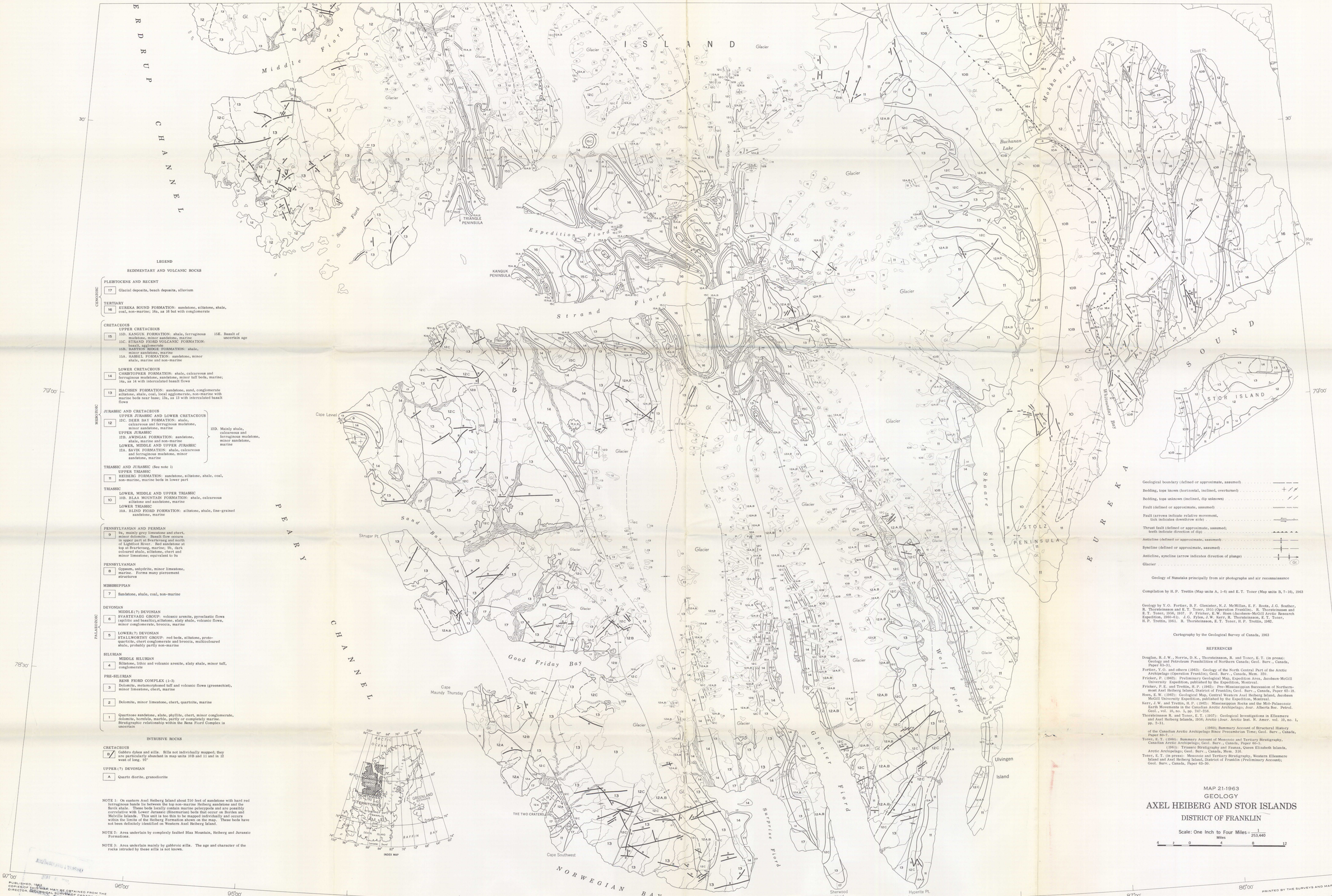

LEGEND

SEDIMENTARY AND VOLCANIC ROCKS

CENOZOIC

PLEISTOCENE AND RECENT

17 — Glacial deposits, beach deposits, alluvium

TERTIARY

16 — EUREKA SOUND FORMATION: sandstone, siltstone, shale, coal, non-marine; 16a, as 16 but with conglomerate

MESOZOIC

CRETACEOUS

UPPER CRETACEOUS

15 — 15D. KANGUK FORMATION: shale, ferruginous mudstone, minor sandstone, marine
15C. STRAND FIORD VOLCANIC FORMATION: basalt, agglomerate
15b. BARTON RIDGE FORMATION: shale, minor sandstone, marine
15A. HASSEL FORMATION: sandstone, minor shale, marine and non-marine

15E. Basalt of uncertain age

LOWER CRETACEOUS

14 — CHRISTOPHER FORMATION: shale, calcareous and ferruginous mudstone, sandstone, minor tuff beds, marine; 14a, as 14 with intercalated basalt flows

13 — ISACHSEN FORMATION: sandstone, sand, conglomerate siltstone, shale, coal, local agglomerate, non-marine with marine beds near base; 13a, as 13 with intercalated basalt flows

JURASSIC AND CRETACEOUS

12 — UPPER JURASSIC AND LOWER CRETACEOUS
12C. DEER BAY FORMATION: shale, calcareous and ferruginous mudstone, minor sandstone, marine
UPPER JURASSIC
12B. AWINGAK FORMATION: sandstone, shale, marine and non-marine
LOWER, MIDDLE AND UPPER JURASSIC
12A. SAVIK FORMATION: shale, calcareous and ferruginous mudstone, minor sandstone, marine

12D. Mainly shale, calcareous and ferruginous mudstone, minor sandstone, marine

TRIASSIC AND JURASSIC (See note 1)

UPPER TRIASSIC

11 — HEIBERG FORMATION: sandstone, siltstone, shale, coal, non-marine, marine beds in lower part

TRIASSIC

LOWER, MIDDLE AND UPPER TRIASSIC

10 — 10B. BLAA MOUNTAIN FORMATION: shale, calcareous siltstone and sandstone, marine
LOWER TRIASSIC
10A. BLIND FIORD FORMATION: siltstone, shale, fine-grained sandstone, marine

PALAEOZOIC

PENNSYLVANIAN AND PERMIAN

9 — 9a, mainly grey limestone and chert, minor dolomite. Basalt flow occurs in upper part at Svartevaeg and north of Lightfoot River. Red sandstone at top at Svartevaeg, marine; 9b, dark coloured shale, siltstone, chert and minor limestone; equivalent to 9a

PENNSYLVANIAN

8 — Gypsum, anhydrite, minor limestone, marine. Forms many piercement structures

MISSISSIPPIAN

7 — Sandstone, shale, coal, non-marine

DEVONIAN

MIDDLE(?) DEVONIAN

6 — SVARTEVAEG GROUP: volcanic arenite, pyroclastic flows (spilitic and basaltic), siltstone, slaty shale, volcanic flows, minor conglomerate, breccia, marine

LOWER(?) DEVONIAN

5 — STALLWORTHY GROUP: red beds, siltstone, proto-quartzite, chert conglomerate and breccia, multicoloured shale, probably partly non-marine

SILURIAN

MIDDLE SILURIAN

4 — Siltstone, lithic and volcanic arenite, slaty shale, minor tuff, conglomerate

PRE-SILURIAN

RENS FIORD COMPLEX (1-3)

3 — Dolomite, metamorphosed tuff and volcanic flows (greenschist), minor limestone, chert, marine

2 — Dolomite, minor limestone, chert, quartzite, marine

1 — Quartzose sandstone, slate, phyllite, chert, minor conglomerate, dolomite, hornfels, marble, partly or completely marine. Stratigraphic relationship within the Rens Fiord Complex is uncertain

INTRUSIVE ROCKS

CRETACEOUS

B — Gabbro dykes and sills. Sills not individually mapped; they are particularly abundant in map units 10B and 11 and in 12 west of long. 92°

UPPER (?) DEVONIAN

A — Quartz diorite, granodiorite

NOTE 1: On eastern Axel Heiberg Island about 250 feet of sandstone with hard red ferruginous bands lie between the top non-marine Heiberg sandstone and the Savik shale. These beds locally contain marine pelecypods and are possibly correlative with Lower Jurassic (Sinemurian) beds that occur on Borden and Melville Islands. This unit is too thin to be mapped individually and occurs within the limits of the Heiberg Formation shown on the map. These beds have not been definitely identified on Western Axel Heiberg Island.

NOTE 2: Area underlain by complexly faulted Blaa Mountain, Heiberg and Jurassic Formations.

NOTE 3: Area underlain mainly by gabbroic sills. The age and character of the rocks intruded by these sills is not known.

Geological boundary (defined or approximate, assumed)

Bedding, tops known (horizontal, inclined, overturned)

Bedding, tops unknown (inclined, dip unknown)

Fault (defined or approximate, assumed)

Fault (arrows indicate relative movement, tick indicates downthrow side)

Thrust fault (defined or approximate, assumed; teeth indicate direction of dip)

Anticline (defined or approximate, assumed)

Syncline (defined or approximate, assumed)

Anticline, syncline (arrow indicates direction of plunge)

Glacier (Gl)

Geology of Nunataks principally from air photographs and air reconnaissance

Compilation by H. P. Trettin (Map units A, 1-6) and E. T. Tozer (Map units B, 7-16), 1963

Geology by Y. O. Fortier, B. F. Glenister, N. J. McMillan, E. F. Roots, J. G. Souther, R. Thorsteinsson and E. T. Tozer, 1951 (Operation Franklin); R. Thorsteinsson and E. T. Tozer, 1956, 1957. P. Fricker, E. W. Hoen (Jacobsen-McGill Arctic Research Expedition, 1960-61). J. G. Fyles, J. W. Kerr, R. Thorsteinsson, E. T. Tozer, H. P. Trettin, 1961. R. Thorsteinsson, E. T. Tozer, H. P. Trettin, 1962.

Cartography by the Geological Survey of Canada, 1963

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MAP 21-1963
GEOLOGY

AXEL HEIBERG AND STOR ISLANDS

DISTRICT OF FRANKLIN

Scale: One Inch to Four Miles = $\frac{1}{253,440}$

Miles 4 2 0 4 8 12

PUBLISHED, 1963
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