DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

MISCELLANEOUS FIELD STUDIES
MAP MF-1874-B

LITHOTECTONIC TERRANE MAP OF WESTERN CANADA AND SOUTHEASTERN ALASKA

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This map is part of a folio of the lithotectonic terrane maps of the North American Cordillera, edited by N.J. Silberling and D.L. Jones. Other publications in this folio include U.S. Geological Survey Miscellaneous Field Studies Maps MF-1874-A, MF-1874-C, and MF-1874-D.

Base modified from U.S. Geological Survey
1:10,000,000, North America, 1982

Transverse Mercator projection, Central Meridian (100° west) scale factor equals 0.926

SCALE 1:2 500 000

50 0 50 100 150 200 250 MILES

50 0 50 100 150 200 250 KILOMETERS

DESCRIPTION OF MAP UNITS

POSTACCRETION COVER ROCKS

T TERTIARY ROCKS

TKu TERTIARY AND UPPER CRETACEOUS ROCKS

POSTAMALGAMATION OR POSTACCRETION BATHOLITHIC ROCKS

BATHOLITHIC ROCKS--granitic and gneissic rocks

POSTAMALGAMATION OVERLAP ASSEMBLAGES

Kum **UPPER AND MIDDLE CRETACEOUS ROCKS OF SPENCES BRIDGE AND KINGSVALE GROUPS**--Depositional on both the Quesnellia terrane and the southermost part of the Cache Creek terrane

Kl-Ju **LOWER CRETACEOUS AND UPPER JURASSIC ROCKS OF BOWSER BASIN**--Depositional only on the Stikine terrane but contains detritus from the Cache Creek terrane

GN **GRAVINA-NUTZOTIN BELT**--Upper Jurassic to mid-Cretaceous argillite and graywacke, intermediate and mafic volcanic rocks, and granitic to ultramafic intrusive rocks. Depositonal on the Alexander and Wrangellia terranes

ACCRETED TERRANES

[Arranged alphabetically by map symbol]

ARCTIC ALASKA TERRANE

AAN **NORTH SLOPE SUBTERRANE**--Precambrian to lower Paleozoic basement rocks unconformably overlain by Mississippian to Jurassic continental-margin deposits, all of which have undergone large-scale rotation or translation so that original facies transitions with strata of the North American miogeocline are disrupted

AX **ALEXANDER TERRANE, UNDIFFERENTIATED**--Schist and gneiss derived from feldspathic sediments, felsic to mafic volcanic rocks, and minor pelitic and carbonate rocks

AXA **ADMIRALTY SUBTERRANE**--Devonian and Mississippian basalt, carbonate rocks, and chert in fault contact with Ordovician flysch. Overlying Permian and Triassic rocks are in common with those of the Craig subterrane

AXC **CRAIG SUBTERRANE**--Pre-Ordovician metamorphic complex and Ordovician to Triassic mafic to felsic volcanic rocks and terriginous clastic and carbonate rocks. Paleozoic paleomagnetic data discordant with that of North America and indicative of a lower paleolatitude

AXN **ANNETTE SUBTERRANE**--Variably metamorphosed, Ordovician to Triassic intrusive, extrusive, clastic, and carbonate rocks; no known post-Middle Devonian Paleozoic strata

BR **BRIDGE RIVER TERRANE**--Disrupted, variably metamorphosed, Middle Triassic to Lower Jurassic chert, argillite, basalt, ultramafic rocks, and minor sandstone and carbonate rocks

BV **BARKERVILLE TERRANE**--Variably metamorphosed, possibly upper Proterozoic and Paleozoic pelite and grit, with minor volcaniclastic rocks, carbonate rocks, and conglomerate

CA **CASSIAR TERRANE**--Upper Precambrian to Devonian platformal carbonate rocks, sandstone, and graptolitic shale

CC **CACHE CREEK TERRANE, UNDIFFERENTIATED**--Disrupted Pennsylvanian and Permian chert, argillite, basalt, and carbonate and ultramafic rocks; local high-grade late Triassic blueschist. Permian faunas in all parts of the Cache Creek Group resemble those in Japan, China, Indonesia, and the Himalayan region and differ from coeval North American faunas. Paleomagnetic data from crosscutting Early Cretaceous pluton indicates more than 10° northerly shift with respect to North America

CCB **BONAPARTE SUBTERRANNE**--Melange having a matrix of Permian to Upper Triassic chert and argillite and blocks of chert, basalt, ultramafic rocks, and Middle Pennsylvanian to Lower Permian limestone

CCF **FRENCH RANGE SUBTERRANE**--Permian carbonate rocks overlying mafic or felsic volcanic rocks; interbedded Upper Triassic chert and graywacke present locally

CCM **MARBLE RANGE SUBTERRANE**--Mid- and Upper Permian shallow-water carbonate rock and minor basalt and chert; locally associated with Lower Triassic radiolarian limestone and calcareous tuff

CCN **NAKINA SUBTERRANE**--Coherent sequence of Mississippian basalt overlain by Mississippian to Permian carbonate rock and Middle or Upper Triassic chert

CCP **PAVILION SUBTERRANE**--Lower and Upper Triassic argillite, chert, and siltstone; minor Permian and Upper Triassic limestone, volcaniclastic rocks, and basalt

CCS **SENTINEL SUBTERRANE**--Disrupted Pennsylvanian, Permian, and possibly Mesozoic radiolarian chert and argillite, pillow basalt, diabase sills, and extensive, probably olistostromal basalt and carbonate breccia containing clasts of Mississippian to Permian ages

CG **CHUGACH TERRANE**--Upper Cretaceous graywacke, argillite, and slate and a melange having a matrix of Upper Jurassic to Lower Cretaceous cherty argillite and blocks of mafic volcanic rocks, chert, limestone, and ultramafic rocks

CK **CHILLIWACK TERRANE**--Pennsylvanian to Permian argillite, siltstone, sandstone, conglomerate, carbonate rocks, and dacitic to basaltic volcanic rocks, overlain by Upper Triassic and Lower Jurassic argillite, siltstone, and volcanic sandstone. Permian fusulinid faunas resemble those of the Quesnellia and Stikinia terranes and are not dissimilar from faunas in the southwestern United States

CR **CRESCENT TERRANE**--Eocene basalt flows, breccia, tuff, and volcanic sandstones; cut by basalt, diabase, and gabbro intrusions

HZ **HOZAMEEN TERRANE**--Disrupted Permian to Middle Jurassic chert, argillite, basalt, minor carbonate rocks and alpine-type ultramafic rocks

KA **KANDIK RIVER TERRANE**--Flyschoid pelitic rocks and sandstone, mainly of Early Cretaceous age; highly deformed and affected by low-grade metamorphism

KL **KLUANE TERRANE**--Quartz-biotite schist possibly derived from a Jurassic-Cretaceous clastic protolith

KO **KOOTENAY TERRANE**--Variably metamorphosed, lower Paleozoic strata comprising pelitic rocks, quartz grit, mafic volcanic rocks, limestone, and Devonian and(?) older intrusions that were deformed prior to deposition of late Paleozoic pelitic rocks, conglomerate, sandstone, limestone, and mafic volcanic rocks. In part these strata resemble coeval "North American" strata to the east, but the latter contain no record of lower to middle Paleozoic deformation and intrusion

MD **McLEOD TERRANE**--Metamorphic rocks, including micaceous garnet and chlorite schists, minor metaquartzite, and granitic rocks

MO **MONASHEE TERRANE**--Lower Proterozoic high-grade metamorphic rocks comprising cores of paragneiss and orthogneiss as old as 2.5 b.y., mantled by quartzitic, semipelitic, and calc-silicate gneiss, and minor marble and metaquartzite cut by 2.0 b.y. orthogneiss intrusions

MT **METHOW-TYAUGHTON TERRANE**--Upper Triassic to Cretaceous clastic sedimentary strata containing local carbonate and volcanic rocks. By late Early Cretaceous time this terrane was a partial facies equivalent of a coeval continental arc built upon the Quesnellia terrane to the east

NK **NOOKSACK TERRANE**--Upper Triassic(?) and Lower Jurassic to Lower Cretaceous clastic rocks, interbedded intermediate to felsic volcanic rocks, and metamorphosed equivalents

PC **PORCUPINE TERRANE**--Precambrian(?) sedimentary rocks overlain by generally shallow-marine carbonate and clastic rocks of Cambrian(?) to late Devonian age

PR **PACIFIC RIM TERRANE**--Disrupted, mainly Upper Jurassic and Lower Cretaceous, graywacke, argillite, chert, and basalt

QN **QUESNELLIA TERRANE UNDIFFERENTIATED**--Upper Triassic and Lower Jurassic calc-alkaline to alkaline volcanic rocks and comagmatic intrusive rocks, argillite, volcanic sandstone, and minor carbonate rock; upper Paleozoic carbonate rock occurs locally. Triassic and some Jurassic faunas differ from coeval faunas at same present latitude on craton

QNH **HARPER RANCH SUBTERRANE**--Upper Devonian to Permian argillite, sandstone, and conglomerate, mafic to felsic volcanic rocks, and carbonate rock. Permian faunas similar to those of the Chilliwack terrane

QNO **OKANAGAN SUBTERRANE**--Disrupted and variably metamorphosed chert, argillite, and basalt; local upper Paleozoic limestone and ultramafic rocks

SE **SAINT ELIAS TERRANE**--Metamorphosed volcanic and sedimentary rocks of probable late Mesozoic age

SH **SHUKSAN TERRANE**--Metamorphosed, greenschist- and blueschist-grade, mafic volcanic rocks, pelite, and pelitic quartz grit of probable Jurassic protolith age; metamorphosed in Late Jurassic-Early Cretaceous time

SK **SKAGIT TERRANE**--Metamorphosed, locally migmatitic rocks, derived from a predominantly clastic sequence with subordinate volcanic rocks (in part possibly of the Bridge River, Hozameen, and Methow-Tyaughton terranes) and metamorphosed in mid- or late Cretaceous time. Mid-Cretaceous plutonic rocks intruding this terrane have anomalously low paleomagnetic inclinations with respect to stable North America

SM **SLIDE MOUNTAIN TERRANE**--Upper Paleozoic chert, argillite, sandstone, conglomerate, and local mafic intrusions, stratigraphically or structurally overlain by basalt, local alpine-type ultramafic rocks, and carbonate rocks. Permian faunas in this terrane in northern British Columbia have affinities with those of Southwest United States and northwest Mexico

ST **STIKINIA TERRANE**--Mississippian to Jurassic mafic to felsic volcanic rocks and clastic rocks, and important amounts of upper Paleozoic carbonate rock. Permian, Triassic, and Jurassic faunas differ from those at same present latitude on craton, but are similar to those farther south in the western and southwestern conterminous U.S.; Triassic and Jurassic magnetic inclinations indicate about 13° northward displacement with respect to paleolatitudes on craton

TA **TRACY ARM TERRANE**--Metamorphosed pelitic and quartzofeldspathic schist and paragneiss, marble, amphibolite, and minor serpentinite. Possible Late Proterozoic protolith age in northwestern British Columbia; to the south these rocks may be merely high-grade metamorphic equivalents of flanking terranes

TUS TUN TUC **TAKU TERRANE**--Variably metamorphosed upper Paleozoic and Triassic basalt and local felsic volcanic rock, carbonate rock, and pelite. Includes undated metamorphosed clastic and volcanic rocks similar to Jurassic and Cretaceous strata in Gravina-Nutzotin overlap assemblage

WM **WINDY-MCKINLEY TERRANE**--Devonian to Triassic ultramafic rocks, limestone, chert, and pillow basalt

WR **WRANGELLIA TERRANE**--Upper Paleozoic to Jurassic felsic to mafic volcanic rocks and comagmatic intrusions, limestone, pelite, and conspicuous Middle(?) and Upper Triassic thoeliitic basalt overlain by carbonate rocks. Paleomagnetic data on Triassic and Jurassic strata indicate derivation from low latitudes

YA **YAKUTAT TERRANE**--Upper Mesozoic pelitic rocks, graywacke, and melange, and Cenozoic marine and continental clastic rocks

YT **YUKON-TANANA TERRANE**--Hetefogenous metamorphic terrane comprising sedimentary and magmatic rocks of possible late Proterozoic, Paleozoic, and Mesozoic protolith ages. Includes gneiss, clastic metasedimentary rocks, foliated granitic rocks, and ophiolite

NONACCRETIONARY CONTINENTAL ROCKS AND OCEANIC PLATES

NAm **NORTH AMERICA**--Continental rocks of North America not accreted during Phanerozoic time

JDF **JUAN DE FUCA PLATE**

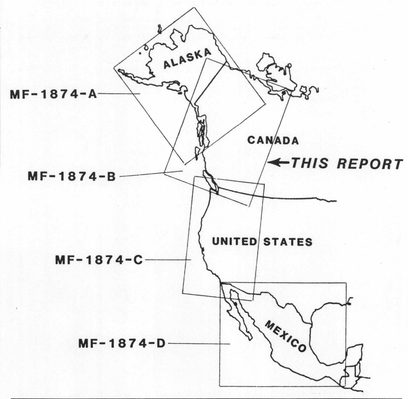
PAC **PACIFIC PLATE**

TERRANE-BOUNDING FAULT--Dashed where approximately located; dotted where concealed beneath cover deposits or within batholithic rocks

POSTAMALGAMATION OR POSTACCRETION CONTACT--Includes depositional, intrusive, and fault contacts that are not terrane boundaries

(13) LOCALITY WHERE EVIDENCE FOR AMALGAMATION OF TERRANES EXISTS--Described in Table 1 of accompanying pamphlet

BELT OF LOW-ANGLE CORDILLERAN THRUST FAULTS--Approximate east limit



Index map of western North America showing locations of Miscellaneous Field Studies Maps MF-1874-A, B, C, and D

Explanatory pamphlet accompanies map

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