Bergvesenet rapport nr	Intern Journal nr	Internt arkiv nr	Rapport lokalisering	Gradering
BV 2244				**Fortrolig**
Kommer fra ..arkiv Sulitjelma Bergverk A/S	Ekstern rapport nr "522230008"	Oversendt fra	Fortrolig pga	Fortrolig fra dato:

Tittel

Field report Saltdal.

Forfatter	Dato	Bedrift
YOUNG I C	1968	Sulitjelma Gruber A/S

Kommune	Fylke	Bergdistrikt	1: 50 000 kartblad	1: 250 000 kartblad

Fagområde	Dokument type	Forekomster
Råstofftype	Emneord	

Sammendrag

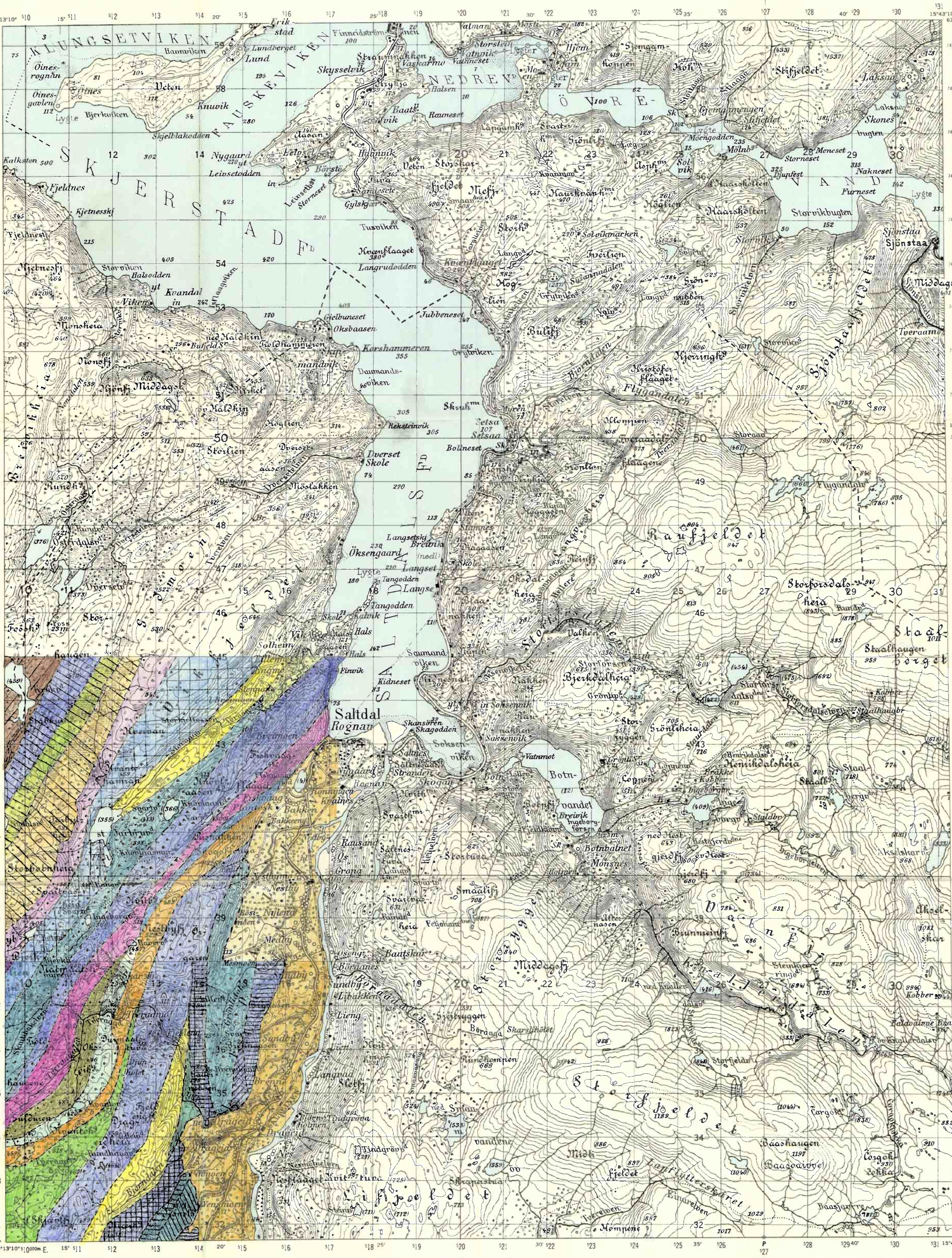
Et område på vestsida av Saltdal er kartlagt i M= 1:50 000, mellom Vikfjellet og Björndalen. Berggrunnen bestar stort sett av marmor, kalk- og granatglimmerskifre, litt amfibolitt. Trolig ingen økonomisk interessante mineraliseringer. Bergartene stryker Nù - SV og danner en stor antiklinal.

NORWAY-NORGE 1:50,000

FIRST EDITION–AMS

SALTDAL

SHEET 2129 III
SERIES M711



15°13'10" 510000m. E. 15' 511 512 513 514 20' 515 516 517 518 25' 519 520 521 30' 522 523 524 525 35' 526 P 527 528 529 40' 530 531 15°43'10"

67°15' — 67°00' — 7432000m. N.

M711
First Edition–AMS

Prepared by the Army Map Service (AM), Corps of Engineers, U. S. Army, Washington, D. C.
Copied in 1952 from Norge 1:50,000, Norges Geografiske Oppmåling, Sheet L 13, 1944. Sheet size changed and planimetric detail partially revised.

Malestokk, Scale 1:50,000

1 ½ 0 1 2 3 Miles
1000 500 0 1000 2000 3000 4000 Meters
1000 500 0 1000 2000 3000 4000 Yards

EKVIDISTANSE. CONTOUR INTERVAL 30 METERS

TRANSVERSE MERCATOR PROJECTION

HORIZONTAL DATUM: EUROPEAN DATUM

BLACK NUMBERED LINES INDICATE THE 1,000 METER UNIVERSAL TRANSVERSE MERCATOR GRID, ZONE 33, INTERNATIONAL SPHEROID
RUTENETT UTM SONE 33. SORTE TALL

THE LAST THREE DIGITS OF THE GRID NUMBERS ARE OMITTED
TALLENE ANGIR KM.

HEIGHTS AND DEPTHS IN METERS

USERS NOTING ERRORS OR OMISSIONS ON THIS MAP ARE URGED TO MARK HEREON AND FORWARD DIRECTLY TO COMMANDING OFFICER, ARMY MAP SERVICE, WASHINGTON, D. C. MAPS SO FORWARDED WILL BE RETURNED OR REPLACED IF DESIRED.

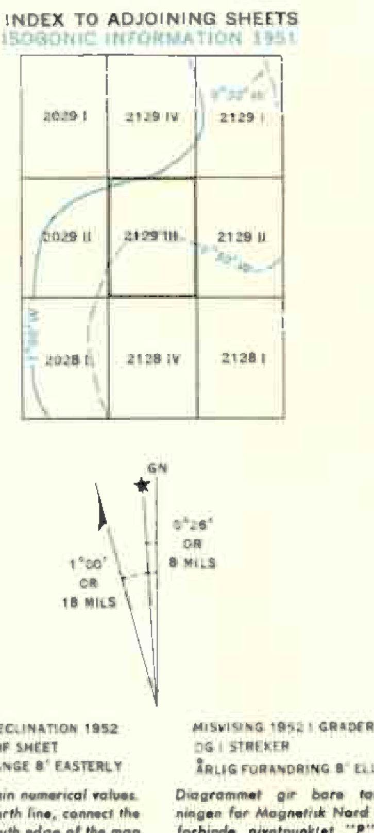
TRYKT I OFFSET EMIL MOESTUE A/S, OSLO. 12-63.

LEGEND—TEIKNTYDING

- International boundary with marker — *Riksgrense, grenseröys, -merke*
- Fylke boundary — *Fylkesgrense*
- Herad town boundary — *Heradsgrense, bygrense*
- Sokn boundary — *Soknegrense*
- Crown lands boundary — *Statsålmenningsgrense*
- Main road; Route number—*Hovudveg, vegnummer* (50)
- Secondary road—*Bygdeveg*
- Private road—*God privat köyreveg*
- Cart road—*Kjerreveg*
- Winter road; Track—*Vinterveg. Lite synleg stig (ferdaveg)*
- Path, distinct—*Klövveg, gangveg, tydeleg tråkka stig*
- Path with markers—*Vardesett stig og blåmerkt skogsveg*
- Telephone or telegraph line; Station — *Telefon-telegraflinje, stasjon*
- Power transmission line; Power station, transformer station — *Elektrisk leidning, kraft el. transformatorst.*
- Rocks: Awash; Sunken—*Båe i sjömålet. Båe under vatnet*
- Sandy foreshore flat—*Havstrand med fjöre og slaggrunnslinje*
- Marsh—*Myr*
- Coniferous woods—*Barskog*
- Deciduous woods—*Louvskog*
- Railroad, double track; Stations; Halt — *Jarnveg (tvisporal), stasjon, stoppestad*
- Railroad, single track; Caretakers house — *Jarnveg (einsporal), vaktarhus*
- Railroad, narrow gauge, electric tramway — *Tertiær jarnveg, elektrisk sporveg*
- Railroad under construction — *Jarnveg som er i bygging*
- Streetcar line — *Trallebane, hestejarnveg*
- Aerial cableway—*Togbane (taubane)*
- Church; Parish, chapel—*Hovudkyrkje. Soknekyrkje. Kapell*
- Cemeteries—*Kyrkjegard*
- Factory, power station, etc.; Mill — *Större fabrikk, drift, kraftverk, mylne o.l.*
- Brickworks; Small mill; Sawmill — *Teglverk, Mylne (mölle), kvern, Sag*
- Mine, mining claim; Quarry—*Gruve, skjerp, Steinbrot*
- Wireless telegraph station—*Trådlaus stasjon*
- Airfield; Parade ground—*Flyplass. Eksisma*
- Horizontal control points—*Trigonometrisk punkt*
- Lighthouse, light; Beacon; Air navigation light — *Fyr, lykt. Sjömerke. Luftfyr*
- Fishers or hunters cabin, cattle camp, etc. — *Fiskarbu, skyttarbu, felæger o.l.*
- Farms; Farm, mountain pasture—*Gard, småbruk, plass, sæter*
- Cottage, school, hotel, meetinghouse, tourist shelter, inn, sports-hunters cabin, small farm, small power station, mill, etc. — *Villa, skole, hotell, bedehus, turisthytte, gjestgjevarhus, sports-jakthytte, mindre bruk, lite kraftverk, mölle o.l.*

RUTETILVISING (KARTREFERENSE), NAERMESTE 100 m.			SONEOMRÅDE GRID ZONE DESIGNATION 33W	TO GIVE A STANDARD REFERENCE ON THIS SHEET TO NEAREST 100 METERS		
Eksempel: SK			100 KM RUTE 100,000 M. SQUARE IDENTIFICATION	SAMPLE POINT: SK		
km aust	20.3		WQ	1. Locate first VERTICAL grid line to LEFT of point and read LARGE figures labeling the line either in the top or bottom margin, or on the line itself. Estimate tenths from grid line to point:	20	3
km nord		43.6		2. Locate first HORIZONTAL grid line BELOW point and read LARGE figures labeling the line either in the left or right margin, or on the line itself. Estimate tenths from grid line to point:	43	6
SK	203436			SAMPLE REFERENCE:	203436	
Merk at komma sloyfes og at 100 km tallene de små tallene 5 aust og 67 nord IKKE skal tas med. Ved meldinger utover 100 km eller hvis mere enn ett rutenett er merket på kartet, skal også 100 km ruten angis.			IGNORE the SMALLER figures of any grid number; these are for finding the full coordinates. Use ONLY the LARGER figures of the grid number; example: 7432000	If reporting beyond 100,000 meters or if sheet bears an overlapping grid, prefix 100,000 Meter Square Identification, as:	WQ203436	
SK	WQ203436					
Ved meldinger utover 9° nord, sud eller 18° aust, vest skal også soneområde angis:				If reporting beyond 9°N-S or 18°E-W, prefix Grid Zone Designation, as:	33WWQ203436	
SK	33WWQ203436					

INDEX TO ADJOINING SHEETS
ISOGONIC INFORMATION 1951



APPROXIMATE MEAN DECLINATION 1952 FOR CENTER OF SHEET
ANNUAL MAGNETIC CHANGE 8' EASTERLY

Use diagram only to obtain numerical values. To determine magnetic north line, connect the pivot point "P" on the south edge of the map with the value of the angle between GRID NORTH and MAGNETIC NORTH, as plotted on the degree scale at the north edge of the map.

MISVISING 1952 I GRADER OG MINUTTER OG I STREKER
ÅRLIG FORANDRING 8' ELLER 2.4 AUST.

Diagrammet gir bare tallverdiene. Retningen for Magnetisk Nord bestemmes ved å forbinde pivotpunktet "P" i söndre rammekant, med det punkt på skalaen i nordre rammekant, som svarer til misvisingen regnet i forhold til RUTENETT NORD (GN).

GLOSSARY–FORKORTELSER

Abbr.	Norsk	English	Abbr.	Norsk	English
Bh	bedehus	meetinghouse	ned	nedre	lower
bg	berg	mountain, rock	n	nordre	northern
Bvs	brannvaktstasjon	fire station	n^t	nut	peak
bk	bekk	brook, creek	PÅ	postapneri	post office
DS	dampskipsstoppested	port	pgd	prestegard	vicarage
Elektr Vk	elektrisitetsverk	power station	RS	redningsstasjon	rescue station
ev	elv	river	San	sanatorium	sanatorium
Fbr	fabrikk	factory	Sph	sportshytte	sports cabin
Fb	fiskarbu	fishers cabin	skj	skjær	rock, skerry
fj	fjell	mountain	Sk	skole	schoolhouse
fd	fjord	fiord	Sb	skytterbu	hunters hut
fs	foss	waterfall	st	store	great
Fl	felæger	cattle camp	str	straum	stream, current
gd, g^d	gard	farm	s^d	sund	sound
h^g	haug	hill, hillock	s^r	sæter	mountain-pasture
h^d	höyde, högd, hovd	hill	s^l	stöl	shieling
h^mr	hamar	crag	s	söndre	southern
hl	holme	islet	TS	telegrafstasjon	telegraph station
in, ind	indre	inner	t^d	tind	peak, pinnacle
Jh	jakthytte	hunters cabin	tj	tjern, tjörn	lakelet, pool
K^p	kamp	hill, hilltop	Th	turisthytte	tourists shelter
Kpl	kapell	chapel	Tk	tömmerkoie	lumber shanty
Kn^p	knapp	peak	UH	Ungdomshus	meetinghouse
Kn^t	knatt	peak	v^n	vann, vatn	lake (lakelet)
Kl	kolle	knoll	v	vestre	western
L	lade, löe	barn	v^k	verk	factory, works
l^d	land	land	v^b	vokterbolig	caretakers house
Ldh	landhandleri	shop	v^l	voll	plain, meadow
l	lille, litle, lisle	little	y^t	ytre	outer
LS	lodsstasjon	pilot station	ö	östre, austre	eastern
M	meieri	dairy	öv	övre	upper
m	mellem, midtre	middle			

SALTDAL, NORWAY

Ian C. Young

Field Report 30. Aug. 1968.

Contents

052 012

Report on Saltdal Mapping Area

Introduction.

The area mapped is situated on the western side of Saltdalen, bounded by grid lines; north $^{74}45$, south $^{74}38$, east $^{5}18$, west $^{5}95$.

The area consists of schists, marbles and amphibolites belonging to the Fauske Marble Group.

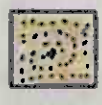
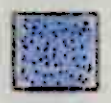
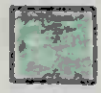
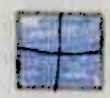
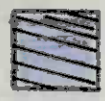
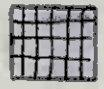
The rocks belong to the upper amphibolite metamorphic facies as a result of being situated deep within the Caledonian orogen where they underwent plastic deformation.
The rocks were divided into lithological units for the purposes of mapping. The boundaries of these units are necessarily arbitary and objective bacause in most cases they merge gradually into each other. Changes in composition also occur along strike probably due to lateral variations in the original sediments.

Structures trend approximately N.E. - S.W. A broad anticline (antiform) is the only major structure which plunges very gently southwards. Smaller folds and crenulations occur on the limbs of the main fold.

In general exposure was very poor because all the area is below the tree-line and there was also much marshy ground.

KEY TO COLOURS USED ON 1:50 000 MAP OF SALTDAL (I. YOUNG)

Units

	101/26		Drift
C	101/140		Banded black and white marble, saccharoidal marbles and white massive marbles.
B	999/180		Tremolite/actinolite marbles and schists with amphibolites.
D	999/30		Calc schists and garnet mica schists, amphibolites and thin impure marbles.
E	25		Garnet mica schist
	101/2		Saccharoidal grey marble and micaceous marbles
G	999/90		Calc mica schist
H	101/2		Massive marbles
I	101/9		Amphibolites and psammites
L	101/140		Marbles with variable mica content - amphibolitic in south (without pattern)
M	999/110		Actinolite schists, garnet mica schist and amphibolites.
N	101/26		Calc mica schist
	999/245		Mica schists
P	101/140		Banded marble and micaceous marble
Q	999/59		Non calc mica schists
K	101/6		Chlorite schists - calcic in south (ie. Jorbruvann)
J	101/6		Local psammite within marble unit
A	101/140		Black and white banded marble

Description of Lithological units

a. Banded marble

This consists predominantly of a coarse grained black and white banded marble. The banding was produced by metamorphic segregation of impurities (graphite?) and is not an original sedimentary property. Within the marble, variable amounts of mica are found with very local occurences of pyrite.

Calcic amphibolite are found occassionally as lenses and thin bands within the marble. These are the products of metamorphism and segregation of impurities (muds) within the limestore sediments.

b. Tremolite/actinolite marbles and schists.

The unit consists of a great variety of rock types which can be defined as a distinct unit only because they occur between units of relatively pure marbles.

The dominant rock types are impure marbles ie. tremolite and actinolite marbles in which the amphiboles occur as well formed phenoblasts, often in rosettes, set in a grey or white matrix of calcite. Micaceous marbles are also common and vary in texture from saccharoidal to microcrystalline. Actinolite and tremolite also occur with micas forming schists. Discordant amphibolites lenses of variable texture are common. Less common are thin bands of biotite schists which consist almost exclusively of biotite with small amounts of calcite. This unit was derived from Fe^{3+} and Mg^{2+} rich carbonate sediment ie. a muddy or silty limestone. Pyrite is locally common within the amphibolites.

Veins of quartz are found, usually in association with the more schistose members, but lacked minerals which were found in other units (see later notes).

c. Massive Marble Unit.

This unit marks the return of pure carbonate sediments which yielded relatively pure marbles after metamorphism.

In the south of my area the unit can be subdivided into two distinct marble types: a black and white banded marble in the east and a white massive marble in the west. Amphibolites are found locally in the marble. Traced nortwards along the strike the marbles thin and the two units merge into ore becoming less pure, as mica content increases. Marble textures become more varied northwards.

d. Schist and amphibolite unit.

This unit also varies along strike. In south marble bands occur in the dominant amphibolites and schists. Northwards these thin impure marbles lens out leaving a sequence of amphibolites with mica schists and garnet mica schists.

e. Garnet Mica Schist Unit.

This unit comes into my area from the south and quickly lenses out. Non calc amphibolites also occur. This unit could easily be included in the previous unit (d) and is only distinguished because it thickens and forms a distinctive feature to the south in Mr. Watlings area.

f. Micaceous Saccharoidal Marble.

The boundary between this unit and unit (d) is drawn where these impure marbles became more abundant than the amphibolites and garnet mica schists. The % of mica varies from zero in the grey saccharoidal marbles through to quite a high percentage and causes the development of a cleanage in the marble because the mica is segregated and orientaled in planes. The unit thickens and becomes less micaceous when traced northwards.

g. Calcareous Mica Schist Unit.

This unit marks the return of a predominance of schists although marbles (micaceous) and thin amphibolites occur along the length of the unit. This unit is best exposed along the road leading north from Rognan along the west side of Saltdalsfjord.

The succession there is as follows:

Calc mica schist
Thin banded marble
Very micaceous marble
Garnet mica schist
Micaceous marble
Calc mica schist
Garnet mica schist
Chlorite garnet mica schist
Banded marble
Chlorite mica schist
Thick band of calcareous mica schist
Grey marble with mica
Amphibolite with mica

Quartz veining is very common in this schist unit and they often contain interesting minerals.

Kyanite and a green chrome mica (fuchsite) are common along with metallic minerals such as haemolite? galena and pyrite. However all these minerals are only local in occurence and there origin is not known.

In scree beneath the cliff face at Rognan specimens of an actinolite schist were found but none was seen in situ.

h. Massive Marble Unit.

As with previous unit this unit is best exposed in the road section north of Rognan.

White saccharoidal marble
Grey massive marble
Biotite schist
White marble
Banded marble
Coarse grained grey marble with thin bands of micaceous marble.
Banded marble
White saccharoidal marble
Banded marble with quartz veining
Micaceous marble
Chlorite mica schist
Micaceous, friable marble

Grey and white banded marble
Saccharoidal marble
Muscovite schist
Pyrite rich, garnet amphibolite
White saccharoidal marble

This unit can be traced the whole length of the area. It thins southwards but remains borically a relatively pure massive marble.

i. Psammite, Schist Unit

This unit occurs as a single outcrop which forms an impressive cliff feature within the marble. It consists of calc mica schists, psammite bands and subordinant non calc amphibolite bands and lenses.

j. Amphibolite, psammite unit

This unit consists of many varied lithologies which occur in thin bands and lenses. They have only one property in common and that is that they are non calcareous.

In the south of the area they consist of fine grained non calcareous amphibolites and garnet mica schists but exposure is very limited in the area of Ingeborgvann. Northwards the unit thickens reaching a maximum between Jorbruvann and Knovldalsvann. The unit then thins and finally disappears under drift in Vikelven.
Around Sparlivann the psammites appear and standout as resistant features. Various amphiboles occur, which vary greatly in texture from fine grained to fibrous. Chlorite? mica schists and garnet mica schists are also common.

The psammite contain variable amounts of mica which are orientated to give a cleavage which may be original bedding surfaces in the sediment.

k. Mica schist unit

The amount of calcite in these schists increases southwards and westwards until one passes into micaceous marbles and finally into the marbles of unit (1). Northwards the schists are almost non calcic and become chlorite mica schists.

l. Marble unit

This unit shows marked changes both in composition and thickness along the strike. In the south, calc amphibolites and thin marbles are dominant with thin psammites and schists. This part of unit is represented on the map without the # pattern. Traced northwards the marbles and calc mica schists become dominant, the psammite disappear and the amphibolites are of only minor importance.
The texture of the marbles varies as described in other units ie. fine grained through coarse grained to saccharoidal. All the marbles contain mica to a greater or lesser extent. One unusual point is the occurence of a pink coloured banded micaceous marble.
However this cannot be traced for any distance and appears to be a local deposit. (113.398)

m. Non calc schists unit.

Consists in the south of non calc actinolite schists and garnet mica schists and fine grained amphibolites which have stains of a weathered iron ore, probably pyrite.

Northwards the actinolite schists thin to a subordinate position while the non calc iron rich amphibolites and non calc schists can be traced, with difficulty to the northern boundary of the area.
The presence of garnets appears to be local and cannot be traced northwards passed grid line $^{74}42$.

n. Calcareous schist unit.

This unit consists mainly of a distinctive biotite schist which tends to be banded and contains brown calcite crystals which weather out producing a pitted surface on the weathered rock. This unit forms the high ground around Storbobr heia where exposure is very good. Its northward projection however is hypothetical because of the lack of exposure due to marsh in the N.W. area of the map.

o. Mica schists unit.

This unit is very poorly exposed but what is seen consists of a non calcareous mica schist probably with chlorite.

p. Banded and micaceous marble unit.

This unit comprises a variety of marbles, which are well exposed in the stream connecting Nydalsvann and Krokvann. Along both boundaries the marbles contain much mica but in the middle of the unit the marbles become purer. Both banded and massive marbles occur both being predominantly coarse grained although minor bands of saccharoidal and semisaccharoidal are found.

q. Non calcareous schist unit.

This unit which is also very badly exposed consists of non calcareous chlorite mica schist.

All the rocks examined in the area are the products of metamorphism of sedimentary rocks, limestones, calcareous muds and silts with minor amounts of sand. These were probably a shallow shelf deposit and exhibit facies changes as expected in such an environment. The segregation of minerals due to the metamorphism also increased the variation in composition along the strike.
There is no evidence that any of the rocks are metamorphosed igreous rocks.

Economic Possibilities.

Minerals of possible economic value such as kyanite and galena occur in only very localied quartz veins.
The majority of marbles in the area contain micas and are therefore unsuitable for use as a facing stone.

Structure.

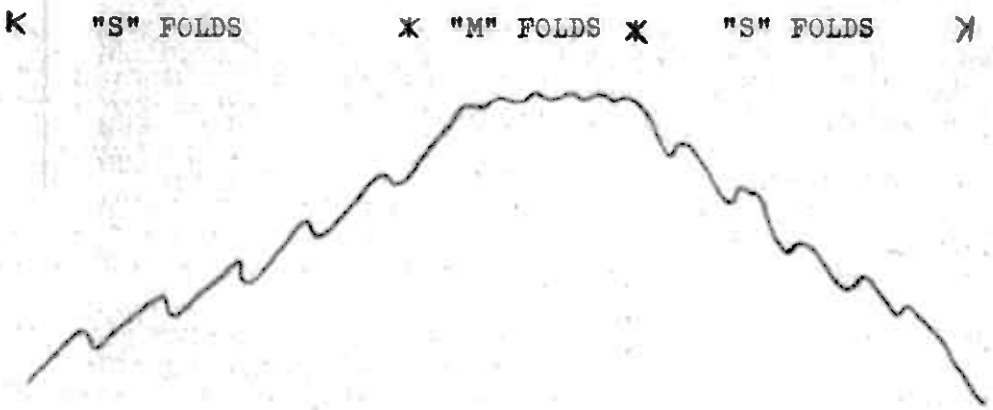
Structures trend approximately N.E. - S.W. over the whole area, thus conforming to the regional Caledonian trend.

The rocks dip steeply to the S.E. in the east and south east area of the map and in the north west and west the rocks have a moderate dip to the N.W.

This indicates a broad anticline (antiform) trending N.E. - S.W. with a very gentle plunge to the S.W. with a vergence to the S.E. (see cross section).
Unfortunately beds cannot be correlated across the anticline with any certainty because of the lateral changes in composition as previously discussed.

The axial trace of the anticline runs along the Storåga Valley, through Jorbruvann and Ingeborgvann.

The limbs of the anticline are also frighly folded. Good examples of "S" are seen on the road between Rognan and Vik. "M" folds are seen on the northern shore of Jorbruvann.



Smaller crenulations on the cm.scale are common in all rock units but are best seen in the schists.

The marbles show evidence for much plastic flow during metamorphism as would be expected under the high pressure and temperature conditions experienced.

Calcite and quartz which may be due to "sweating out" can be seen cutting across folds why they remind unfolded, thus showing their emplacement to have occured after the fold phase.

Two lineations can be seen in some schists one parallel to the fold axes while the other is at an angle to it. This indicates that these rocks have undergone two fold phases.

There is no evidence for folding in the area.

Specimens.

AY (143.395)
Black and white banded marble.

BY (141.396)
White saccharoidal marble.

CY (148.394)
Actinolite marble.

DY (134.389)
Microcrystalline marble and quartz.

EY (145.398)
Micaceous marble.

FY (146.396)
Tremolite marble.

GY (149.395)
Biotite schist.

HY (149.395)
Amphibolite with some pyrite.

IY (149.395)
Coarse grained amphibolite.

JY (134.384)
Microcrystalline and saccharoidal white marble.

KY (147.398)
Tremolite marble.

LY (169.434)
Garnet, chlorite mica schist.

MY (169.435)
Mica schist.

NY (169.433)
Kyanite and quartz.

OY (169.438)
Chlorite mica schist.

PY (169.437)
Muscovite schist

QY (112.386)
Amphibole schist.

RS (110.387)
Calcareous mica schist.

SY (105.388)
Micaceous marble.

TY (105.390)
Psammite.

UY (105.392)
Amphibolite.

VY (148.408)
Amphibole mica schist.

WY (122.395)
Calc mica schist.

XY (133.396)
Calc mica schist.

YY (098.387)
Actinolite schist.

Z_1Y (160.424)
Haematite?

Z_2Y (158.423)
Mineralized quartz vein, calcite rhombs, fuchsite, tremolite.

1Y (117/407)
Banded calc mica schist.

2Y (113.405)
Non calc mica schist.

3Y (106.406)
Calc mica schist.

4Y & 5Y (104.406)
Both from some exposure - calc mica schists.

6Y (121.404)
Psammite with muscovite flakes.

7Y (120.412)
Fibrous amphibolite with weathered iron ore minerals.

8Y (123.416)
Calc mica schist.

9Y (114.396)

Pink banded marble with biotite.

10Y (117.393)

Garnet mica schist.

Specimens 11Y - 25Y collected in schist unit west of Rognan. From (162.425) - (168.434) in and by quartz veins.

11Y

Calcite - quartz vein

12Y

Calc mica schist

13Y

Actinolite schist and quartz vein

14Y

Chlorite mica schist.

15Y

Mica schist.

16Y

Quartz vein with calcite and vug with well formed quartz crystals.

17Y

Quartz vein with calcite and amphibole.

18Y

Fuchsite within quartz vein.

19Y

Iron stained quartz vein

20Y

Calcareous quartz vein with fuchsite and metallic mineral.

21Y

Quartz vein with galena and mica.

22Y

Quartz vein.

23Y

Calcareous quartz vein.

24Y

Chlorite mica schist with calcite vein.

25Y

Calcareous mica schist.

26Y (132.400)

Iron stained amphibolite.

27Y (135.398)
Amphibole with pyrite.

28Y (127.392)
Calc amphibolite with pyrite.

29Y (144.384)
Actinolite schist with pyrite.

30Y (137.397)
Mica schist.

31Y (148.409)
Amphibolite with pyrite.

32Y (149.400)
Actinolite/tremolite marble with pyrite.

33Y (120.416)
Biotite marble.

34Y (129.389)
Non calc amphibolite.

35Y (133.385)
White marble.

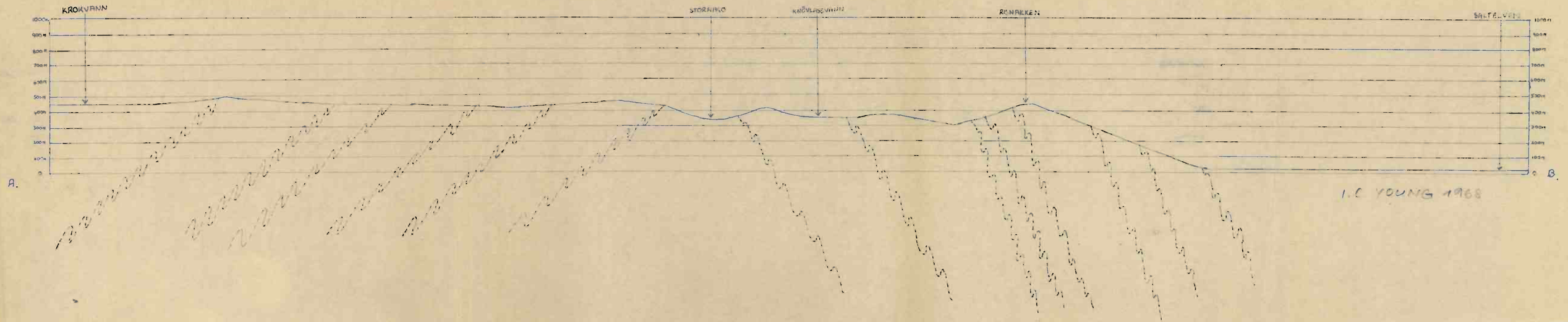
36Y (123.418)
Micaceous marble.

37Y (100.434)
Non calc mica schist.

38Y (146.385)
Actinolite marble.

39Y (148.394)
Tremolite marble.

40Y (150.417)
Calc amphibolite.


KROKVANN
STORFJELD
KNØVLISEVATN
RENAELVEN
SALTÉLVEN
A.
B.
I.C YOUNG 1968

SCALE 1:16666

N

10 11 12 13 14 15 16 17 18

44 43 42 41 40 39

3600m

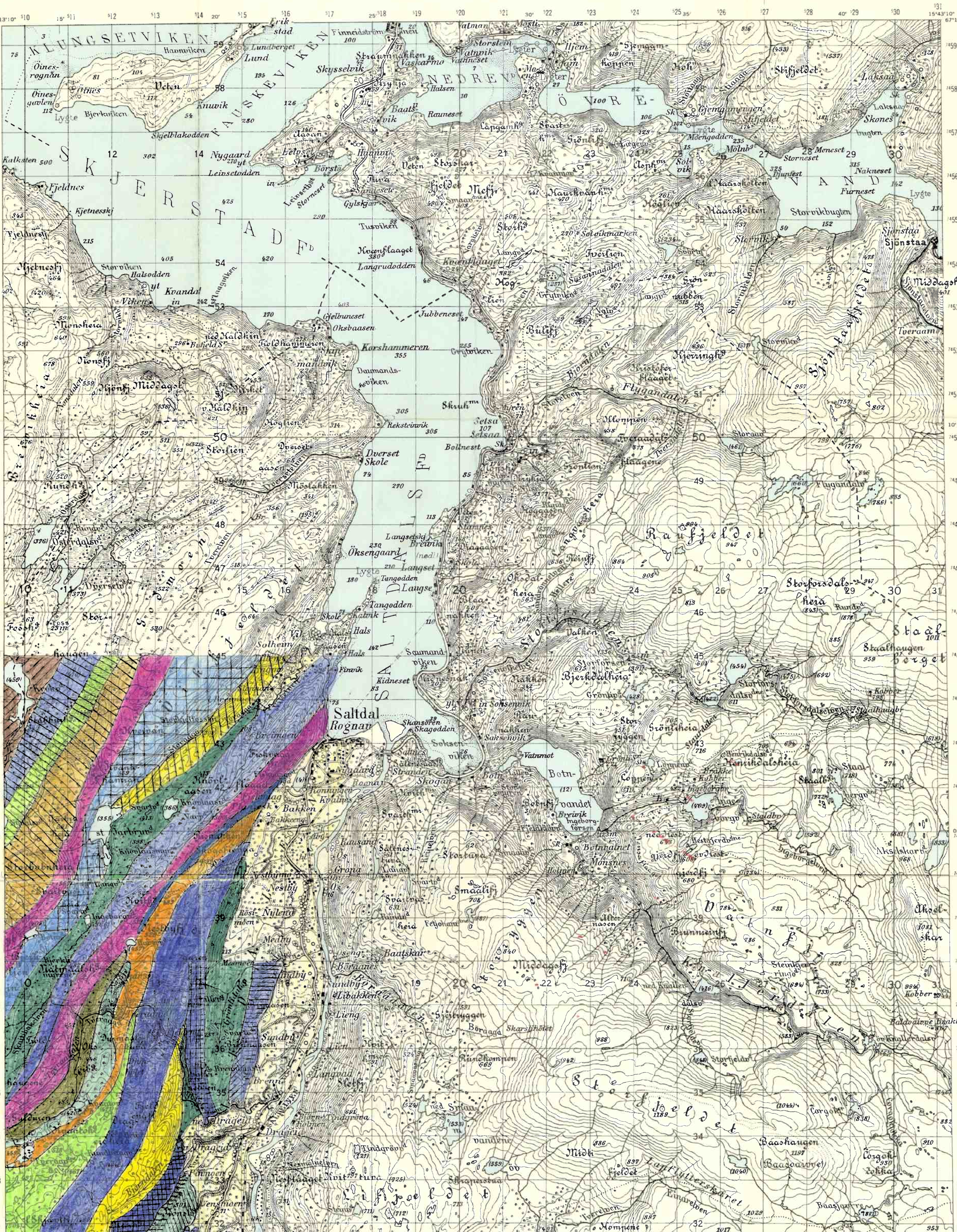
A.C. YOUNG & SON

NORWAY-NORGE 1:50,000

FIRST EDITION—AMS

SALTDAL

SHEET 2129 III
SERIES M711



P

15°13′10″ 5 10 000m E. 15′ 5 11 5 12 5 13 5 14 20′ 5 15 5 16 5 17 5 18 25′ 5 19 5 20 5 21 30′ 5 22 5 23 5 24 5 25 35′ 5 26 5 27 5 28 40′ 5 29 5 30 5 31 15°43′10″

67°15′ 67°00′ 7432 000m N.

TRYKT I OFFSET EMIL MOESTUE A/S. OSLO. 12-63.

M711
First Edition-AMS

Prepared by the Army Map Service (AM), Corps of Engineers, U. S. Army, Washington, D. C. Copied in 1952 from Norge 1:50,000, Norges Geografiske Oppmåling, Sheet L 13, 1944. Sheet size changed and planimetric detail partially revised.

Malestokk, Scale 1:50,000

1 ½ 0 1 2 3 Miles
1000 500 0 1000 2000 3000 4000 Meters
1000 500 0 1000 2000 3000 4000 Yards

EKVIDISTANSE. CONTOUR INTERVAL 30 METERS

TRANSVERSE MERCATOR PROJECTION

HORIZONTAL DATUM: EUROPEAN DATUM

BLACK NUMBERED LINES INDICATE THE 1,000 METER UNIVERSAL TRANSVERSE MERCATOR GRID, ZONE 33, INTERNATIONAL SPHEROID
RUTENETT UTM SONE 33. SORTE TALL

THE LAST THREE DIGITS OF THE GRID NUMBERS ARE OMITTED
TALLENE INGIR KM.

HEIGHTS AND DEPTHS IN METERS

USERS NOTING ERRORS OR OMISSIONS ON THIS MAP ARE URGED TO MARK HEREON AND FORWARD DIRECTLY TO COMMANDING OFFICER, ARMY MAP SERVICE, WASHINGTON, D. C. MAPS SO FORWARDED WILL BE RETURNED OR REPLACED IF DESIRED.

LEGEND—TEIKNTYDING

- International boundary with marker — *Riksgrense, grenseröys, -merke*
- Fylke boundary — *Fylkesgrense*
- Herad town boundary — *Heradsgrense, bygrense*
- Sokn boundary — *Soknegrense*
- Crown lands boundary — *Statsålmenningsgrense*
- Main road; Route number—*Hovudveg, vegnummer* (50)
- Secondary road—*Bygdeveg*
- Private road—*God privat köyreveg*
- Cart road—*Kjerreveg*
- Winter road; Track—*Vinterveg. Lite synleg stig (ferdaveg)*
- Path, distinct—*Klövveg, gangveg, tydeleg tråkka stig*
- Path with markers—*Vardesett stig og blåmerkt skogsveg*
- Telephone or telegraph line; Station — *Telefon-telegraflinje, stasjon*
- Power transmission line; Power station, transformer station — *Elektrisk leidning, kraft el. transformatorst.*
- Rocks: Awash; Sunken—*Båe i sjömalet. Båe under vatnet*
- Sandy foreshore flat—*Havstrand med fjöre og slaggrunnslinje*
- Marsh—*Myr*
- Coniferous woods—*Barskog*
- Deciduous woods—*Lauvskog*
- Railroad, double track; Stations; Halt — *Jarnveg (tvisporal), stasjon, stoppestad*
- Railroad, single track; Caretakers house — *Jarnveg (einsporal), vaktarhus*
- Railroad, narrow gauge, electric tramway — *Tertiær jarnveg, elektrisk sporveg*
- Railroad under construction — *Jarnveg som er i bygging*
- Streetcar line — *Trallebane, hestejarnveg*
- Aerial cableway—*Togbane (taubane)*
- Church: Parish, chapel—*Hovudkyrkje. Soknekyrkje. Kapell*
- Cemeteries—*Kyrkjegard*
- Factory, power station, etc.; Mill — *Större fabrikk, drift, kraftverk, mylne o.l.*
- Brickworks; Small mill; Sawmill — *Teglverk, Mylne (mölle), kvern; Sag*
- Mine, mining claim; Quarry—*Gruve, skjerp, Steinbrot*
- Wireless telegraph station—*Trådlaus stasjon*
- Airfield; Parade ground—*Flyplass. Eksismo*
- Horizontal control points—*Trigonometrisk punkt*
- Lighthouse, light; Beacon; Air navigation light — *Fyr, lykt. Sjömerke. Luftfyr*
- Fishers or hunters cabin, cattle camp, etc. — *Fiskarbu, skytfarbu, felæger o.l.*
- Farms; Farm, mountain pasture—*Gard, småbruk, plass, sæter*
- Cottage, school, hotel, meetinghouse, tourist shelter, inn, sports-hunters cabin, small farm, small power station, mill, etc. — *Villa, skole, hotell, bedehus, turisthytte, gjestgjevarhus, sportsjakthytte, mindre bruk, lite kraftverk, mölle o.l.*

RUTETILVISING (KARTREFERENSE) NAERMESTE 100 m.		
Eksempel: SK		
km aust	20.3	
km nord		43.6
SK	203436	

Merk at komma sløyfes og at 100 km tallene de små tallene 5 aust og 67 nord IKKE skal tas med.

Ved meldinger utover 100 km eller hvis mere enn ett rutenett er merket på kartet, skal også 100 km ruten angis:

SK	WQ203436

Ved meldinger utover 9° nord, syd eller 18° aust, vest, skal også sonområde angis:

SK	33WWQ203436

SONEOMRÅDE
GRID ZONE DESIGNATION: 33W
100 KM RUTE
100,000 M. SQUARE IDENTIFICATION
WQ

IGNORE the SMALLER figures of any grid number: these are for finding the full coordinates. Use ONLY the LARGER figures of the grid number; example: 7432000

TO GIVE A STANDARD REFERENCE ON THIS SHEET TO NEAREST 100 METERS	
SAMPLE POINT: SK	
1. Locate first VERTICAL grid line to LEFT of point and read LARGE figures labeling the line either in the top or bottom margin, or on the line itself. Estimate tenths from grid line to point	20 3
2. Locate first HORIZONTAL grid line BELOW point and read LARGE figures labeling the line either in the left or right margin, or on the line itself. Estimate tenths from grid line to point	43 6
SAMPLE REFERENCE	203436
If reporting beyond 100,000 meters or if sheet bears an overlapping grid, prefix 100,000 Meter Square Identification, as:	WQ203436
If reporting beyond 9°N-S or 18°E-W, prefix Grid Zone Designation, as:	33WWQ203436

INDEX TO ADJOINING SHEETS
ISOGONIC INFORMATION 1951

2029 I	2129 IV	2129 I
2029 II	2129 III	2129 II
2028 I	2128 IV	2128 I

GN
0°26′ OR 8 MILS
1°00′ OR 18 MILS

APPROXIMATE MEAN DECLINATION 1952 FOR CENTER OF SHEET
ANNUAL MAGNETIC CHANGE 8′ EASTERLY

Use diagram only to obtain numerical values. To determine magnetic north line, connect the pivot point "P" on the south edge of the map with the value of the angle between GRID NORTH and MAGNETIC NORTH, as plotted on the degree scale at the north edge of the map.

MISVISING 1952 I GRADER OG MINUTTER OG I STREKER
ÅRLIG FORANDRING 8′ ELLER 2.4 ‰ AUST.

Diagrammet gir bare tallverdiene. Retningen for Magnetisk Nord bestemmes ved å forbinde pivotpunktet "P" i söndre rammekant, med det punkt på skalaen i nordre rammekant, som svarer til misvisingen regnet i forhold til RUTENETT NORD (GN).

GLOSSARY-FORKORTELSER

Bh	bedehus	meetinghouse	ned	nedre	lower
bg	berg	mountain, rock	n	nordre	northern
Bvs	brannvaktstasjon	fire station	n^t	nut	peak
bk	bekk	brook, creek	PÅ	postapneri	post office
DS	dampskipsstoppested	port	Pg^d	prestegard	vicarage
Elektr Vk	elektrisitetsverk	power station	RS	redningsstasjon	rescue station
ev	elv	river	San	sanatorium	sanatorium
Fbr	fabrikk	factory	Sph	sportshytte	sports cabin
Fb	fiskarbu	fishers cabin	skj	skjær	rock, skerry
fj	fjell	mountain	Sk	skole	schoolhouse
fd	fjord	fiord	Sb	skytterbu	hunters hut
fs	foss	waterfall	st	store	great
Fl	felæger	cattle camp	str	straum	stream, current
gd, g^d	gard	farm	s^d	sund	sound
h^g	haug	hill, hillock	s^r	sæter	mountain pasture
h^d	höyde, högd, hovd	hill	s^l	stöl	shieling
h^mr	hamar	crag	s	söndre	southern
hl	holme	islet	TS	telegrafstasjon	telegraph station
in, ind	indre	inner	t^d	tind	peak, pinnacle
Jh	jakthytte	hunters cabin	tj	tjern, tjörn	lakelet, pool
K^p	kamp	hill, hilltop	Th	turisthytte	tourists shelter
Kpl	kapell	chapel	Tk	tömmerkoie	lumber shanty
Kn^p	knapp	peak	UH	Ungdomshus	meetinghouse
Kn^t	knatt	peak	v^n	vann, vatn	lake (lakelet)
Kl	kolle	knoll	v	vestre	western
L	låde, lå^e	barn	v^k	verk	factory, works
l^d	land	land	v^b	vokterbolig	caretakers house
Ldh	landhandleri	shop	v^l	voll	plain, meadow
l	lille, litle, lisle	little	y^t	ytre	outer
LS	lodsstasjon	pilot station	ö	östre, austre	eastern
M	meieri	dairy	öv	övre	upper
m	mellem, midtre	middle			

SALTDAL, NORWAY

Ian C. Young

Field Report 30. Aug. 1968.

Contents

Report on Saltdal Mapping Area

Introduction.

The area mapped is situated on the western side of Saltdalen, bounded by grid lines; north $^{74}45$, south $^{74}38$, east $^{5}18$, west $^{5}95$.

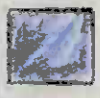
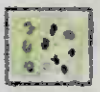
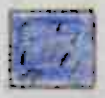
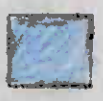
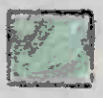
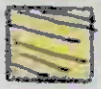
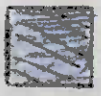
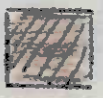
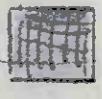
The area consists of schists, marbles and amphibolites belonging to the Fauske Marble Group.

The rocks belong to the upper amphibolite metamorphic facies as a result of being situated deep within the Caledonian orogen where they underwent plastic deformation.
The rocks were divided into lithological units for the purposes of mapping. The boundaries of these units are necessarily arbitary and objective because in most cases they merge gradually into each other. Changes in composition also occur along strike probably due to lateral variations in the original sediments.

Structures trend approximately N.E. - S.W. A broad anticline (antiform) is the only major structure which plunges very gently southwards. Smaller folds and crenulations occur on the limbs of the main fold.

In general exposure was very poor because all the area is below the tree-line and there was also much marshy ground.

KEY TO COLOURS USED ON 1:50 000 MAP OF SALTDAL (I. YOUNG)

Units			
	101/26		Drift
C	101/140		Banded black and white marble, saccharoidal marbles and white massive marbles.
B	999/180		Tremolite/actinolite marbles and schists with amphibolites.
D	999/30		Calc schists and garnet mica schists, amphibolites and thin impure marbles.
E	25		Garnet mica schist
F	101/2		Saccharoidal grey marble and micaceous marbles
G	999/90		Calc mica schist
H	101/2		Massive marbles
I	101/9		Amphibolites and psammites
L	101/140		Marbles with variable mica content - amphibolitic in south (without pattern)
M	999/110		Actinolite schists, garnet mica schist and amphibolites.
N	101/26		Calc mica schist
O	999/245		Mica schists
P	101/140		Banded marble and micaceous marble
Q	999/59		Non calc mica schists
K	101/6		Chlorite schists - calcic in south (ie. Jorbruvann)
J	101/6		Local psammite within marble unit
A	101/140		Black and white banded marble

Description of Lithological units

a. Banded marble

This consists predominantly of a coarse grained black and white banded marble. The banding was produced by metamorphic segregation of impurities (graphite?) and is not an original sedimentary property. Within the marble, variable amounts of mica are found with very local occurences of pyrite.

Calcic amphibolite are found occassionally as lenses and thin bands within the marble. These are the products of metamorphism and segregation of impurities (muds) within the limestore sediments.

b. Tremolite/actinolite marbles and schists.

The unit consists of a great variety of rock types which can be defined as a distinct unit only because they occur between units of relatively pure marbles.

The dominant rock types are impure marbles ie. tremolite and actinolite marbles in which the amphiboles occur as well formed phenoblasts, often in rosettes, set in a grey or white matrix of calcite. Micaceous marbles are also common and vary in texture from saccharoidal to microcrystalline. Actinolite and tremolite also occur with micas forming schists. Discordant amphibolites lenses of variable texture are common. Less common are thin bands of biotite schists which consist almost exclusively of biotite with small amounts of calcite. This unit was derived from Fe^{3+} and Mg^{2+} rich carbonate sediment ie. a muddy or silty limestone. Pyrite is locally common within the amphibolites.

Veins of quartz are found, usually in association with the more schistose members, but lacked minerals which were found in other units (see later notes).

c. Massive Marble Unit.

This unit marks the return of pure carbonate sediments which yielded relatively pure marbles after metamorphism.

In the south of my area the unit can be subdivided into two distinct marble types: a black and white banded marble in the east and a white massive marble in the west. Amphibolites are found locally in the marble. Traced nortwards along the strike the marbles thin and the two units merge into ore becoming less pure, as mica content increases. Marble textures become more varied northwards.

d. Schist and amphibolite unit.

This unit also varies along strike. In south marble bands occur in the dominant amphibolites and schists. Northwards these thin impure marbles lens out leaving a sequence of amphibolites with mica schists and garnet mica schists.

e. Garnet Mica Schist Unit.

This unit comes into my area from the south and quickly lenses out. Non calc amphibolites also occur. This unit could easily be included in the previous unit (d) and is only distinguished because it thickens and forms a distinctive feature to the south in Mr. Watlings area.

f. Micaceous Saccharoidal Marble.

The boundary between this unit and unit (d) is drawn where these impure marbles became more abundant than the amphibolites and garnet mica schists. The % of mica varies from zero in the grey saccharoidal marbles through to quite a high percentage and causes the development of a cleanage in the marble because the mica is segregated and orientaled in planes. The unit thickens and becomes less micaceous when traced northwards.

g. Calcareous Mica Schist Unit.

This unit marks the return of a predominance of schists although marbles (micaceous) and thin amphibolites occur along the length of the unit. This unit is best exposed along the road leading north from Rognan along the west side of Saltdalsfjord.

The succession there is as follows:

Calc mica schist
Thin banded marble
Very micaceous marble
Garnet mica schist
Micaceous marble
Calc mica schist
Garnet mica schist
Chlorite garnet mica schist
Banded marble
Chlorite mica schist
Thick band of calcareous mica schist
Grey marble with mica
Amphibolite with mica

Quartz veining is very common in this schist unit and they often contain interesting minerals.

Kyanite and a green chrome mica (fuchsite) are common along with metallic minerals such as haemolite? galena and pyrite. However all these minerals are only local in occurence and there origin is not known.

In scree beneath the cliff face at Rognan specimens of an actinolite schist were found but none was seen in situ.

h. Massive Marble Unit.

As with previous unit this unit is best exposed in the road section north of Rognan.

White saccharoidal marble
Grey massive marble
Biotite schist
White marble
Banded marble
Coarse grained grey marble with thin bands of micaceous marble.
Banded marble
White saccharoidal marble
Banded marble with quartz veining
Micaceous marble
Chlorite mica schist
Micaceous, friable marble

Grey and white banded marble
Saccharoidal marble
Muscovite schist
Pyrite rich, garnet amphibolite
White saccharoidal marble

This unit can be traced the whole length of the area. It thins southwards but remains borically a relatively pure massive marble.

i. Psammite, Schist Unit

This unit occurs as a single outcrop which forms an impressive cliff feature within the marble. It consists of calc mica schists, psammite bands and subordinant non calc amphibolite bands and lenses.

j. Amphibolite, psammite unit

This unit consists of many varied lithologies which occur in thin bands and lenses. They have only one property in common and that is that they are non calcareous.

In the south of the area they consist of fine grained non calcareous amphibolites and garnet mica schists but exposure is very limited in the area of Ingeborgvann. Northwards the unit thickens reaching a maximum between Jorbruvann and Knovldalsvann. The unit then thins and finally disappears under drift in Vikelven.
Around Sparlivann the psammites appear and standout as resistant features. Various amphiboles occur, which vary greatly in texture from fine grained to fibrous. Chlorite? mica schists and garnet mica schists are also common.

The psammite contain variable amounts of mica which are orientated to give a cleavage which may be original bedding surfaces in the sediment.

k. Mica schist unit

The amount of calcite in these schists increases southwards and westwards until one passes into micaceous marbles and finally into the marbles of unit (1). Northwards the schists are almost non calcic and become chlorite mica schists.

l. Marble unit

This unit shows marked changes both in composition and thickness along the strike. In the south, calc amphibolites and thin marbles are dominant with thin psammites and schists. This part of unit is represented on the map without the # pattern. Traced northwards the marbles and calc mica schists become dominant, the psammite disappear and the amphibolites are of only minor importance.
The texture of the marbles varies as described in other units ie. fine grained through coarse grained to saccharoidal. All the marbles contain mica to a greater or lesser extent. One unusual point is the occurence of a pink coloured banded micaceous marble.
However this cannot be traced for any distance and appears to be a local deposit. (113.398)

m. Non calc schists unit.

Consists in the south of non calc actinolite schists and garnet mica schists and fine grained amphibolites which have stains of a weathered iron ore, probably pyrite.

Northwards the actinolite schists thin to a subordinate position while the non calc iron rich amphibolites and non calc schists can be traced, with difficulty to the northern boundary of the area.
The presence of garnets appears to be local and cannot be traced northwards passed grid line 7442.

n. Calcareous schist unit.

This unit consists mainly of a distinctive biotite schist which tends to be banded and contains brown calcite crystals which weather out producing a pitted surface on the weathered rock. This unit forms the high ground around Storbobr heia where exposure is very good. Its northward projection however is hypothetical because of the lack of exposure due to marsh in the N.W. area of the map.

o. Mica schists unit.

This unit is very poorly exposed but what is seen consists of a non calcareous mica schist probably with chlorite.

p. Banded and micaceous marble unit.

This unit comprises a variety of marbles, which are well exposed in the stream connecting Nydalsvann and Krokvann. Along both boundaries the marbles contain much mica but in the middle of the unit the marbles become purer. Both banded and massive marbles occur both being predominantly coarse grained although minor bands of saccharoidal and semisaccharoidal are found.

q. Non calcareous schist unit.

This unit which is also very badly exposed consists of non calcareous chlorite mica schist.

All the rocks examined in the area are the products of metamorphism of sedimentary rocks, limestones, calcareous muds and silts with minor amounts of sand. These were probably a shallow shelf deposit and exhibit facies changes as expected in such an environment. The segregation of minerals due to the metamorphism also increased the variation in composition along the strike.
There is no evidence that any of the rocks are metamorphosed igreous rocks.

Economic Possibilities.

Minerals of possible economic value such as kyanite and galena occur in only very localied quartz veins.
The majority of marbles in the area contain micas and are therefore unsuitable for use as a facing stone.

Structure.

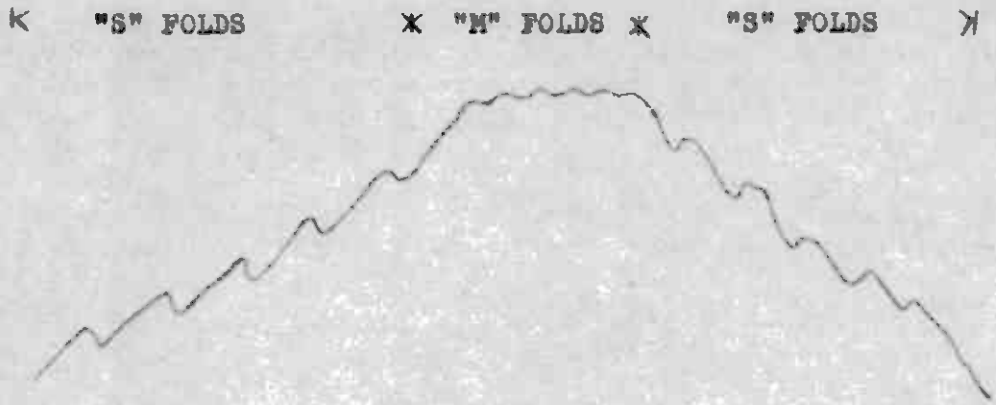
Structures trend approximately N.E. - S.W. over the whole area, thus conforming to the regional Caledonian trend.

The rocks dip steeply to the S.E. in the east and south east area of the map and in the north west and west the rocks have a moderate dip to the N.W.

This indicates a broad anticline (antiform) trending N.E. - S.W. with a very gentle plunge to the S.W. with a vergence to the S.E. (see cross section).
Unfortunately beds cannot be correlated across the anticline with any certainty because of the lateral changes in composition as previously discussed.

The axial trace of the anticline runs along the Storåga Valley, through Jorbruvann and Ingebergvann.

The limbs of the anticline are also frighly folded. Good examples of "S" are seen on the road between Rognan and Vik. "M" folds are seen on the northern shore of Jorbruvann.



Smaller crenulations on the cm.scale are common in all rock units but are best seen in the schists.

The marbles show evidence for much plastic flow during metamorphism as would be expected under the high pressure and temperature conditions experienced.

Calcite and quartz which may be due to "sweating out" can be seen cutting across folds why they remind unfolded, thus showing their emplacement to have occured after the fold phase.

Two lineations can be seen in some schists one parallel to the fold axes while the other is at an angle to it. This indicates that these rocks have undergone two fold phases.

There is no evidence for folding in the area.

Specimens.

AY (143.395)
Black and white banded marble.

BY (141.396)
White saccharoidal marble.

CY (148.394)
Actinolite marble.

DY (134.389)
Microcrystalline marble and quartz.

EY (145.398)
Micaceous marble.

FY (146.396)
Tremolite marble.

GY (149.395)
Biotite schist.

HY (149.395)
Amphibolite with some pyrite.

IY (149.395)
Coarse grained amphibolite.

JY (134.384)
Microcrystalline and saccharoidal white marble.

KY (147.398)
Tremolite marble.

LY (169.434)
Garnet, chlorite mica schist.

MY (169.435)
Mica schist.

NY (169.433)
Kyanite and quartz.

OY (169.438)
Chlorite mica schist.

PY (169.437)
Muscovite schist

QY (112.386)
Amphibole schist.

RS (110.387)
Calcareous mica schist.

SY (105.388)
Micaceous marble.

TY (105.390)
Psammite.

UY (105.392)
Amphibolite.

VY (148.408)
Amphibole mica schist.

WY (122.395)
Calc mica schist.

XY (133.396)
Calc mica schist.

YY (098.387)
Actinolite schist.

Z_1Y (160.424)
Haematite?

Z_2Y (158.423)
Mineralized quartz vein, calcite rhombs, fuchsite, tremolite.

1Y (117/407)
Banded calc mica schist.

2Y (113.405)
Non calc mica schist.

3Y (106.406)
Calc mica schist.

4Y & 5Y (104.406)
Both from some exposure - calc mica schists.

6Y (121.404)
Psammite with muscovite flakes.

7Y (120.412)
Fibrous amphibolite with weathered iron ore minerals.

8Y (123.416)
Calc mica schist.

9Y (114.396)
Pink banded marble with biotite.

10Y (117.393)
Garnet mica schist.

Specimens 11Y - 25Y collected in schist unit west of Rognan. From (162.425) - (168.434) in and by quartz veins.

11Y
Calcite - quartz vein

12Y
Calc mica schist

13Y
Actinolite schist and quartz vein

14Y
Chlorite mica schist.

15Y
Mica schist.

16Y
Quartz vein with calcite and vug with well formed quartz crystals.

17Y
Quartz vein with calcite and amphibole.

18Y
Fuchsite within quartz vein.

19Y
Iron stained quartz vein

20Y
Calcareous quartz vein with fuchsite and metallic mineral.

21Y
Quartz vein with galena and mica.

22Y
Quartz vein.

23Y
Calcareous quartz vein.

24Y
Chlorite mica schist with calcite vein.

25Y
Calcareous mica schist.

26Y (132.400)
Iron stained amphibolite.

27Y (135.398)
Amphibole with pyrite.

28Y (127.392)
Calc amphibolite with pyrite.

29Y (144.384)
Actinolite schist with pyrite.

30Y (137.397)
Mica schist.

31Y (148.409)
Amphibolite with pyrite.

32Y (149.400)
Actinolite/tremolite marble with pyrite.

33Y (120.416)
Biotite marble.

34Y (129.389)
Non calc amphibolite.

35Y (133.385)
White marble.

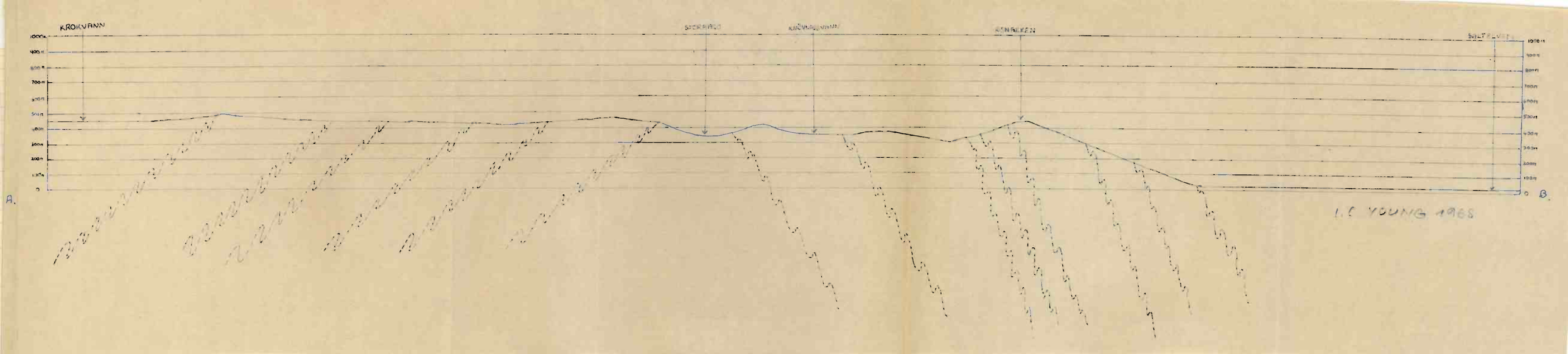
36Y (123.418)
Micaceous marble.

37Y (100.434)
Non calc mica schist.

38Y (146.385)
Actinolite marble.

39Y (148.394)
Tremolite marble.

40Y (150.417)
Calc amphibolite.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SKORVATN
KRÅKVASSVATN
KONGSVEIEN
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A.
B.
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