RECONNAISSANCE GEOLOGICAL MAP OF THE AHLMANNRYGGEN AREA, WESTERN DRONNING MAUD LAND, ANTARCTICA

Sheet 1 of a series of 3

South African National Antarctic Expeditions.
South African Scientific Committee for Antarctic Research (SASCAR).

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GEOLOGICAL LEGEND

FOR

SHEET 1—AHLMANNRYGGEN
SHEET 2—BORGMASSIVET
SHEET 3—KIRWANVEGGEN

SATELLITE IMAGE MAP
1:250 000

SEDIMENTARY AND VOLCANIC ROCKS

MESOZOIC

- Mk — Basaltic lava flows and minor intercalated sandstones — KIRWANVEGGEN FORMATION

PALAEOZOIC

- AMELANG FORMATION (Pza) — Buff-coloured sandstones and calcareous sandstones; pink, brown and gray quartzites — Pza
- URF-JELL GROUP (PzU)
  - URNOSSA FORMATION
  - TUNGA FORMATION
  - UVEN FORMATION
  - Greenish siliceous quartzites and conglomerates with minor reddish-brown mudstones — PzU

PRECAMBRIAN

Last major metamorphic event—C 1000 Ma (see below)

- AHLMANNRYGGEN GROUP
  - RAUDBERGET FORMATION (p-€r) — Dark red quartzites and subordinate siliceous red mudstones and shales; minor conglomerates and tuffs — p-€r
  - JEKSELEN FORMATION (p-€j) — Buff-coloured sandstones and calcareous sandstones; pink, brown and gray quartzites — p-€j
  - HÖGFONNA FORMATION
    - GÖSTAPIGGANE MEMBER (p-€hg)
    - HÖGFONNAKSLA MEMBER (p-€hh)
    - VETEN MEMBER (p-€hv)
    - Pinkish-gray to greenish, purplish red, dark brown and gray quartzites and arkoses; subordinate greenish, grayish and dark brown to purplish brown mudstones and shales; minor conglomerates and tuffs — p-€hg, p-€hh, p-€hv
  - SCHUMACHERFJELLET FORMATION (p-€sh) — Yellowish-gray, to cream-coloured quartzites and arkoses, alternating with brown, black and purple siliceous siltstone — p-€sh
  - FRAMRYGGEN FORMATION (p-€f) — Alternating gray to greenish-gray graywackes and quartzites, and purplish-brown, violet black and gray-green siltstones and shales — p-€f
  - PYRAMIDEN FORMATION (p-€p) — Greenish-gray to dark gray feldspathic graywackes, intercalated dark siltstones, minor shales and mud-pebble conglomerates — p-€p
  - Andesitic lavas and pillow lavas with minor intercalated quartzites — STRAUMSNUTANE FORMATION (p-€ s)
  - Andesitic lavas and pillow lavas; subordinate agglomerates and minor tuffs — FASETTFJELLET FORMATION (p-€fa)
  - Quartzites, tuffaceous quartzites, subordinate agglomerates and tuffs (p-C I)
  - Grayish to reddish-brown agglomerates (p-C I)
  - ISTIND FORMATION (p-€i) — VIDDALEN SUBGROUP
  - TINDEKLYPA FORMATION (p-€t) — VIDDALEN SUBGROUP
  - JUTULSTRAUMEN GROUP

INTRUSIVE ROCKS

- BORGMASSIVET INTRUSIVES
  - Doleritic and dioritic sills and minor dykes; irregular periodotitic bodies (Robertskollen suite); irregular syenitic and granodioritic bodies (Nils Jørgensnutane suite) — p-€b

METAMORPHIC ROCKS

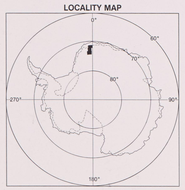
- SVERDRUPFJELLA GROUP
  - Metadiorites, metagabbros and charnockite — p-€sd
  - Migmatites — p-€sm
  - Leucogneisses, garnet-biotite plagiogneisses, hornblende plagiogneisses, augen gneisses, amphibolites and calc-silicate lenses — p-€sg

EXPLANATION OF THE STRATIGRAPHIC COLUMN

1. The stratigraphic column attempts to show field relationships and correlations in a graphic format.
2. Where definite and conformable contacts between formations occur in the field, they have been shown as such in the column. Presumed contacts and unconformable contacts, as well as presumed facies changes giving rise to different formations, are shown by spaces between blocks in the column.
3. The lengths of blocks representing individual formations in the column do not necessarily reflect their thicknesses, but rather the times, relative to other formations, during which deposition took place.
4. The position of the metamorphic rocks in the column does not imply that they are stratigraphically older than the rocks of the Ahlmannryggen Group, members of which may, together with older crystalline rocks, have been involved in the c.1000 Ma metamorphic event shown by the rocks of the Sverdrupfjella Group.
5. The intrusive rocks are shown in the column adjacent to the main one in their deduced positions in the time scale. The horizontal and downward pointing arrows indicate that the igneous episodes were responsible for both intrusive and extrusive activity.

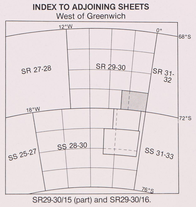
- 25 — Strike and dip of bedding
- Syncline in bedding
- Anticline in bedding
- 50 — Strike and dip of foliation
- Synform in foliation
- Antiform in foliation
- Fault

LOCALITY MAP



INDEX TO ADJOINING SHEETS

West of Greenwich



SR29-30/15 (part) and SR29-30/16.

Sheet numbering system based on International Map of the World. The area covered by this map is shaded.

SCALE 1:250 000

5000m 0 5 10 15 20 25km

Elevations (spot heights) in metres

OTHER MAPS IN THIS SERIES ARE:

Sheet 2 Borgmassivet, SS 28-30/3 (part) and SS 28-30/4 (part).
Sheet 3 Kirwanveggen, SS 28-30/7 (part), SS 28-30/8 (part), SS 28-30/11 (part) and SS 28-30/12 (part).

LAMBERT CONFORMAL CONICAL PROJECTION, STANDARD PARALLELS 68° 40'S and 71° 20'S

BASE MAP COMPILED FROM:

1. Computer integrated Landsat 1 and 2 imagery, prepared by O.G. Malan and A.S. van Zyl, National Physical Research Laboratory, Council for Scientific and Industrial Research, Pretoria.
2. Dronning Maud Land, 1:250 000 maps F5, Giaeveryggen and G5, Ahlmannryggen, published by Norsk Polarinstitutt, Oslo, 1962.

GEOLOGY MAPPED BY:

V. von Brunn, 1960
B.C. Butt, 1961
D.C. Neethling, 1962
O. Langenegger, 1963
H.A. Bastin, 1966
B.R. Watters, 1968
A.P.H. Aucamp, 1968
H. Kahle, 1970
D. Vaclavik, 1970
J.H. Bredell, 1971
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