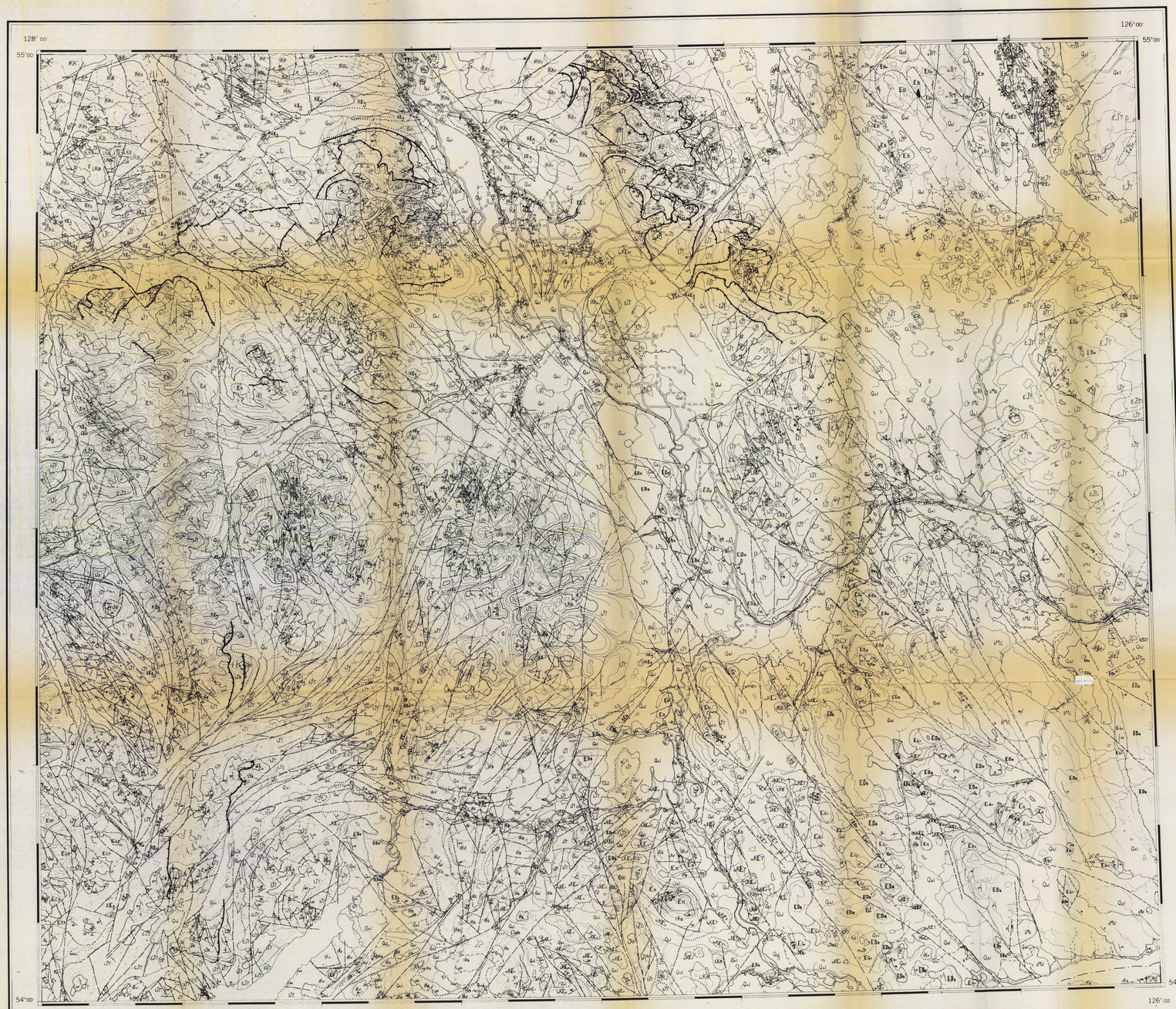

SMITHERS B.C. 93L

Scale 2 1 0 4 MI.

G.S.C.

SMITHERS MAP LEGEND

SEDIMENTARY AND VOLCANIC ROCKS

CENOZOIC

QUATERNARY
PLEISTOCENE AND RECENT
Qal — alluvium, till, gravel

TERTIARY
UPPER TERTIARY
JPb — POPLAR BUTTE VOLCANICS: olivine basalt

ENDAKO GROUP
OLIGOCENE(?) and LOWER MIOCENE
iMc — CHINA NOSE BRECCIAS: coarsely bedded glassy basaltic breccia, rare vesicular basalt, waterlain sediments interbedded near base

EOCENE AND(?) OLIGOCENE
EwB — BUCK CREEK VOLCANICS: massive, vesicular, or amygdaloidal hyalitic andesite, dacite flows and breccias; minor basalt and sediments

CRETACEOUS AND TERTIARY
OOTSA LAKE GROUP
EOCENE
Eg, En — Eg. GOOSLY LAKE VOLCANICS: trachytic flows and sills
En. Newman volcanics: dacitic to rhyolitic breccias and flows

MAESTRICHTIAN TO EOCENE
uKEv — dacitic volcanics undivided; rhyolite and dacite flows, tuffs, and breccias; minor andesite; related felsite and porphyry intrusions

MAESTRICHTIAN TO(?) EOCENE
uKET — TEPITOPHILL VOLCANICS: biotite-hornblende andesite and andesitic dacite flows and fragmental rocks

SUSTUT GROUP(?)
PALEOCENE AND EOCENE
PEs — shale, acid tuff; minor greywacke, coal, conglomerate

MAESTRICHTIAN AND/OR OLDER
uKs — greywacke, conglomerate, shale

MESOZOIC

CRETACEOUS
SKEENA GROUP
ALBIAN AND/OR YOUNGER
iKs, iKv — iKs. BRIAN BORU FORMATION: vari-coloured porphyritic tuff, breccia, and flows
iKv. mainly coarse breccias of andesitic to dacitic composition

MIDDLE ALBIAN (mainly or entirely)
iKR, iKv — iKR. RED ROSE FORMATION : black to dark grey shale, chert pebble conglomerate; minor micaceous greywacke.
iKs. micaceous greywacke, black to dark grey shale; minor conglomerate and coal

HAUTERIVIAN(?) TO ALBIAN(?)
iKRv — Rocky Ridge volcanics: dark green to rusty brown augite porphyry flows and breccias, rusty red tuff, and breccia, hornblende-p... andesitic lava flows

HAUTERIVIAN TO(?) ALBIAN
iKKs — Kitsun Creek sediments: coarse to fine polymictic conglomerate, greywacke, dark grey shale, coal; minor rusty red tuff related to Rocky Ridge volcanics

JURASSIC
BOWSER LAKE GROUP
UPPER OXFORDIAN TO (?) KIMMERIDGIAN
uJv — Netalzul volcanics: grey to green basaltic to andesitic tuff, breccia and flows

UPPER OXFORDIAN
uJs — Trout Creek Assemblage: greywacke, conglomerate, siltstone, coquinoid limey greywacke or siltstone

UPPER BAJOCIAN TO LOWER OXFORDIAN
muJA — ASHMAN FORMATION: dark grey to black shale, quartzose sandstone, greywacke, and chert pebble conglomerate

HAZELTON GROUP
LOWER BAJOCIAN TO LOWER CALLOVIAN
muJs — SMITHERS FORMATION: grey-brown greenish-grey to drab grey greywacke, lithic sandstone, siltstone, shale, tuff breccia, grit, glauconitic sandstone; minor conglomerate

LOWER PLIENSBACHIAN TO MIDDLE TOARCIAN(?)
iJN — NILKITKWA FORMATION: dark grey shale, andesitic to rhyolitic tuff; minor greywacke

MIDDLE TOARCIAN(?)
iJR — NILKITKWA FORMATION
RED TUFF MEMBER: red to brick red, fine-grained, tuff and fine breccia.

SINEMURIAN AND(?) LOWER PLIENSBACHIAN
iJT — TELKWA FORMATION: variegated red, maroon, grey green breccia, tuff, and flows of basaltic to rhyolitic composition

HETTANGIAN AND/OR SINEMURIAN
... — ... grey banded shale

TRIASSIC
TAKLA GROUP
KARNIAN AND/OR NORIAN
uJRT — dark green augite porphyry flows, breccia and tuff, dark grey shale; minor conglomerate

PERMIAN
P — limestone
PERMIAN AND/OR OLDER
Ps — shale, quartzite, limestone; related metamorphic rocks

PALEOZOIC

INTRUSIVE ROCKS

TERTIARY
EOCENE
Eg — GOOSLY LAKE INTRUSIONS: syenomonzonite and porphyritic gabbro.
Eb — BABINE INTRUSIONS: biotite-feldspar porphyritic granodiorite or quartz diorite
En — BANIXA INTRUSIONS: quartz monzonite, felsite, in part porphyritic
EOCENE AND OLDER
Ecp — COAST PLUTONIC COMPLEX: quartz-diorite
LATE CRETACEOUS
LKb — BULKLEY INTRUSIONS: porphyritic granodiorite and quartz monzonite
LATE CRETACEOUS AND EOCENE
KEu — undivided: quartz diorite, quartz monzonite and granodiorite, in part porphyritic, many small felsite plutons
JURASSIC
EARLY JURASSIC
EJT — TOPLEY INTRUSIONS (undivided): quartz monzonite, quartz diorite, granodiorite, monzonite
EJTr — TOPLEY INTRUSIONS (rhyolite phase): fine-grained pink to cream-coloured rhyolite or felsite

CENOZOIC / MESOZOIC

SYMBOLS

Geological boundary (approximate) ------

Drift boundary . . . . . .

Bedding (horizontal, inclined, vertical, overturned)

Faults and fault lineaments (approximate) — — — —

Thrust fault

Anticline

Syncline

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SOURCES OF INFORMATION

Published and unpublished reports and maps of B.C. Department of Mines and Petroleum Resources based on field work by B.N. Church 1970-72, K.C. Carter 1964-73 and R.V. Kirkham 1964-68

Field work by T.A. Richards 1970-71 and H.W. Tipper 1969-71

Compilation by H.W. Tipper 1976

SELECTED REFERENCES

Armstrong, J.E.
... Map, Paper 44-23

Carter, K.C.
1973: Geology of the Northern Babine Lake Area, B.C.; Dept. of Mines and Petroleum Resources, Prelim. Map No. 12.
1974: Geology and Geochronology of Porphyry Copper and Molybdenum Deposits in West-Central British Columbia; Univ. of British Columbia Phd. thesis

Church, B.N.
1973: Geology of the Buck Creek Area in Geology, Exploration and Mining in British Columbia 1972; Brit. Col. Dept. of Mines and Petroleum Resources; pp. 353-363

Frebold, H. and Tipper, H.W.
1973: Upper Bajocian - Lower Bathonian Ammonite Fauna and Stratigraphy of Smithers area, British Columbia; Can. Jour. Earth Sci., vol. 10, No. 7, pp. 1109-1131.
1975: Upper Callovian and Lower Oxfordian Ammonites from Southeastern Bowser Basin, British Columbia; Can. Jour. Earth Sci., vol. 12, No. 2, pp. 145-157

Hanson, G.
1925: Driftwood Creek Map-Area, Babine Mountains, British Columbia; Geol. Surv. ... Can., Sum. Rept. 1924, pt. A

Jones, R.H.B.
1926: Geology and Ore De... Districts, British ... 1925, pt. A

Kirkham, R.V.
1969: A Mineralogical a... Distribution of ... Columbia; Univ. ...

...sits of Hudson Bay Mountain, Coast ...lumbia; Geol. Surv. Can., Sum. Rept.

...d Geochemical Study of the Zonal ...es in the Hudson Bay Range, British ...f Wisconsin Doctoral thesis

1957a: The Telkwa Mining District, British Columbia; Geol. Surv. Can., Sum. Rept. 1906
1957b: Telkwa River and Vicinity; Geol. Surv. Can., Separate Report 988
1908: The Bulkley Valley, British Columbia; Geol. Surv. Can., Sum. Rept. 1907
1909: The Bulkley Valley and Vicinity; Geol. Surv. Can., Sum. Rept. 1908

Richards, T.A.,
1976: Takla Project; McConnell Creek East-Half Map-area; Geol. Surv. Can., in Report of Activities, Paper 76-1, pt. A

Richards, T.A. and Jeletzky, O.L.
1975: A preliminary study of the Upper Jurassic Bowser Assemblage in the Hazelton, west half, map-area, British Columbia; Geol. Surv. Can., Report of Activities, April to October, 1974, pp. 31-36

Sutherland Brown, A.
1960: Geology of the Rocher Deboule Range; B.C. Dept. Mines and Petroleum Resources, Bull. 43

Tipper, H.W.
1959: Revision of the Hazelton and Takla Groups of Central British Columbia; Geol. Surv. Can., Bull. 47.
1971: Smithers Map-area, British Columbia; Geol. Surv. Can., Rept. of Activities, Paper 71-1, pt. A; pp. 34-37

Tipper, H.W. and Richards, T.A.
In press: Jurassic Stratigraphy and History of North-Central British Columbia; Geol. Surv. Can., Bull.

ABSTRACT

The Smithers map-area is underlain mainly by the Lower and Middle Jurassic essentially volcanic Hazelton Group, by the Middle and Upper Jurassic mainly sedimentary Bowser Lake Group, by the volcanic and sedimentary Lower Cretaceous Skeena Group, and by the Tertiary volcanic Endako and Ootsa Lake Groups. The Early Jurassic Topley intrusions cut the lower part of the Hazelton Group and a variety of intermediate to acidic plutons of Late Cretaceous to Eocene age intrude most older units throughout the area. Structurally the area is dominated by a multitude of steep normal faults. Few contacts between map-units are unfaulted and these are mainly intrusive or contacts between younger map-units. Folding is common only in the few sedimentary units and is spatially and genetically related to the Eocene thrust faults.

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