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QUATERNARY GEOLOGY, PEACE RIVER DISTRICT,
BRITISH COLUMBIA

W. H. MATHEWS

Unconsolidated sediments as mapped in the Fort St. John area include a twice-repeated succession of gravels overlain by sands, silts and clays and these in turn overlain by tills of eastern origin. Both successions are interpreted as:

- (1) Gravels laid down by the ancestral Peace River system.
- (2) Fine sediments laid down in lakes ponded by ice advancing from the east or northeast, and
- (3) Till laid down after ice reached the Fort St. John area.

The two major strand lines of ice-dammed Lake Peace occur at the 2,260 foot and 2,750 foot elevations above sea level.

It seems probable that the last advance of Cordilleran ice occurred after withdrawal of the Laurentide ice to the northeast of Fort St. John.
(7 refs.)

PLACER MINING IN THE PEACE RIVER REGION

R. SPENCE TAYLOR

Placer gold in the Peace River valley is known to occur from Finlay Forks to the mouth of the Notikewin River. Occurrences are, with one exception, confined to the Peace itself.

The gold of the area is very fine, and becomes finer in a downstream direction. Because of this, values are concentrated in or just below gravels and sands moved onto the upstream ends of bars during high water stages.

A chronology of placer mining on the Peace is given.
(1 diag., 11 refs.)

UPPER CRETACEOUS, PEACE RIVER AREA, BRITISH COLUMBIA

C. R. STELCK

Upper Cretaceous rocks ranging from Cenomanian to Campanian reach an aggregate thickness of 7,000 feet or more to the south of the Peace River valley. The sequence is divided, from bottom to top, into the Cruiser, Dunvegan, Kaskapau, Cardium, Wapiabi, Chinook and Wapiti Formations.

Faunal content and lithology indicate a marine, and in part euxenic environment for the Cruiser, a deltaic environment for the Dunvegan, a shallow marine to brackish environment for the Kaskapau, a shallow marine to brackish environment, with evidence of intraformational unconformity for the Cardium, a shallow marine environment for the Wapiabi, a brackish environment for the Chinook and a continental environment for the Wapiti.

The Lower-Upper Cretaceous boundary is located within a band of fish-scale bearing siltstones within the Cruiser Formation.
(1 table, 1 diagram, 20 refs.)

CRETACEOUS ROCKS OF PEACE RIVER FOOTHILLS

D. F. STOTT

The thick Cretaceous section of intertonguing marine and continental shales and sandstones of the Peace River area is divided into the Bullhead and Fort St. John Groups of Lower Cretaceous age and the Dunvegan Formation, the Smoky Group and the Wapiti Formation of Upper Cretaceous age.

The Bullhead Group, up to 4,200 feet thick, consists of a lower marine to nonmarine sequence of sandstones and shales, separated by the Cadomin conglomerate from an upper non-marine coal-bearing sequence of carbonaceous shales and sandstones. Various terminologies which have been proposed for subdivisions of the group are discussed.

The Fort St. John Group is made up of the Moosebar shale, the Gates sandstone, the Hasler shale, the Goodrich sandstone, and the Cruiser shale. The Albian Cenomanian boundary falls within the Cruiser Formation.

(6 illus., 3 tables, 4 diag., 46 refs.)

THE JURASSIC FERNIE GROUP IN NORTHWESTERN
BRITISH COLUMBIA

W. N. HAMILTON

The Fernie Group of Northeastern British Columbia reaches a maximum thickness of about 1100 feet on the Peace River. Northward and eastward thinning of the group from this point is in large part depositional, with the ultimate elimination of the group in these directions being due to pre-Cadomin and possibly to some extent pre-Nikanassin erosion.

The group is divided into the basal Nordegg calcareous shale, a median black non-calcareous shale, and the sandy to silty Passage beds at the top. The sequence suggests a sudden marine incursion, a long period of relatively quiescent marine deposition, and a terminal shallowing and partial withdrawal of the Fernie sea.

(1 diag., 3 secs., 10 refs.)

PERMO-CARBONIFEROUS STRATIGRAPHY OF THE
ROCKY MOUNTAINS NORTH OF PEACE RIVER

H. R. HOVDEBO

The Permian-Carboniferous of the Peace River area of the Rocky Mountains and foothills contains rocks ranging in age from lowermost Mississippian to Permian. The lower Mississippian is represented by the upper part of the Besa River shale. Osage, Meramec and possibly lowermost Chester are represented by the cherty limestone sequence of the Prophet Formation. Most of the Chester, plus portions of the Pennsylvanian and Permian, are represented by a predominantly elastic sequence for which the term Chowade Group is tentatively proposed provisional on wider publication.

Paleontology and lithology suggest that the top of the Prophet Formation lies close to the top of the Debolt Formation of the plains, and that the Chowade Group correlates with the Golata, Kiskatinaw, Taylor Flat and Belloy Formations.

(1 diag., 1 sec., 11 refs.)

TRIASSIC STRATIGRAPHY IN THE VICINITY OF PEACE RIVER FOOTHILLS, BRITISH COLUMBIA

D. J. COLQUHOUN

The marine Triassic sequence of the Peace River foothills includes all stages of the Triassic except the Rhaetian. The sequence is divided into two groups, the Lower and Middle Triassic Daiber Group and the Middle and Upper Triassic Schooler Creek Group.

In surface exposures, the Daiber Group is divisible into the Grayling and Toad Formations and the "Mount Wright" siltstones and sandstones (correlative to the Doig Formation of subsurface nomenclature).

The Schooler Creek is divisible into the Halfway sandstone, the Charlie Lake Formation of highly variable lithology, the Baldonnel limestone and the Pardonet silty limestone.

Seven faunal assemblage zones are recognized:

Monotis subcircularis

Himavites

Stikinoceras

Lima poyana

Nathorstites meconnelli—*Aulacothyris petriani*

Daonella americana—*Gymnotoceras*

Claraia stachei—*Xenoceltites warreni*

(1 table, 2 secs., 33 refs.)

THE BESA RIVER FORMATION

F. A. KIDD

The name Besa River Formation is suggested, provisional on future wider publication, for the thick black shale sequence which is present in the northeast British Columbia foothills and mountains, lying between Mississippian cherty limestones and Middle Devonian carbonates. This shale has a thickness of about 3,000 feet and constitutes a single mappable rock unit. Although the faunal content of this seemingly euxenic environment is sparse, evidence is presented which demonstrates that the Besa River shale includes Kinderhook and Upper Devonian, with an even wider time range a distinct possibility.

(1 diag., 1 sec.)

BRIEF NOTES ON THE LOWER PALEOZOIC ROCKS OF THE ROCKY MOUNTAINS ALONG THE PEACE RIVER

B. T. GALLANT

The Lower Paleozoic rocks of this area contain rapid facies and thickness changes, in combination with complex structure, making correlations and detailed stratigraphic studies most difficult. The Lower Paleozoics and Precambrian consist of 15,000 to 20,000 feet of marine sediments. The Middle Devonian to Upper Cambrian sequence, over 6,000 feet thick, is predominantly fossiliferous carbonates and can be fairly readily divided into several major mapping units. The thick sequence of Lower Cambrian to Precambrian clastics is structurally complex and has been subjected to low grade metamorphism.

(3 diag., 1 ref.)

DIAGRAMMATIC STRUCTURE CROSS-SECTIONS ALONG
THE NORTH AND SOUTH SIDES OF PEACE RIVER VALLEY, B.C.

E. J. W. IRISH

Generalized structure cross-sections to the north and south of the Peace River valley portray the structural habit of the area. The division between Rocky Mountains and foothills is placed, arbitrarily, at the Mount Burden fault.

The main part of the Rocky Mountains consists of a series of west-dipping thrust slices repeating carbonate strata of Ordovician, Silurian and Devonian ages.

In contrast to the Mountains, folding is more important than faulting in the Foothills region. The folds consist of a succession of narrow, compressed anticlines separated by broad synclines having gently dipping limbs.

(2 sec., 4 refs.)