



# Bergvesenet

Postboks 3021, N-7441 Trondheim

## Rapportarkivet

Bergvesenet rapport nr <b>4731</b>	Intern Journal nr	Internt arkiv nr	Rapport lokalisering	Gradering <b>Åpen</b>
Kommer fra ..arkiv	Ekstern rapport nr	Oversendt fra	Fortrolig pga	Fortrolig fra dato:
Tittel Short description to preliminary geological map of Aamotsdalshytta				
Forfatter Wheeler, Russel		Dato    År 22.08 1967	Bedrift (Oppdragsgiver og/eller oppdragstaker) Folldal Verk AS Princeton University	
Kommune Dovre Oppdal Sunndal	Fylke Sør-Trøndelag Hedmark Møre og Romsdal	Bergdistrikt	1: 50 000 kartblad 15194 14191	1: 250 000 kartblad Røros Ålesund
Fagområde Geologi	Dokument type		Forekomster (forekomst, gruvefelt, undersøkelsesfelt)	
Råstoffgruppe Malm/metall	Råstofftype			
Sammendrag, innholdsfortegnelse eller innholdsbeskrivelse Geologisk og strukturgeologiske kart i original sammen med kortfattet bergartsbeskrivelse fra områden nord for Dovrefjell og like nord for Snøhetta.				

Russell L. Wheeler  
 Dept. of Geology  
 Princeton University  
 Princeton, New Jersey  
 08540  
 U.S.A.  
 19 Sept. 1967

Geolog H. Heim  
 Folldal Verk  
 Folldal  
 Norge

Dear Mr. Heim:

Here is the map I said I would send you. It is a generalized copy of my field map, which I showed you when I was in Folldal this past August. I haven't put very much information on this copy, but it should give an idea of the territory I worked in. The area on this map is in the northwest corner of the Dovrefjell 1:100,000 rectangle and in the southwest corner of the Oppdal 1:100,000 rectangle.

For simplicity I've put only four of my units on the enclosed map. (They, and most of my other units as well, were first mapped and named by William Scott, the American who just finished working between my area and Lesja.) From top to bottom, they are  
B: Blåne Group, interbedded plagioclase-biotite-quartz-hornblende schist and hornblende-plagioclase-quartz-garnet gneiss, generally recognized in outcrop by a brownish-gray color, a pitted appearance, and abundant garnets, but often grading downwards into gray, foliated biotite and two-mica schists and gneisses without garnet.  
 Age: Cambro-Silurian or Cambro-Ordovician.

Gb: Bukonhø Formation of the Gjevilvatn Group, light-colored, well-foliated quartz-muscovite-feldspar-hematite schist and quartzite. Mineral proportions may vary, but thickness less than about 20 meters, almost complete absence of dark minerals, and blue-gray hematite are usually characteristic of the unit.  
 Age: probably Eocambrian.

Gg: Gasbu Formation of the Gjevilvatn Group, a heterogeneous collection of biotite gneisses, generally plagioclase-quartz-biotite-epidote, with some layers of amphibolite, some layers of augen gneiss. Epidote is more common in the darker layers. Often the upper Gg is massive, non-banded gneiss, with the lower Gg often finely foliated and strongly banded with respect to biotite content. Age: probably Eocambrian.

H: Hatten Formation of the Gjevilvatn Group, almost identical to Gb but finer grained. Age: uncertain, but probably Eocambrian. The Hatten is of uncertain age relationship to the Gb and the Gg.

The above stratigraphy is abstracted from Scott's thesis for the most part, but I've verified that it holds in my area as well. These rocks are well exposed in a complete section in two places:

on the trail from Leirpullskardet down to Åmotsdalshytta, and on the trail from the northeast end of Langvassdalen down between Drugshøggi and Larseggi into Åmotsdalen. The Leirpullskardet section does not include Hatten rocks; the B-H contact is somewhere to the south, perhaps on the far wall of Stropplsjødalen.

The map pattern is generally as I have shown it on the map. A solid line is a definitely observed contact; a dashed line (---) is a covered contact that is well-located by exposures of the rocks on both sides of it; a dotted line (...) is an inferred contact which is roughly located. The red line is the Bukonhø itself, and the black pencil line is the contact between Blåhø and Hatten rocks, a contact which Scott has shown to be a thrust contact, at least in this region. There are several more units west of the Bukonhø as I have drawn it on the map, but their contacts are less certain and I have left them out for simplicity's sake. In pencil, I have included some dip-and-strike symbols. The general structure of the area as so far mapped is that of a synform formed about a gently-plunging southwest axis; to the northeast in the area mapped, for example in the folds in the Gb between Leirpullskardet and Sætertangen, the axes plunge more steeply to the southwest, and I have been told that atop Åmotshytten 1. they are nearly vertical. The stratigraphy in this major synform is overturned. The northern several kilometers of the Gb, in the Urvatn area, ~~Q<sub>1</sub>~~ involved in a series of repeated isoclinal folds which I have not yet mapped in detail; the contacts which I do have are on the map. A plot of about 100 foliations from the entire area mapped show a regional axis plunging gently to the southwest.

I will probably not work in the Hatten rocks south of the contact shown on the map (that is, south of Langvassdalen). I may want to work several kilometers to the east (for example, north of Reinheim) and to the northeast (up Åmotsdalen). I will definitely be working to the north, northwest, and west as far as time allows. I am bounded on the southwest by Scott's area, which comes north to about  $62^{\circ}20'$  and east to the ends of the contacts shown on my map at the southwest end of Drugshø.

Thus I should not be in any danger of colliding with any other workers in the area. As I recall, you and your co-workers have worked to the south and southeast of this area. Please let me know if this does intrude on anyone.

This information and the map are sketchy and incomplete, but they give some idea of where I have worked and where I plan to work. I wish you a pleasant winter; I'm not sure whether I prefer your cold or the rain we have all winter long here!

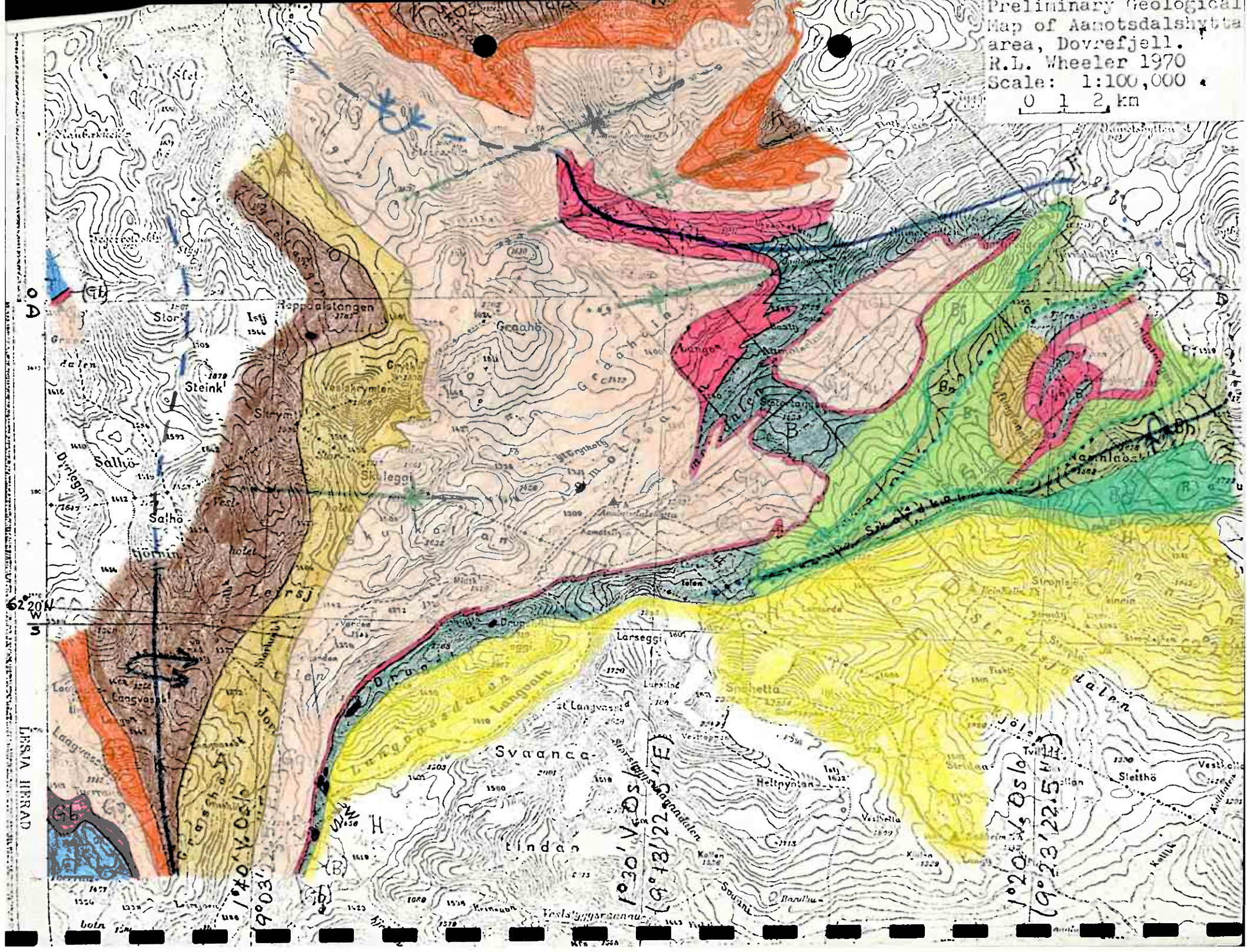
Sincerely,

*Russ Wheeler*

Russell L. Wheeler



Preliminary Geological  
Map of Aanotsdalshytta  
area, Dovrefjell.  
R.L. Wheeler 1970  
Scale: 1:100,000  
0 1 2 km





# LEGEND

- ▲ turisthyttes, private hyttes
- O/D boundary between 1:100,000 Oppdal quadrangle 42A (to north) and 1:100,000 Dovrefjell quadrangle 37C (to south)
- W/S boundary between map area of W.H. Scott (1967) (to south and west) and this project (to north and east)

Stratigraphy: (formation names are from Scott (1967))

	Blåhø Group (undifferentiated) (Cambro-Silurian?)		Tveraatind Group (undifferentiated (Cambro-Silurian?))
	ultra-mafic body within Blåhø		
	Nyseter Formation (bi-gar schists)		
	Sjongseter Formation (amphibolites)		
	Jori Formation (bi-gar schists, bi schists)		
	Gjevilvatn Group (Eocambrian?)		
	Bukonhø Formation (f'spar>qtz>musc>hem flaggy schists and quartzitic gneisses)	Unless specified, of unknown age relationship to Gb, Gg, and Gs:	
	Gåsbu Formation (heterogeneous bi and bi+musc schists and gneisses, some amphibolites)		
	Sorhella Formation (f'spar>qtz>musc>hem flaggy schists and quartzitic gneisses)		
	mafic body within Gg		
	massive augen gneiss unit(s), variable matrix. In west, presumed correlative with Gs		
	Hatten Formation (f'spar>qtz>musc> hem flaggy schists and quartzitic gneisses)		

Geologic contacts shown on cross sections

— constructed from observed surface geology

- - - projected from nearby cross sections or surface geology

..... inferred

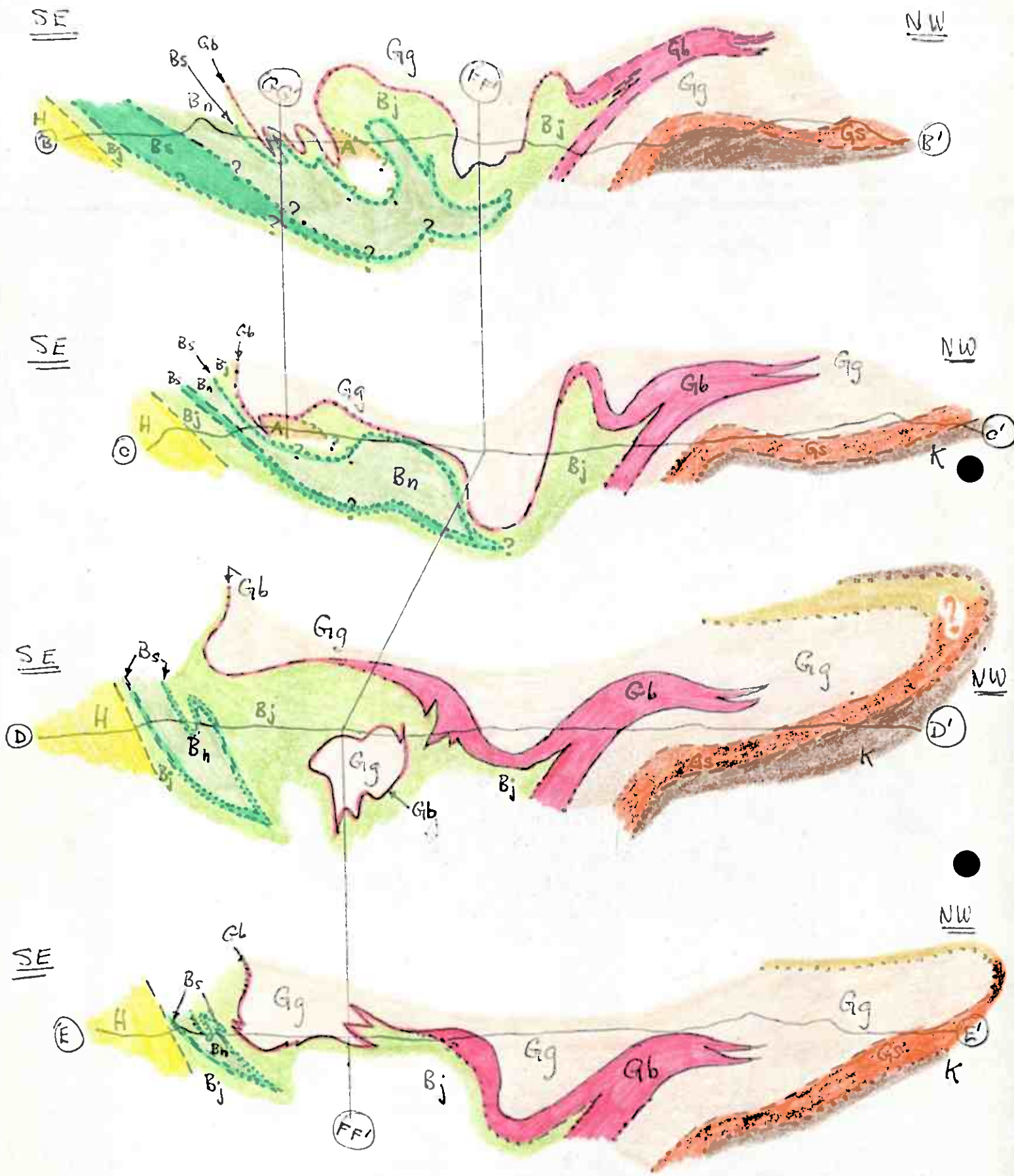
Geologic contacts shown on map:

— observed or covered

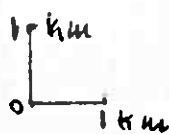
..... hypothesized

F<sub>1</sub> axial surface

F<sub>2</sub> axial surface



Scale: 1:100,000  
no vertical exaggeration



The work to which the N.G.U. generously contributed support during the summer of 1969 was the third and final field season spent on the detailed mapping and structural analysis of an area of approximately 350 km<sup>2</sup> of medium-grade metamorphic terrain in the Stropplsjødalen-Aamotsdalen-Skiraadalen-Gruvedalen tract of Dovrefjell. The area roughly centers on 62°20'N, 9°15'E Greenwich. It lies within the infrastructural "Basal Gneiss Region", ten to fifteen kilometers west of the border with the suprastructural Trondheim Basin.

In agreement with Scott (1967) and other previous workers in the region, the rocks are preliminarily assigned to eight Formations in three Groups. The Groups are probably of pre-Caledonian, Eocambrian, and Cambro-Ordovician ages. The rocks are metasedimentary and probable metavolcanic gneisses and schists, distinguished in the field by presence and absence of biotite, muscovite, amphibole, hematite, garnet, and epidote(?). Augen gneisses are ubiquitous.

Minor structural evidence indicates one isoclinal folding (F1), followed by one sub-isoclinal folding (F2) and one less ductile phase of folding (F3). F3 produced chevron folds (F3C) and discon (concentric, disharmonic) folds (F3D). F1, F2, F3C, and F3D fold types have been recognized, distinguished, and classified using the method of style elements as developed by Hansen (1962, 1970(?)).

Major structures support this interpretation and consist chiefly of a major recumbent F1 syncline refolded by a series of F2 synforms and F2 antiforms. Two major interference structures were produced by refolding of F2 structures by F3. Almost without exception, all major and minor fold axes and mineral lineations associated with all three foldings plunge shallowly southwest.

After further work on petrography, petrology, structural analysis, and regional structural interpretation and correlation, this doctoral dissertation will probably be completed in the late spring of 1971, at which time a copy of the completed thesis and accompanying maps will be sent to the N.G.U.

---

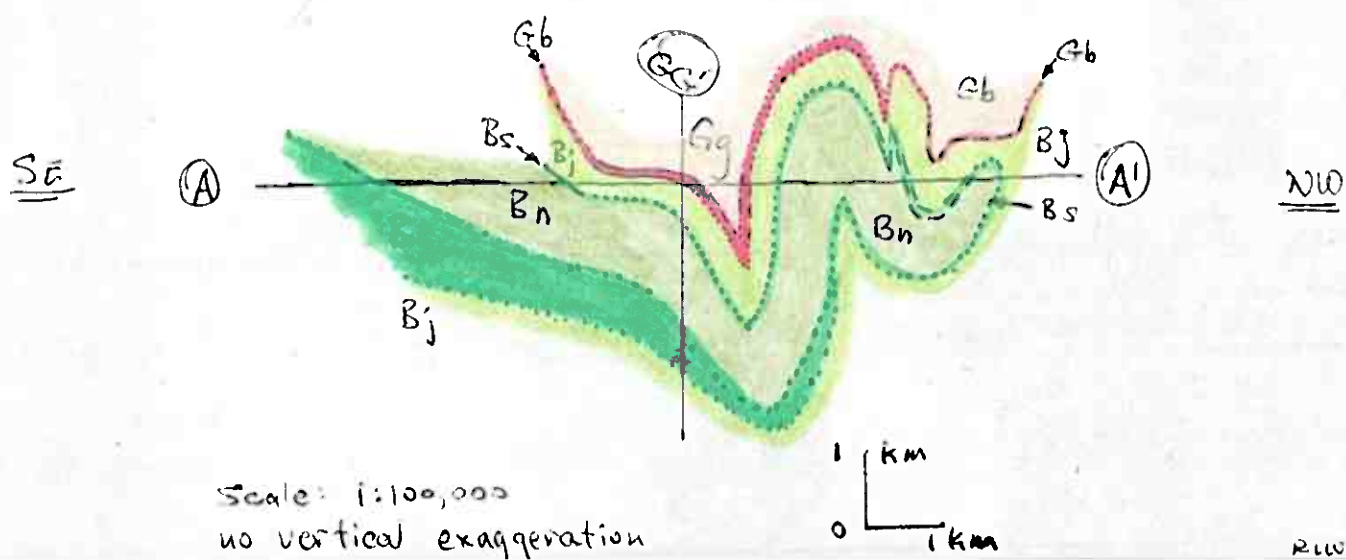
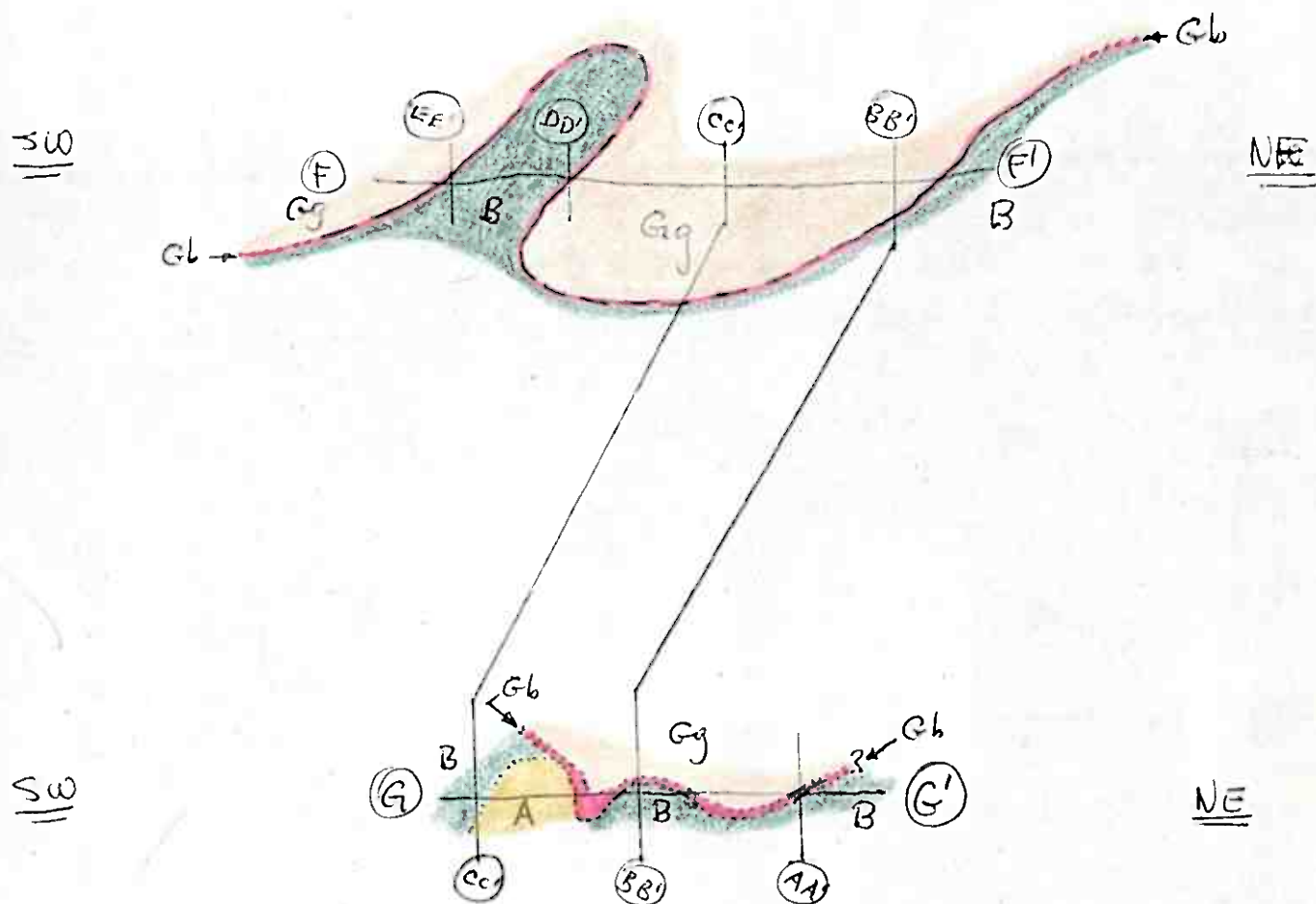
Scott, W.H., 1967, Evolution of folds in the metamorphic rocks of western Dovrefjell, Norway: unpub. doctoral dissertation, Dept. of Geology, Yale University, 111 p.

Hansen, E.C., 1962, Strain facies of the metamorphic rocks in Trollheimen, Norway: unpub. doctoral dissertation, Dept. of Geology, Yale University, 206 p.

Hansen, E.C., 1970(?), Strain facies: to be published by Springer Verlag.

*Russell Wheeler*







223



1040

1030

1201