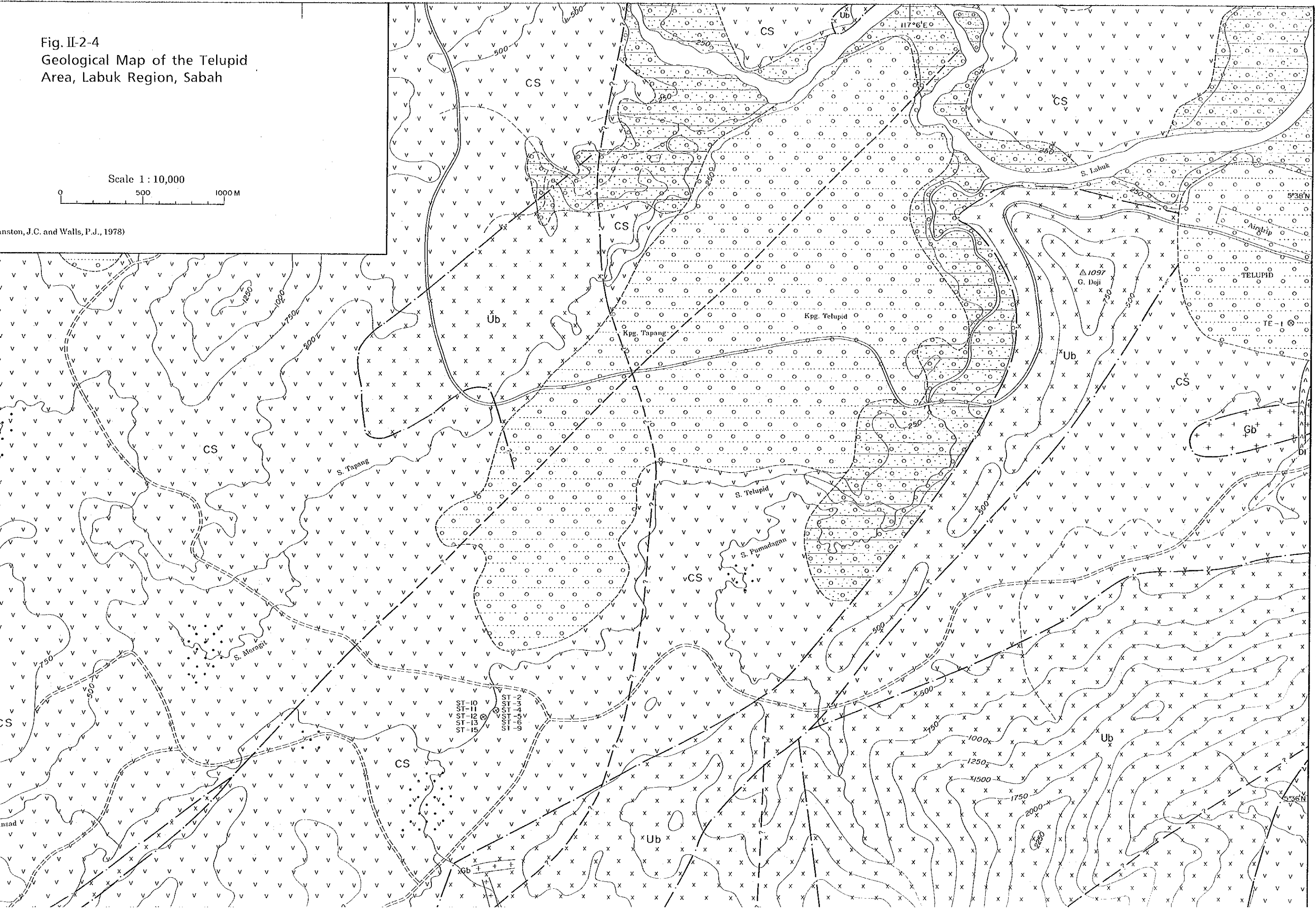
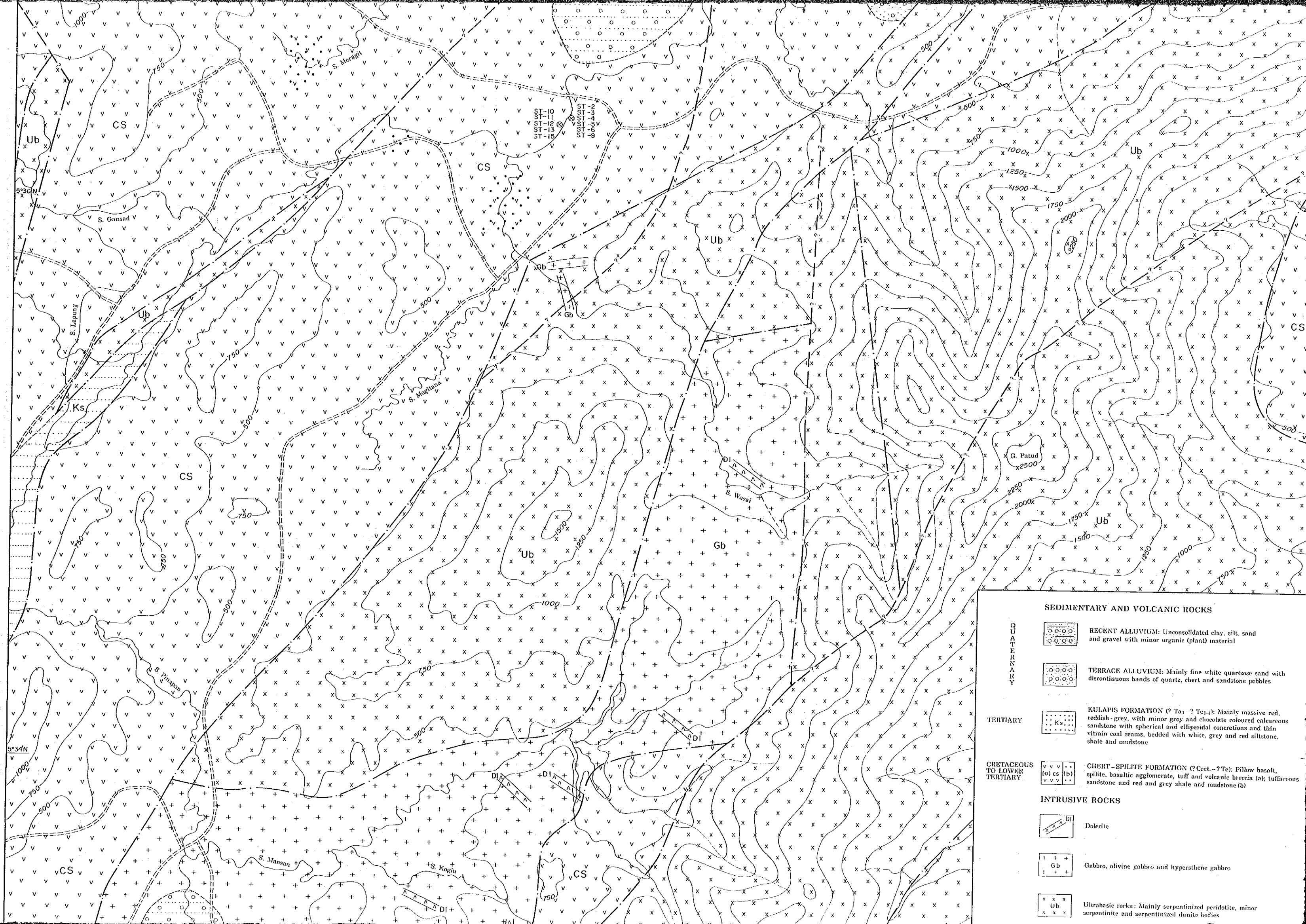


Fig. II-2-4
Geological Map of the Telupid
Area, Labuk Region, Sabah

Scale 1 : 10,000
0 500 1000 M

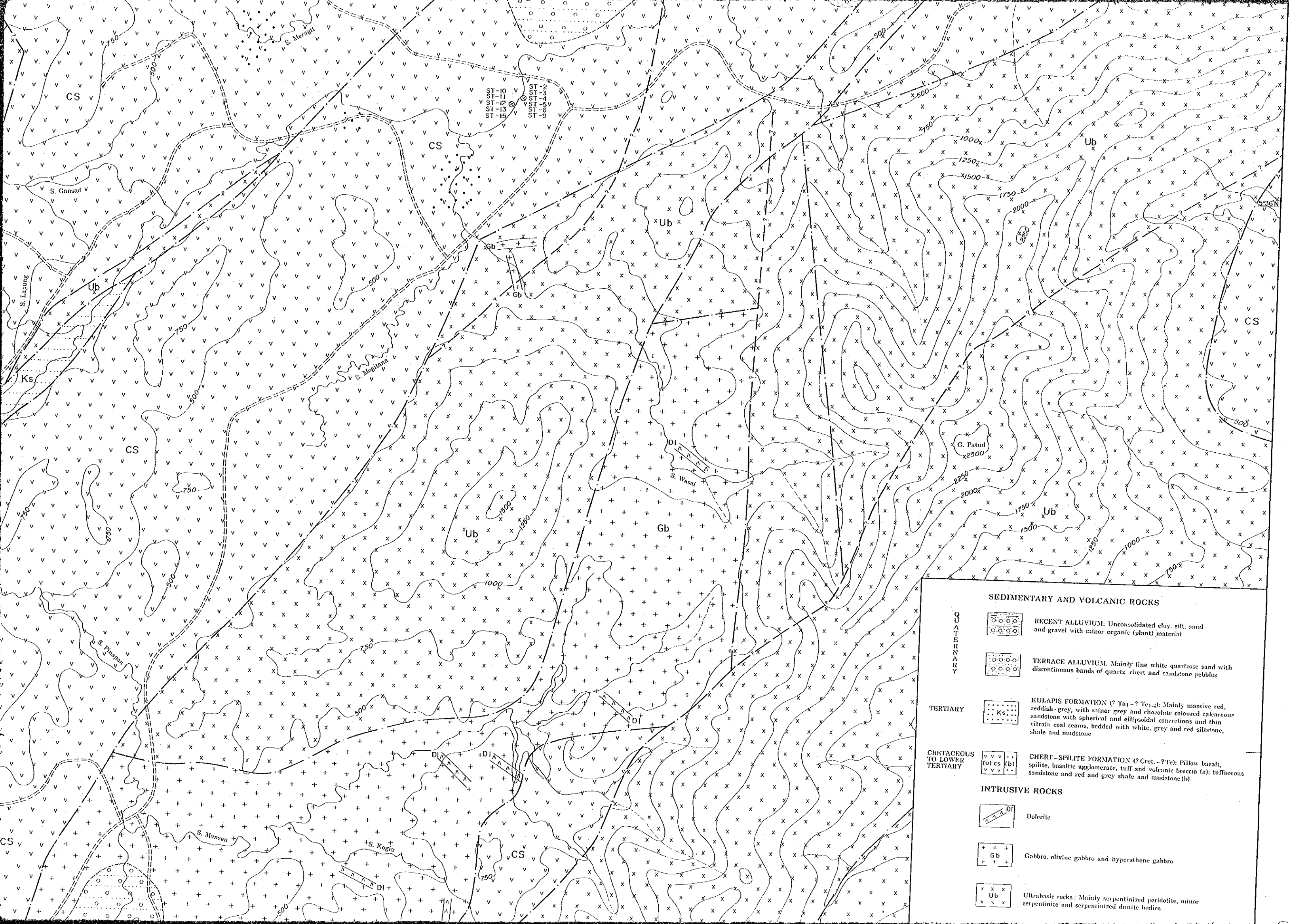
onston, J.C. and Walls, P.J., 1978)



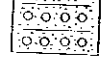
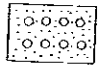
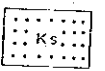
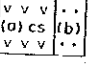
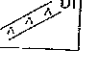
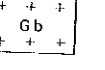
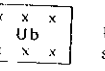


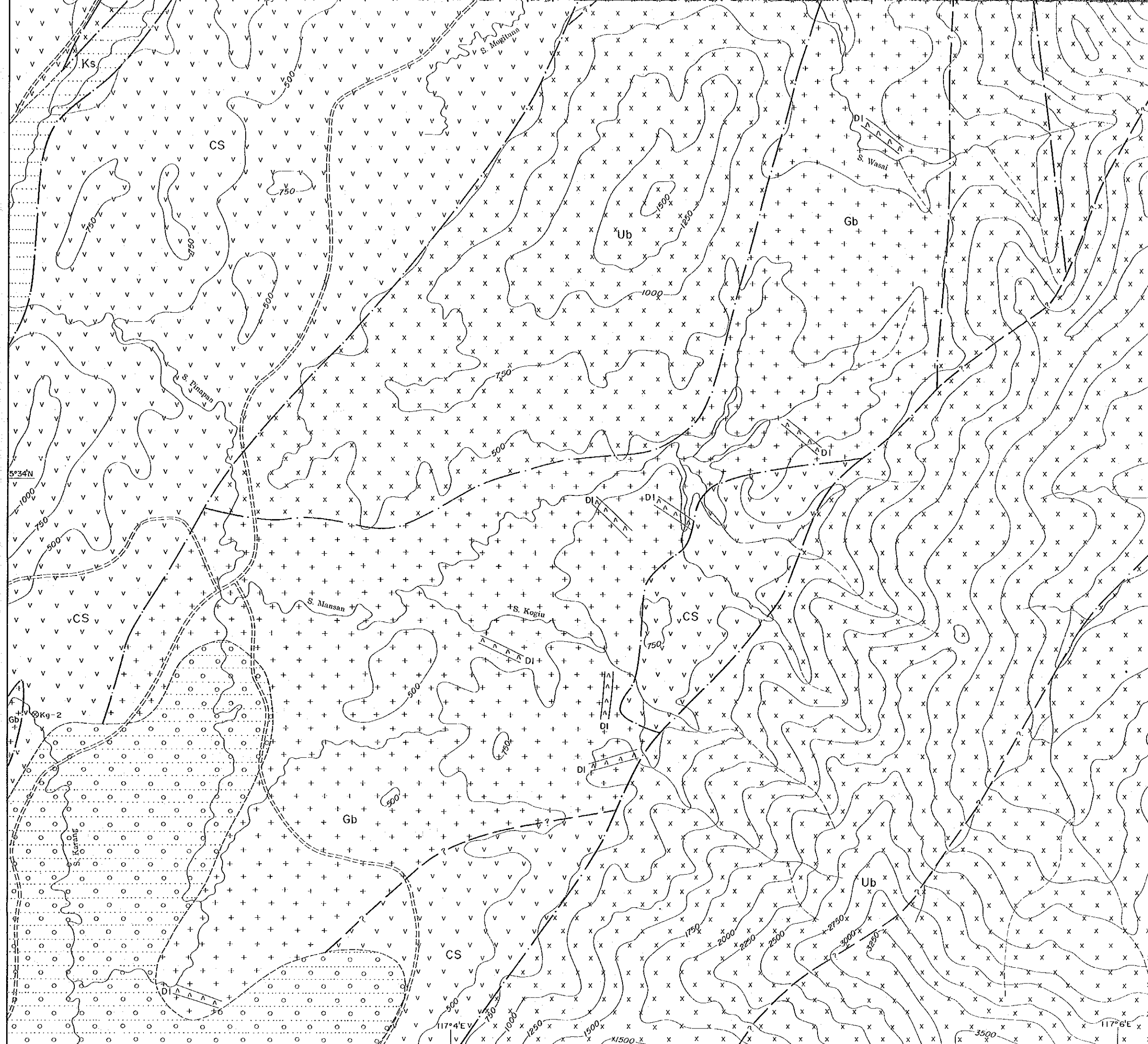
SEDIMENTARY AND VOLCANIC ROCKS

- | | | |
|---|--|---|
| Q
U
A
T
E
R
N
A
R
Y | | RECENT ALLUVIUM: Unconsolidated clay, silt, sand and gravel with minor organic (plant) material |
| | | TERRACE ALLUVIUM: Mainly fine white quartzose sand with discontinuous bands of quartz, chert and sandstone pebbles |
| T
E
R
T
I
A
R
Y | | KULAPIS FORMATION (? Ta ₁ - ? Te ₁): Mainly massive red, reddish-grey, with minor grey and chocolate coloured calcareous sandstone with spherical and ellipsoidal concretions and thin vitrain coal seams, bedded with white, grey and red siltstone, shale and mudstone |
| C
R
E
T
A
C
E
O
U
S
T
O
L
O
W
E
R
T
E
R
T
I
A
R
Y | | CHERT-SPLITE FORMATION (? Cr ₁ - ? Te ₁): Pillow basalt, splite, basaltic agglomerate, tuff and volcanic breccia (a); tuffaceous sandstone and red and grey shale and mudstone (b) |
| | | Dolerite |
| | | Gabbro, olivine gabbro and hypersthene gabbro |
| | | Ultrabasic rocks: Mainly serpentinized peridotite, minor serpentinite and serpentinized dunite bodies |

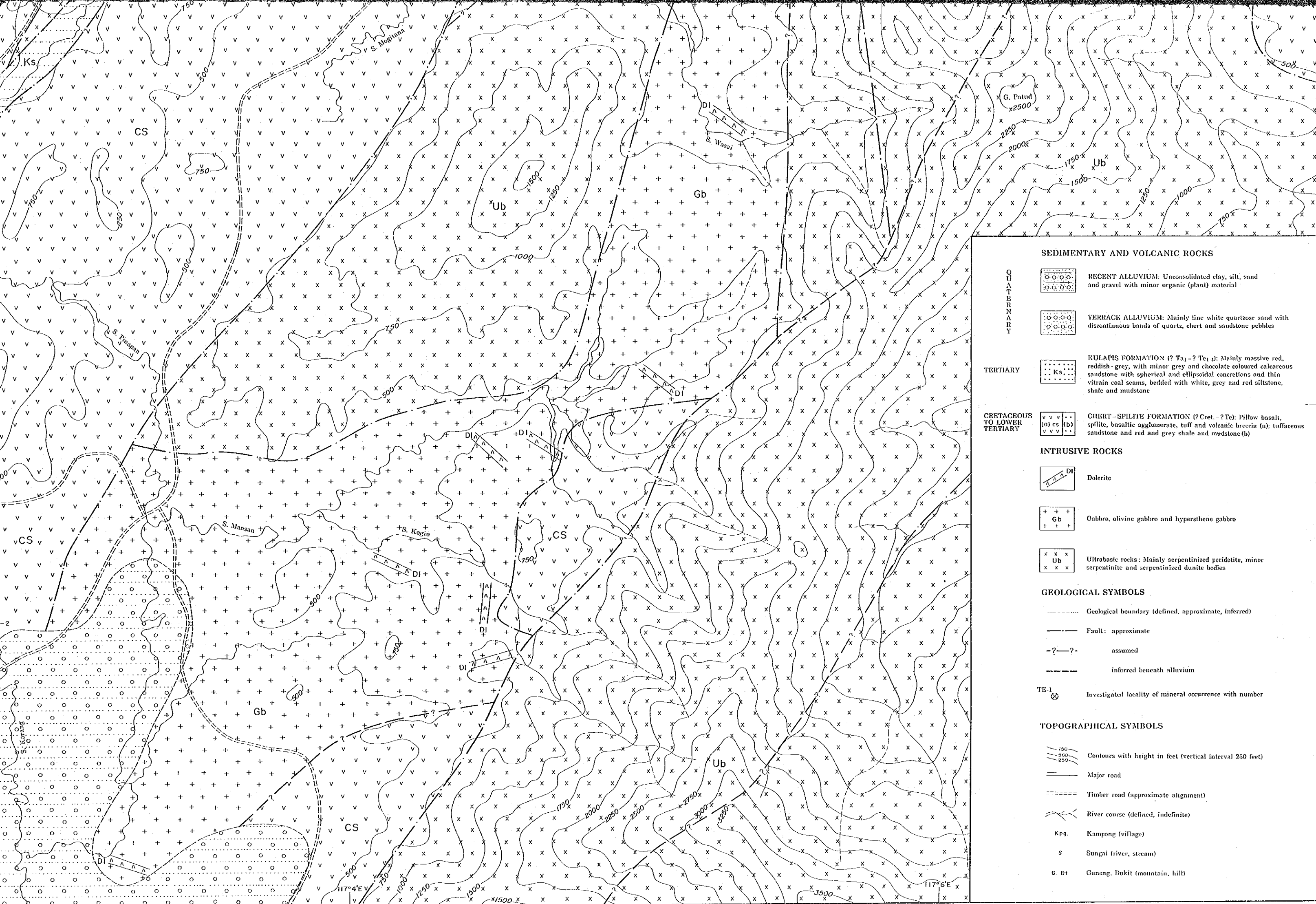


SEDIMENTARY AND VOLCANIC ROCKS

- | | | |
|------------------------------|---|--|
| QUATERNARY |  | <p>RECENT ALLUVIUM: Unconsolidated clay, silt, sand and gravel with minor organic (plant) material</p> |
| |  | <p>TERRACE ALLUVIUM: Mainly fine white quartzose sand with discontinuous bands of quartz, chert and sandstone pebbles</p> |
| TERTIARY |  | <p>KULAPIS FORMATION (? T₁ - ? T₁-4): Mainly massive red, reddish-grey, with minor grey and chocolate coloured calcareous sandstone with spherical and ellipsoidal concretions and thin vitrain coal seams, bedded with white, grey and red siltstone, shale and mudstone</p> |
| CRETACEOUS TO LOWER TERTIARY |  | <p>CHERT - SPILITE FORMATION (? Cret. - ? T₁): Pillow basalt, spilitic, basaltic agglomerate, tuff and volcanic breccia (a); tuffaceous sandstone and red and grey shale and mudstone (b)</p> |
| | INTRUSIVE ROCKS | |
| |  | <p>Dolerite</p> |
| |  | <p>Gabbro, olivine gabbro and hypersthene gabbro</p> |
| |  | <p>Ultrabasic rocks: Mainly serpentinized peridotite, minor serpentinite and serpentinized dunite bodies</p> |



SEDIMENTARY AND VOLCANIC ROCKS	
QUATERNARY	RECENT ALLUVIUM: Unconsolidated clay, silt, sand and gravel with minor organic (plant) material
	TERRACE ALLUVIUM: Mainly fine white quartzose sand with discontinuous bands of quartz, chert and sandstone pebbles
TERTIARY	KULAPIS FORMATION (? T _{h1} - ? T _{h1.1}): Mainly massive red, reddish-grey, with minor grey and chocolate coloured calcareous sandstone with spherical and ellipsoidal concretions and thin vitrain coal seams, bedded with white, grey and red siltstone, shale and mudstone
CRETACEOUS TO LOWER TERTIARY	(a) cs (b) Te CHERT-SPILITE FORMATION (? Cret. - ? Te): Pflow basalt, spilitic, basaltic agglomerate, tuff and volcanic breccia (a); tuffaceous sandstone and red and grey shale and mudstone (b)
INTRUSIVE ROCKS	
	Di Dolerite
	Gb Gabbro, olivine gabbro and hypersthene gabbro
	Ub Ultrabasic rocks: Mainly serpentinized peridotite, minor serpentinite and serpentinized dunite bodies
GEOLOGICAL SYMBOLS	
	Geological boundary (defined, approximate, inferred)
	Fault: approximate
	assumed
	inferred beneath alluvium
TE-1	Investigated locality of mineral occurrence with number
TOPOGRAPHICAL SYMBOLS	
	750, 500, 250 Contours with height in feet (vertical interval 250 feet)
	Major road
	Timber road (approximate alignment)
	River course (defined, indefinite)
Kpg.	Kampung (village)
S	Sungai (river, stream)
G. Bt	Gunong, Bukit (mountain, hill)



SEDIMENTARY AND VOLCANIC ROCKS

- QUATERNARY**
- RECENT ALLUVIUM:** Unconsolidated clay, silt, sand and gravel with minor organic (plant) material
 - TERRACE ALLUVIUM:** Mainly fine white quartzose sand with discontinuous bands of quartz, chert and sandstone pebbles
- TERTIARY**
- KULAPIS FORMATION (? Ta₁ - ? Te₁):** Mainly massive red, reddish-grey, with minor grey and chocolate coloured calcareous sandstone with spherical and ellipsoidal concretions and thin vitrain coal seams, bedded with white, grey and red siltstone, shale and mudstone
- CRETACEOUS TO LOWER TERTIARY**
- CHERT-SPLITE FORMATION (? Cret. - ? Te):** Pillow basalt, splite, basaltic agglomerate, tuff and volcanic breccia (a); tuffaceous sandstone and red and grey shale and mudstone (b)

INTRUSIVE ROCKS

- Dolerite**
- Gabbro, olivine gabbro and hypersthene gabbro**
- Ultrabasic rocks:** Mainly serpentinized peridotite, minor serpentinite and serpentinized dunite bodies

GEOLOGICAL SYMBOLS

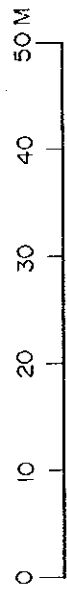
- Geological boundary (defined, approximate, inferred)
- Fault: approximate
- assumed
- inferred beneath alluvium
- Investigated locality of mineral occurrence with number

TOPOGRAPHICAL SYMBOLS

- Contours with height in feet (vertical interval 250 feet)
- Major road
- Timber road (approximate alignment)
- River course (defined, indefinite)
- Kampong (village)
- Sungai (river, stream)
- Gunung, Bukit (mountain, hill)

Fig. II-2-5
 Geological Sketch Map at Mineral
 Occurrences along Sungai Telupid,
 Telupid Area, Labuk Region, Sabah

Scale 1 : 500

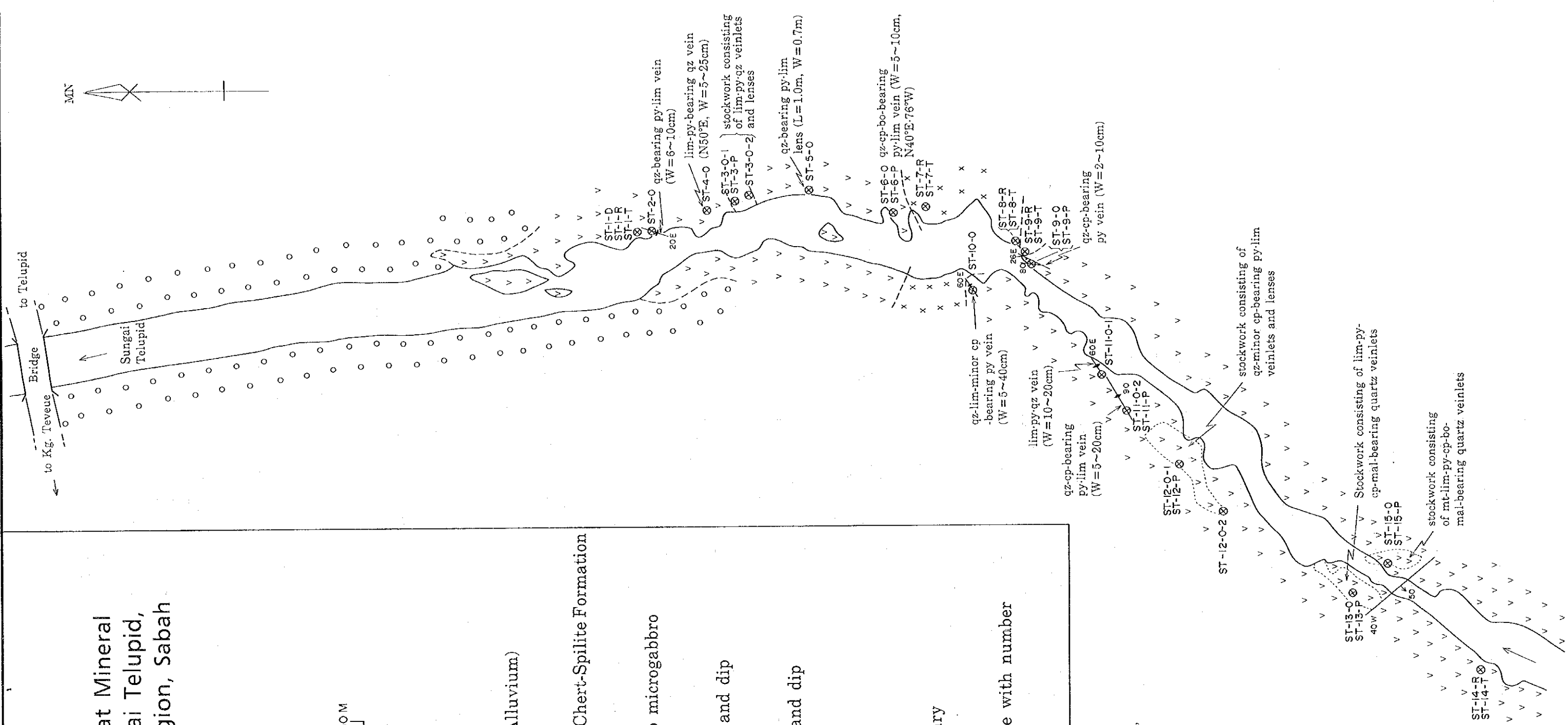


LEGEND

- Gravel and soil (Alluvium)
- Altered basalt of Chert-Spilitic Formation
- Altered dolerite to microgabbro
- Fault with strike and dip
- Vein with strike and dip
- Stockwork zone
- Geological boundary
- Location of sample with number

Abbreviation;

- qz : quartz,
- cp : chalcopyrite,
- mal : malachite,
- L : length,
- py : pyrite,
- bo : bornite,
- mt : magnetite,
- W : width,
- lim: limonite,



JICA