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Sammendrag Rapport fra generell geologisk kartlegging sør for Evenesdal. De forskjellige lithologiske enhetene er skildra. Over en trondhemittisk (?) granitt ligger et polymikt meta-konglomerat. Overst en tykk, pelittisk skifersekvens med marmorbenker og sma amfibolitt-kropper. I skiferen er det ogso pavist en opp til 3 m mektig sone med en lys (keratofyrisk ?) bergart med disseminert svovel- og kopperkis.				

REPORT ON GEOLOGICAL OBSERVATIONS AT THE
HEAD OF EVENESDAL(SOUTHERN PART)

By RAMESH BADKAR

8th July 1971-15th August'71

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(Based on aerial photos on scale
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1. Introduction.

Geological observations were made in an area south of the Evenesdal head-water region. The main lithologic groups are distinguished and the broad structural pattern recognised with particular attention to any ore bearing zones. The results are presented in the accompanying geological map and are briefly described in the report.

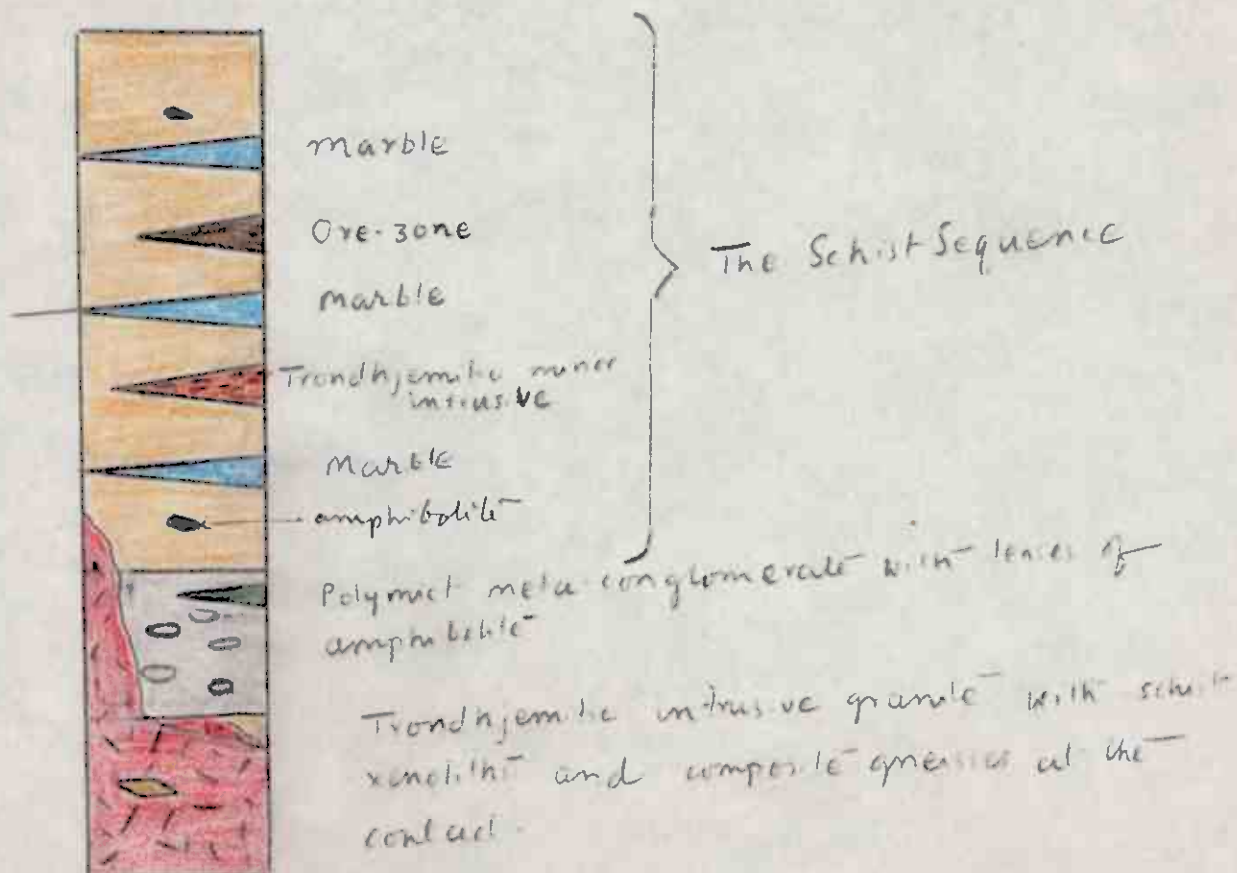
The work forms a part of a larger programme of regional geological investigation undertaken by the Company. (cf: Johansen 1968, Wilson 1969, Stokes & Moorehouse 1969, Kollung 1970-71 and Cunningham 1971).

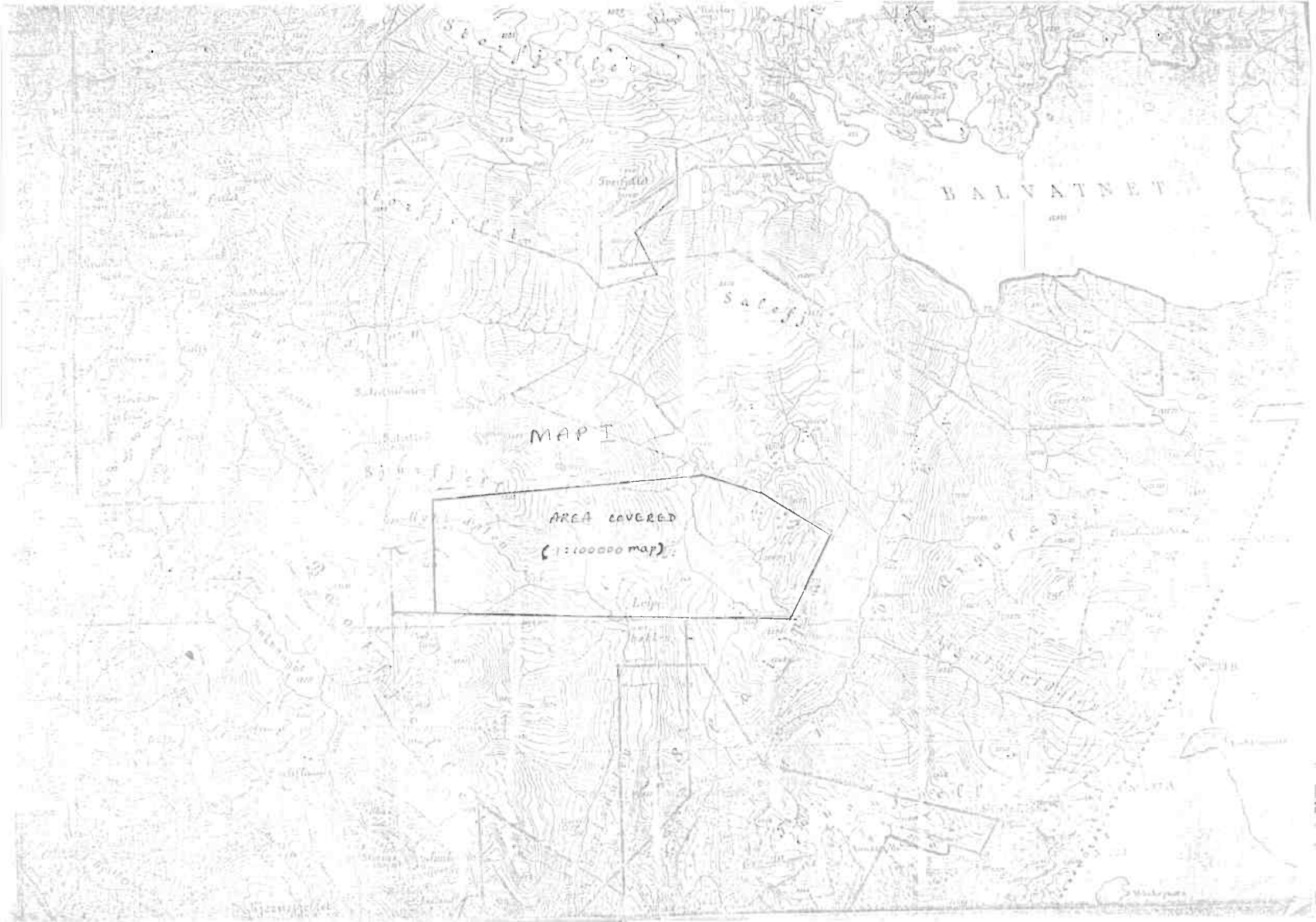
2. The working Area

Map I shows the outline of the area covered. Mapping was carried on aerial photographs on a scale of 1:16500 (photographs in the U and V Series).

3. Local Stratigraphy

The lithologic units of the area fall in the following generalised sequence:





MAP I

AREA COVERED
(1:100000 map)

BALNATNET

Safef

This sequence is principally based on the observations made on the broad synform recognised in the eastern part of the area.

Based on the relative structural disposition of this schist sequence with rocks in the adjoining areas and by their distinct character (especially in containing many trondhemitic minor intrusives) Mr. Kollung has suggested that these represent the Skaiti Schist Sequence.

4. Description of Lithologic Units

4-i. Granite:- Typically it is a massive, nonfoliated, medium grained Two-mica granite, and when fresh has a trondhemitic aspect (white feldspar). Occasional tourmaline is found especially along pegmatoidal contacts.

In contact with schists it produces a wide zone of partly foliated composite gneiss with a gradational contact. Schist xenoliths are not uncommon in the main granitic body. The contact with conglomerate is relatively sharp.

No definite hornfelsing was recognised.

4-ii. Minor Intrusives:- Pegmatoidal (tourmaline/muscovite bearing), granitic and aplitic veins are common (less than a metre up to 10m.) in the eastern region. Elsewhere they are less frequent. They are very leucocratic (trondhemitic) and some of them are foliated.

4-iii. Granitic Gneiss:- A stratigraphically confined well foliated granitic gneiss occurs structurally below the schist sequence in the south-west part of the area. 'Augen' structure is common.

This appears to be just a mappable unit of the minor intrusive complex.

4-iv. Conglomerate:- The conglomeratic formation predominantly consists of a polymict meta-conglomerate, plus thin bands and lenses of biotite-quartzite and amphibolite.

The average size of pebbles is 5cm. and below, and are quartz, quartzite, impure marble, amphibolite and pods of biotite. The matrix is fine grained, mostly composed of quartz and

biotite.

Undeformed pebbles are not uncommon in certain parts but are usually stretched and flattened and in extreme cases produce a banded rock.

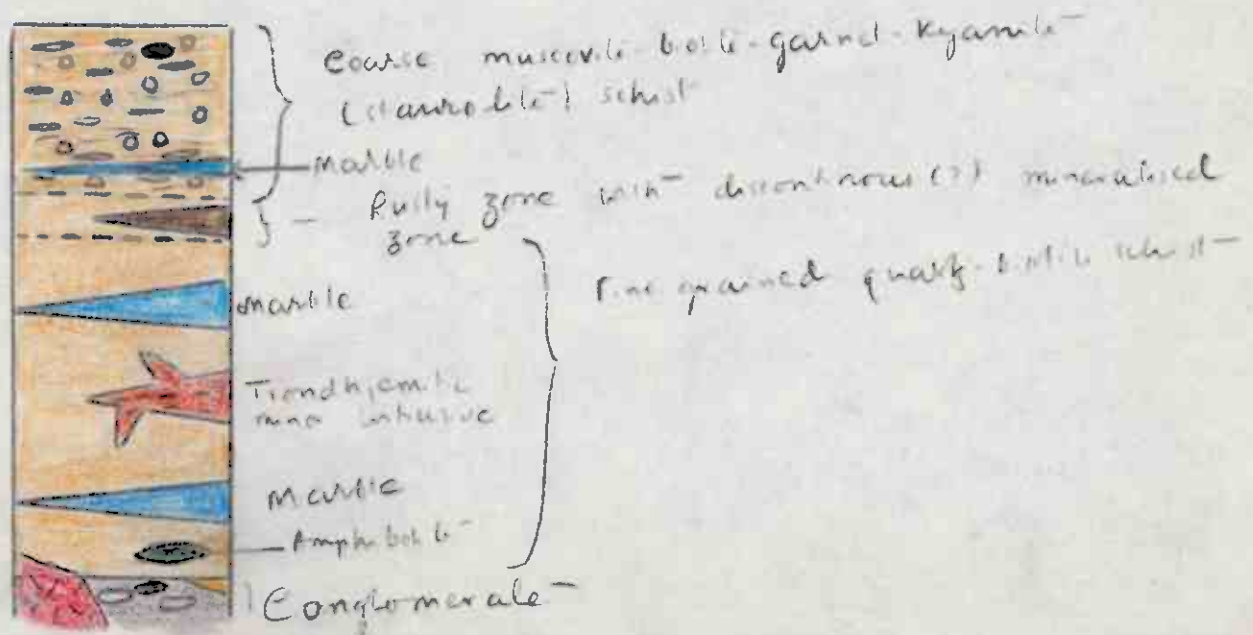
The total thickness varies between 10 and 30 m. The formation has a typical gray, careous weathering surface.

4-v. The Schist Sequence:- Structurally overlying the conglomerate formation is a thick sequence of schists, broadly pelitic in composition.

Towards the bottom it is a fine grained quartz-biotite schist with occasional garnet. The rock is highly jointed (3 sets) yielding small slabs. This has a smooth rusty weathering surface.

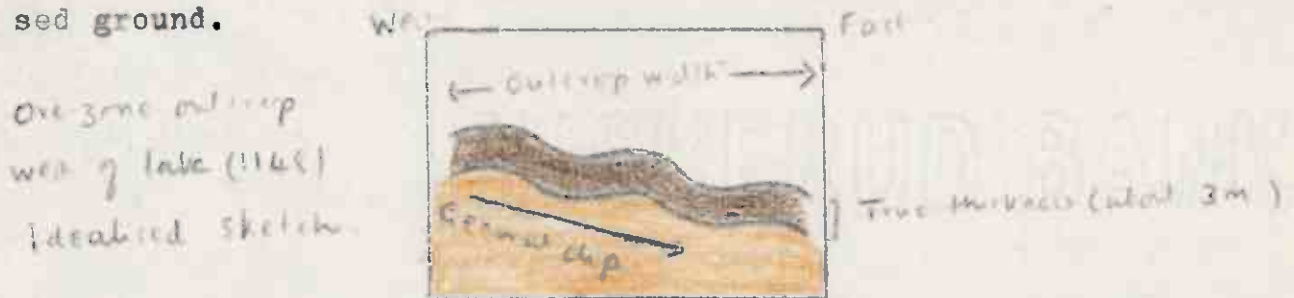
Towards the top kyanite (up to 20cm. long) and less frequent staurolite make their appearance, and the schist then is a coarse grained muscovite-biotite-garnet-kyanite-(staurolite) schist, containing small lenticles of quartzo-felspathic material.

Layers of marble (probably 3 stratigraphically distinct horizons), a poorly mineralised zone, rare pods (boudins?) of amphibolite and veins of trondhjemitic minor intrusives (usually foliated) are found within this schist sequence. This is shown in the following diagram:



5. Note on Ore-Zone

In a stream section just west of lake (1148) is exposed a white quartzo-felspathic rock (keratophytic?) with disseminated ~~pyrrhotite~~ (pyrite) and little chalcopyrite. The thickness is about 3m. but by small scale folding appears as a wide outcrop (see sketch below). The rock weathers to a characteristic rusty colour. On tracing both sides the zone quickly disappears in the badly exposed ground.



At approximately the same stratigraphic position elsewhere in the synform patchy occurrence of poorly mineralised quartzo-felspathic rocks are found. A small outcrop is also found in the stream section of Rykkedalen.

6. Note on Structure

In the eastern part, the rocks are disposed in an open asymmetric synform roughly with a N-S axis. The western limb has a low dip of about 12° whereas the eastern limb has a general dip between 28-60°.

In the western part of the area the schists dip roughly due ^{north} east at an angle of about 20-30°.

In addition to the major pattern, the rocks show small scale low-amplitude folding with axes at a small angle to the major lithologic ~~strike~~ strike of the rocks, producing small scale structural domes and basins. This, coupled with the uneven topography and the low lithologic dips produce a complicated outcrop pattern.

The few structural data shown on the map are not to portray simplicity in structural pattern, but are only to suggest the general attitude of the lithologic units. In areas of interfering fold-phases only a very detailed structural work can yield a clear picture of the structural pattern.

7. Summary

The report contains a brief account of geological observations made in the southern part of Evenesdal head-water region.

Structurally overlying an intrusive granite (trondhjemitic?) is a polymict meta-conglomerate formation. Overlying this, is a thick sequence of schists, broadly pelitic in composition. The schist sequence includes several marble bands and a poorly mineralised zone of quartzo-felspathic rock. The granite and the metamorphics contain many trondhjemitic minor intrusives. Small amphibolitic bodies are found in the metamorphics.

~~The~~ The metamorphics are disposed in an open asymmetric synform in the eastern part of the area.

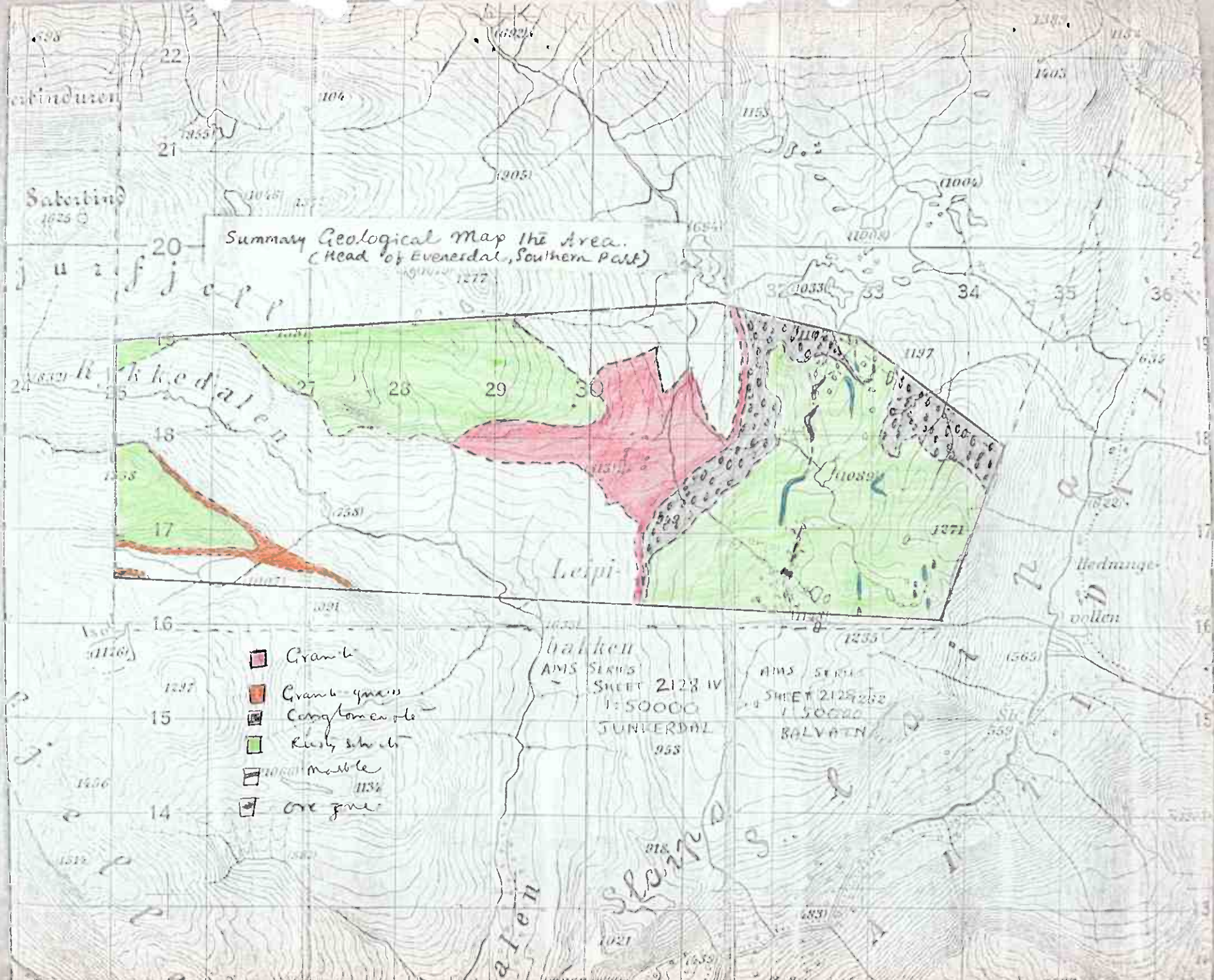
8. List of Samples

1. Typical granite, Cliff section eastern edge of main body.
2. Stretched conglomerate, Cliff across stream from lake (1148).
3. Biotite-quartz schist, West of main ore-outcrop.
4. Flattened conglomerate, West of lake (1089)
5. Staurolite bearing schist, about 1.5 Km. east of lake (1148).
6. Foliated aplitic vein, Just north of lake (1089).
7. Ore-bearing rock, Main outcrop west of lake (1148).
8. Biotite-gneiss, water-fall NE of lake (1007). *Two samples*
9. Kyanite bearing schist just east of lake (1007)
10. Coarse amphibolite (0.3 m. thick) north of lake (1007).
11. Ore-bearing rock, main outcrop west of lake (1148).
12. Foot-wall rock to the ore-zone west of main outcrop.
13. Coarse amphibolite SE edge of lake (1033).
14. Typical marble, outcrop west of lakes (1148) and (1089).
15. Rusty-schist just east of lake (1089).
16. Granitic-gneiss about 1 km. north of lake (1089).
- 17 and 18. Rusty schists just NE of lake (1089).
- 19 and 20. poorly mineralised rocks from outcrops in the Rykkedalen section.
- 21 and 22. Composite gneisses from ~~xxx~~ WSW contact of the main granite body.
23. Typical aplite from vein near the synclinal closure.
24. A composite gneiss from the NW contact of the main granitic body.

SKETCH PROFILE ALONG A-B.



VERTICAL SCALE VERY APPROXIMATE ($\approx$ HORIZONTAL SCALE).
SEE LEGEND IN THE 1:16500 GEOLOGICAL MAP.



Summary Geological Map the Area.
(Head of Eversdal, Southern Part)

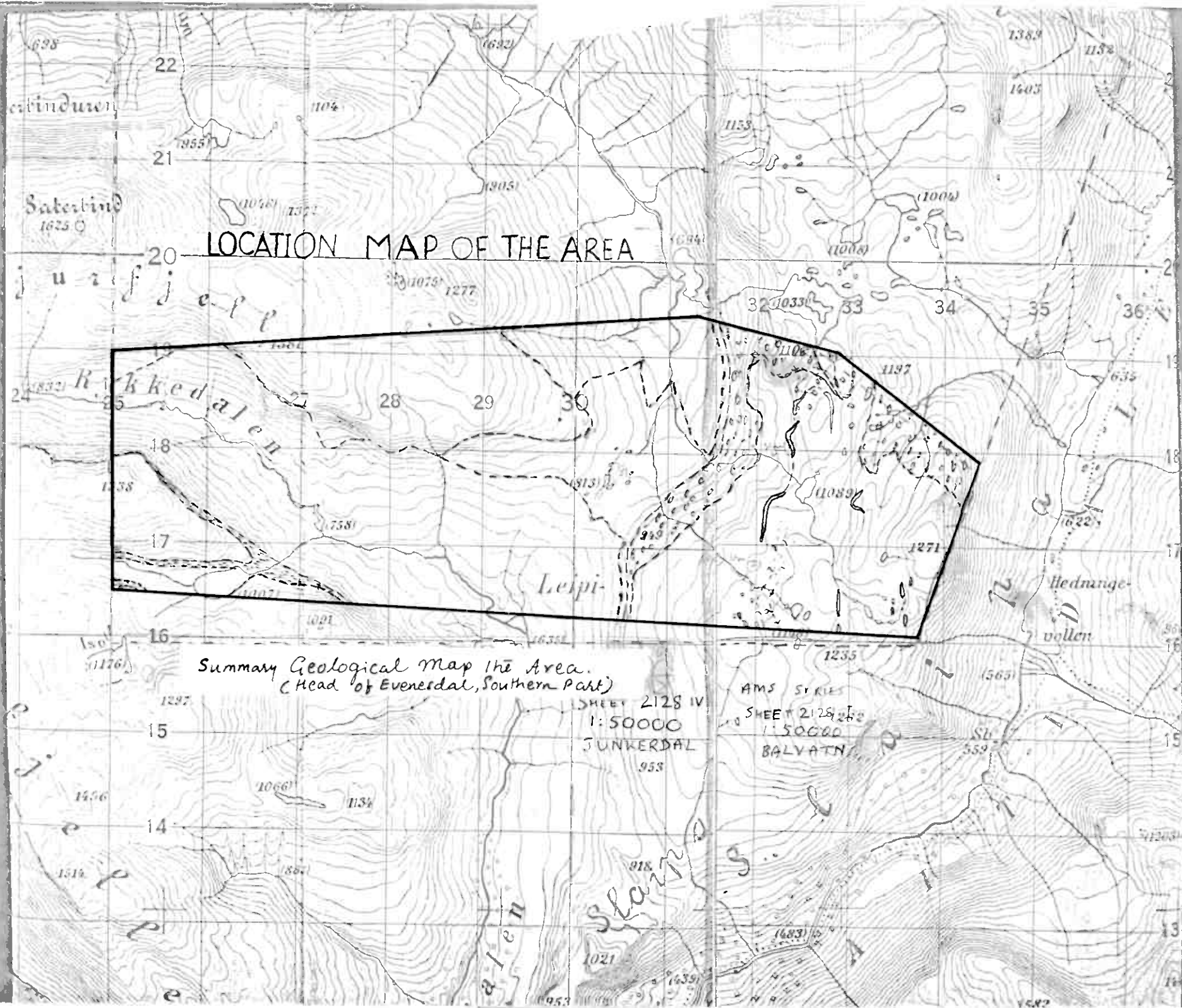
- Granit
- Granit gneiss
- Conglomerate
- Rhyolite
- Marble
- Gneiss

AMS SERIES
SHEET 2128 IV
1:50000
JUNTERDAL
953

AMS SERIES
SHEET 2128 V
1:50000
BALVATN
953

Ramesh Badkar. Aug. 1971 144-07

R.B



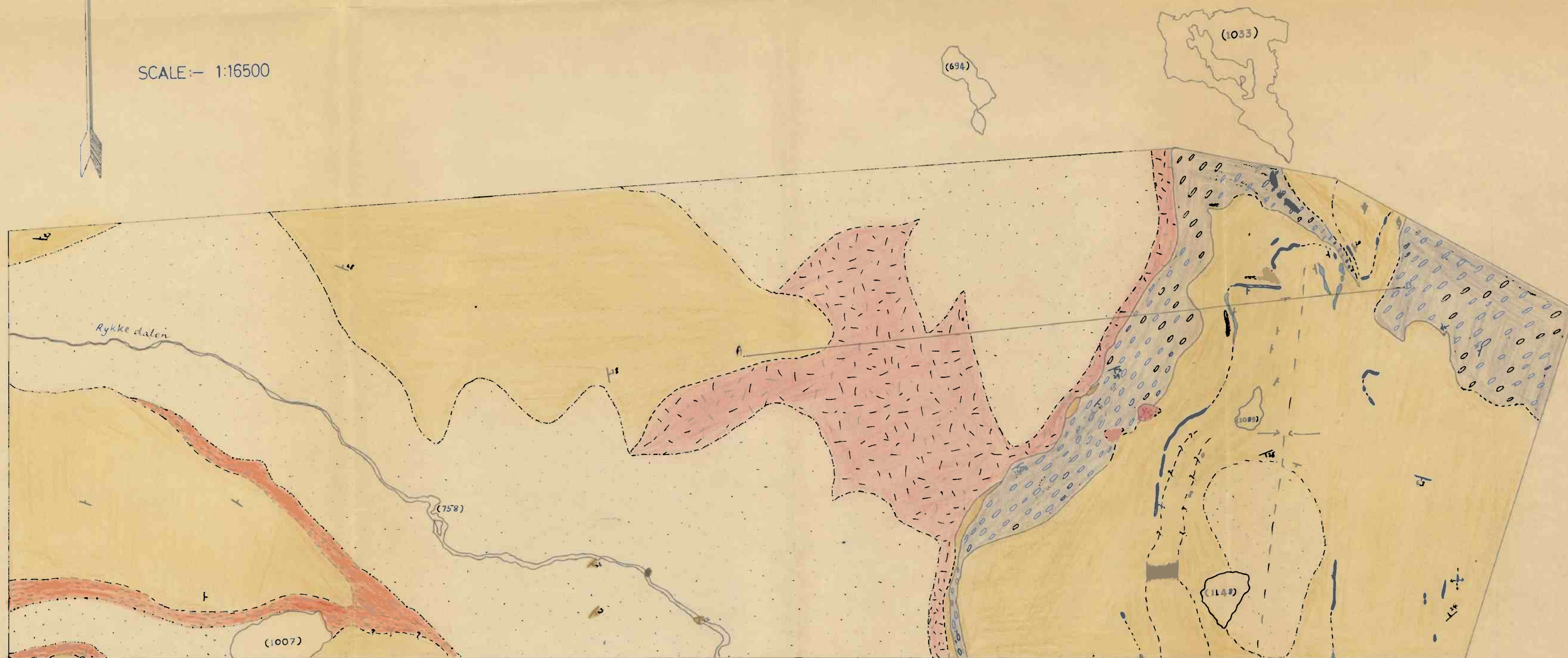


slat 23



GEOLOGICAL MAP OF THE AREA (HEAD OF EVENESDAL, SOUTHERN PART)

SCALE:- 1:16500



GRANITE



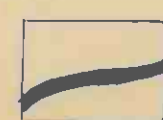
GRANITIC GNEISS



CONGLOMERATE



RED WEATHERING
SCHIST



MARBLE



AMPHIBOLITE



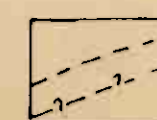
ORE ZONE



UNEXPOSED GROUND



LITHOLOGIC BOUNDARIES



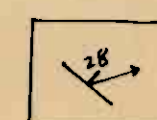
LITHOLOGIC
BOUNDARIES (APPROX-
IMATE OR INFERED)



APPROXIMATE BOUNDARY
OF UNEXPOSED
GROUND



TRACE OF
FOLD AXES



GENERAL LITHOLOGIC DIP
(PLUS DIRECTION OF
PEBBLE ELONGATION ETC.)