GEOLOGICAL SURVEY OF CANADA
DEPARTMENT OF ENERGY, MINES AND RESOURCES

LEGEND

CENOZOIC (?) AND OLDER

QUATERNARY
PLEISTOCENE AND RECENT
29 — *Boulder clay; stratified sands, gravels, and clays; beach deposits; recent alluvial deposits*

TERTIARY (?) OR LATEST CRETACEOUS
? PRE-OLIGOCENE
28 — *? SOOKE INTRUSIONS: minor to ? medium-sized bodies of granite-porphyry, diorite-porphyry and holocrystalline gabbro; associated small dykes and sills (felsitic, porphyritic and amygdaloidal) of rhyolitic, dacitic and diabasic composition*

CRETACEOUS
EARLY UPPER CAMPANIAN
27 — *NANAIMO GROUP (CEDAR DISTRICT EQUIVALENTS ONLY): arkoses or arkosic sandstones dull brown, whitish grey or buff, fine to rarely coarse-grained, locally gritty; minor fine pebble conglomerate and grit interbeds near the base*

CENOMANIAN ? AND TURONIAN
26 — *UPPER SHALE UNIT: irregular interbedding of dark grey siltstone and shale with numerous concretions of calcareous shale and impure limestone; considerable interbeds of fine to coarse-grained greywacke and minor interbeds of grit and pebble conglomerate near the base*

ALBIAN
25 — *BLUMBERG FORMATION (new): pebble to boulder conglomerate, green-grey to brown, rich in clasts of Coast Intrusions; minor interbeds of grit, coarse to fine grained greywacke and arenaceous shale*

APTIAN
24 — *COARSE ARENITE UNIT: subgreywacke to subarkose (and some quartzose sandstone), light coloured, mostly coarse to medium grained, commonly gritty and pebbly, almost exclusively non-marine and locally carbonaceous to coaly; considerable dark grey, mostly fine grained and silty greywacke and similarly coloured strongly arenaceous siltstone; minor interbeds of grit and conglomerate, locally thin seams of coal*

LONGARM FORMATION (EQUIVALENTS IN UNNAMED GROUP) — COAL HARBOUR GROUP (INFR)

MID–TO LATE BARREMIAN
22 — *BARREMIAN FINE-GRAINED GREYWACKE UNIT: greywacke, dark grey to green-grey (or bluish grey) fine to very fine grained and silty, massive-looking, spheroidally weathering and containing numerous concretions, lenses and interbeds of lighter coloured calcareous greywacke; considerable similarly coloured sandy to very sandy siltstone; minor coarse grained greywacke, grit, and fine pebble conglomerate at the base*

LOWER BARREMIAN ? OR LATEST HAUTERIVIAN
21 — ***INOCERAMUS COLONICUS** CALCARENITES: bioclastic limestone dull to brown grey, fine to coarse; impure; considerable pods, lenses and interbeds of calcareous, arenaceous and/or pebbly shale; some calcareous greywacke, grit and fine pebble conglomerate; minor consedimentary breccia of bioclastic limestone and other rock types*

BARREMIAN ? AND LATEST HAUTERIVIAN
23 — *BARREMIAN VARIEGATED CLASTIC UNIT: irregular interbedding of various marine to non-marine, often arenaceous to coaly clastics ranging from dark grey siltstone through various greywacke and arkose to grit and pebble or boulder conglomerate; some thin seams of coal locally*

HAUTERIVIAN
19 — *HAUTERIVIAN SILTSTONE UNIT: siltstone, dark grey, more or less sandy, massive-looking; some similarly coloured, fine grained, silty greywacke; numerous small to large, usually fossiliferous concretions of limy siltstone or impure limestone*

LATE VALANGINIAN
18 — ***BUCHIA CRASSICOLLIS** GREYWACKE: greywacke, green-grey to dark grey, fine to medium grained, mostly more or less calcareous; minor interbeds, lenses and rows of concretions of strongly calcareous greywacke or arenaceous limestone; some grit and pebble conglomerate at the base*

LATE VALANGINIAN ? AND HAUTERIVIAN
20 — *LATE VALANGINIAN ? AND HAUTERIVIAN GREYWACKE-CONGLOMERATE UNIT: greywacke, grey to green, mostly coarse to medium grained and gritty to pebbly; similarly coloured pebble to boulder conglomerate, poorly rounded; minor interbeds of black to grey arenaceous siltstone and fine grained silty greywacke*

JURASSIC
MIDDLE JURASSIC
17 — *COAST INTRUSIONS (may include some undifferentiated ? Sooke intrusions): granodioritic, dioritic, and gabbroic, holocrystalline to coarse porphyritic intrusions, light grey to dark grey or dark green, with abundant xenoliths of Vancouver Group rocks; similar felsitic, porphyritic and amygdaloidal minor intrusions*

MESOZOIC

VANCOUVER GROUP

VOLCANIC DIVISION

LOWER JURASSIC
15 — *? PLIENSBACHIAN-TOARCIAN GREYWACKE UNIT: greywacke, blue grey to brown grey, coarse to fine-grained often tuffaceous, gritty and pebbly; considerable interbeds and lenses of grit and pebble conglomerate in the lower part; considerable interbeds of dark grey, arenaceous to tuffaceous marine argillite and black, carbonaceous to coaly, plant-bearing argillite in the upper part*

? PLIENSBACHIAN
14 — *? DARK-GREY VOLCANIC UNIT: lavas, dark grey, ? andesitic, strongly amygdaloidal to strongly porphyritic; some interbeds of similarly coloured pyroclastics*

SINEMURIAN
13 — *UPPERMOST SINEMURIAN ARGILLITE UNIT: argillite, black to grey, mostly pure, medium to heavily bedded; some arenaceous limestone, greywacke, and calcareous grit; locally some waterlain volcanic tuff*

12 — *UPPERMOST SINEMURIAN VOLCANIC UNIT: volcanic breccia, green-grey to brown, mostly coarse to medium and waterlain (pillow breccia); lavas, grey, green or speckled-lavender, intermediate, amygdaloidal to porphyritic, commonly rich in pillow structures; considerable mostly coarse and tuffaceous volcanic clastics*

11 — *MATTHEWS ISLAND FORMATION (new): argillite, light grey to black, mostly in,ermediate to heavily bedded, arenaceous and/or tuffaceous, mostly calcareous; minor interbeds of calcareous greywacke, arenaceous grey limestone, grit and fine pebble conglomerate; minor waterlain pyroclastics in the middle part*

? HETTANGIAN
10 — *GREY VOLCANIC UNIT: lavas and volcanic breccias, bluish grey to dull grey, intermediate, porphyritic to amygdaloidal, mostly rich in pillow structures; similarly coloured massive lavas and pyroclastics*

? HETTANGIAN
9 — *CHERTY LIMESTONE UNIT: limestone, dark grey to black, thinly bedded to laminated, mostly cherty and with numerous laminae, inclusions and interbeds of black to grey chert; minor interbeds of calcarenites, calcareous sedimentary clastics and waterlain pyroclastics*

UPPERMOST TRIASSIC AND LOWER JURASSIC
16 — *UNDIVIDED VOLCANIC DIVISION: the same rock types as in units 7 to 15 inclusive*

BONANZA SUBGROUP

? HETTANGIAN ? OR/AND OLDER
8 — *BASAL JURASSIC VOLCANIC UNIT: pyroclastics and lavas, lavender to maroon, intermediate to acidic, often rich in phenocrysts of pink to orange sodic plagioclase; pyroclastics, mostly coarse and unsorted to poorly sorted; variable amounts of dark grey to dark green pyroclastics and lavas*

UPPER TRIASSIC (?) AND OLDER
RHAETIAN ? AND/OR LATEST NORIAN
7 — *HECATE COVE FORMATION (new): irregular interbedding of blue-green to grey-green, waterlain (commonly with pillow structures) volcanic breccia with argillaceous and limy matrix, poorly rounded and sorted volcanic conglomerates, and consedimentary limestone breccia; variable amounts of thin-bedded, waterlain volcanic tuff, tuffaceous greywacke, tuffaceous argillite and impure limestone*

SEDIMENTARY DIVISION

LATE UPPER NORIAN
5 — *SUTTON FORMATION: limestone, grey to black, cryptocrystalline, pure to impure; mostly well bedded, contains considerable interbeds of massive to indistinctly and heavily bedded limestone; numerous interbeds of calcareous, dark grey to black argillite; some interbeds of calcareous greywacke and grit; some interbeds of waterlain volcanic tuff and breccia near the top*

LATE UPPER NORIAN
4 — *ARENACEOUS MEMBER: greywacke, green-grey to brown-grey, fine to coarse grained, tuffaceous; considerable interbeds of dark grey to black arenaceous and/or tuffaceous argillite; minor interbeds of grit, pebble conglomerate, and impure limestone; locally some interbeds of waterlain volcanic breccia and tuff*

NORIAN
3 — *THINLY BEDDED MEMBER: argillite, grey to black, mostly calcareous, tuffaceous and/or arenaceous, mostly thinly bedded; locally considerable interbeds of dark grey to black impure limestone; some fine grained greywacke; locally minor tuffaceous arenites*

UPPER KARNIAN AND NORIAN
2 — *QUATSINO FORMATION: limestone, light grey to black, cryptocrystalline to coarse crystalline, pure to impure, massive to thinly bedded; variable but minor volcanics; minor calcareous argillites near the top*

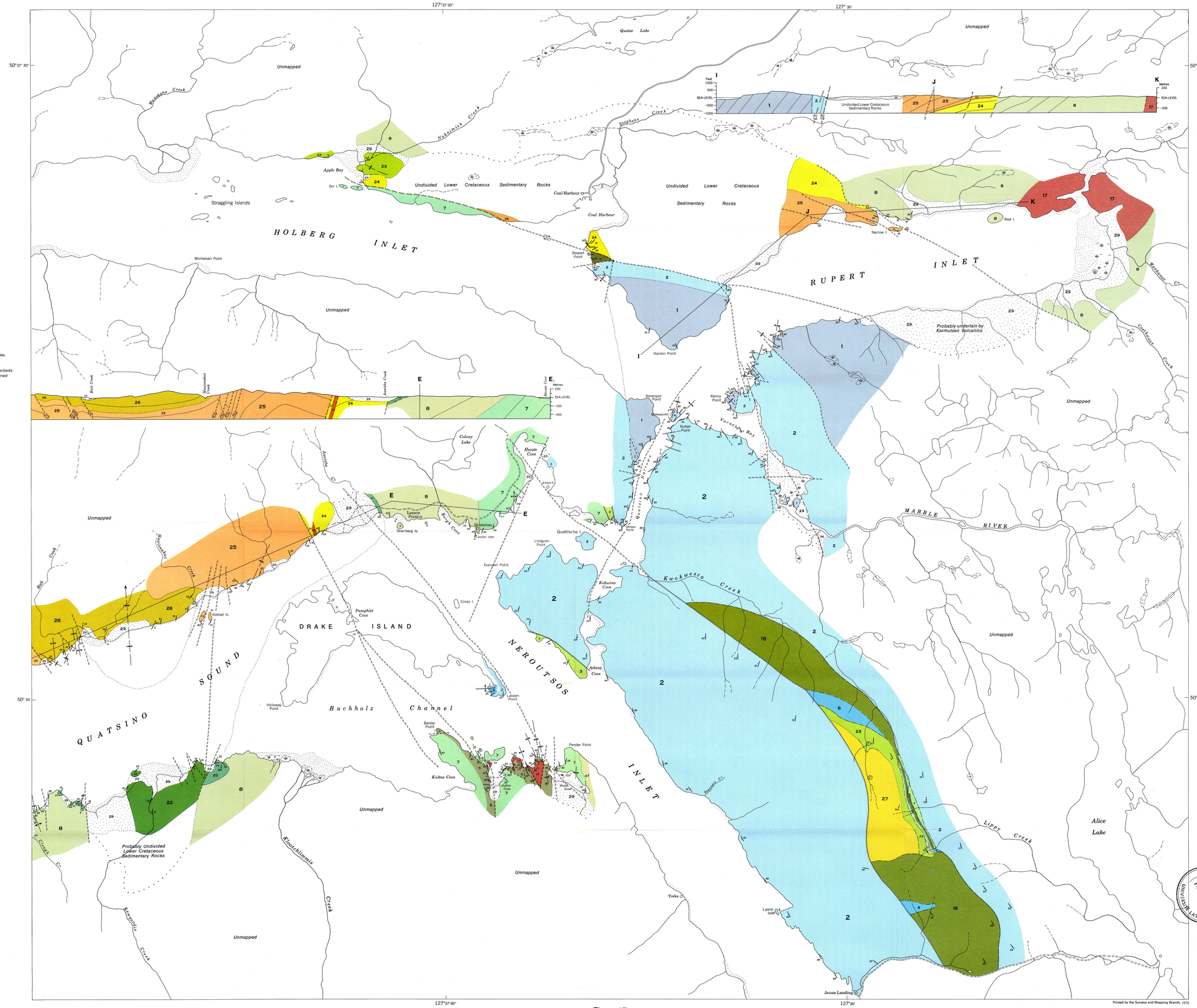
UPPER KARNIAN AND NORIAN
6 — *UNDIVIDED SEDIMENTARY DIVISION: includes all rock types listed in units 2 to 5*

KARNIAN AND ? OLDER
1 — *KARMUTSEN SUBGROUP (UNDIVIDED): lavas, dark green to dark grey, porphyritic to amygdaloidal ? basic; minor waterlain pyroclastics; minor tuffaceous limestone*

Geology by J.A. Jeletzky 1953, 1954 and 1968, 1969

To accompany Bulletin 242 by J.A. Jeletzky

Geological cartography by the Geological Survey of Canada



REFERENCE

- *Geological boundary (defined, approximate, assumed)*
- *Bedding, tops known (inclined, vertical, overturned)*
- *Bedding, tops unknown (vertical)*
- *Fault (defined, approximate, assumed)*
- *Fault (inclined, vertical)*
- *Fault (solid circle indicates downthrow side, arrows indicate relative movement)*
- *Fault zone*
- *Anticline (defined, approximate, arrow indicates direction of plunge)*
- *Syncline (defined, approximate, arrow indicates direction of plunge)*
- *Fossil locality*

Figure 17

Mesozoic and ? Tertiary rocks of Quatsino Sound, British Columbia.

Approximate Scale 1:31,680
1 inch to ½ mile

Miles 1 0 1 Miles
Kilometres 1 0 1 2 Kilometres

INDEX MAP

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