Strata with a Kinderhook fauna equivalent in age to the Banff formation are present. They are followed by a sequence of rocks with Osage, Meramec, and Chester fossils and consisting of interbedded argillaceous limestones and calcareous shale overlain by a great thickness of sandstone with minor shale and coal beds. Fossil plants, *Stigmaria* sp. and *Lepidodendron* sp., and coal were found in sandstones below the Meramecian *Spirifer cf. pellaensis* zone.

Microspores from the coal were identified by P. A. Haquebard of the Coal Research Branch of the Geological Survey of Canada, Sydney, Nova Scotia, and were found to indicate a Lower Carboniferous or Mississippian (Tournasian, partly Visean) flora. Spores in the coal are unlike those found in Mississippian coal of Utah but are very similar to those described from the Lower Carboniferous of the Ukraine by geologists of the U.S.S.R.

P. F. Moore, Shell Oil Company, Calgary, Alberta

The first section runs from Mount Rundle to Grotto Mountain in the Bow Valley to the southern end of the Fairholme Range near Exshaw and thence to the bore holes Roxana 1 and Shell-Anglo-Canadian Pine Creek No. 1. The Rocky Mountain formation is present from Mount Rundle to Exshaw and absent eastward owing to pre-Jurassic erosion. The upper Rundle formation at Banff is shown to include the Tunnel Mountain and upper Mount Head members, both of which are present as far east as Exshaw but absent at Pine Creek. The lower Rundle, which is massive at Mount Rundle, gives place eastward to the lower Mount Head, Turner Valley, Shunda, and Pekisko formations. The Banff-Rundle contact is strongly diachronic, the upper Banff at Banff *Spirifer rowleyi* being much younger than the uppermost Banff in the Foothills and Plains (*Leptaena analoga* zone) and being the age equivalent of part of the Pekisko and probably the Shunda.

The second section follows the strike northward from Pine Creek to the Superior et al. Solomon Creek No. 1 bore hole and thence to Jasper Park (Mount Greenock), Wapiti Lake, B.C. (South Gap), and to the Amerada Crown GF 23-11 bore hole north of Sturgeon Lake.

On this section the Rocky Mountain formation is represented by the "Permo-Pennsylvanian" beds at the top of the Amerada Crown well and by the upper part of the Mount Greenock formation at Jasper.

Equivalents of the Tunnel Mountain formation are probably present in the lower part of the Mount Greenock formation at Jasper and in the green sandy shales at the top of the Mississippian at Amerada Crown.

The Mount Head formation is present, though thin, in Pine Creek, doubtfully so in Solomon Creek; a coral zone at Jasper suggests that it is there in a relatively pure carbonate facies. At Wapiti Lake it is faunally recognizable (*Lithostrotion* zone) and the characteristic change from a silty dolomite to the underlying limestone of the Turner Valley formation can be traced to Sturgeon Lake area.

The Turner Valley formation is limestone from Jasper north, but dolomite in Solomon Creek; in both these bore holes there is little or no overlying Mount Head formation.

The Shunda formation is present, though thin, in Pine Creek, doubtfully so in Solomon Creek; a coral zone at Jasper suggests that it is there in a relatively pure carbonate facies. At Wapiti Lake it is faunally recognizable (*Lithostrotion* zone) and the characteristic change from a silty dolomite to the underlying limestone of the Turner Valley formation can be traced to Sturgeon Lake area.

The Turner Valley formation is limestone from Jasper north, but dolomite in Solomon Creek and Pine Creek; in both these bore holes there is little or no overlying Mount Head formation.

The Shunda formation is present, though thin, in Pine Creek, doubtfully so in Solomon Creek; a coral zone at Jasper suggests that it is there in a relatively pure carbonate facies. At Wapiti Lake it is faunally recognizable (*Lithostrotion* zone) and the characteristic change from a silty dolomite to the underlying limestone of the Turner Valley formation can be traced to Sturgeon Lake area.

The correlation of these rock units is illustrated on cross sections from the Pine Creek well to the northeast, toward the Big Valley fields, southeast to Saskatchewan and south to Kevin-Sunburst area in Montana. The Banff of Pine Creek well is correlated with the Me+Mb2 (Lodgepole) of the Kevin...
ASSOCIATION ROUND TABLE

Sunburst area; the Pekisko and Shunda plus Elkton member of the Turner Valley with Mbr (Mission Canyon); and the upper part of the Turner Valley with the Ma unit.

The typical lithological units of the Bakken formation of Montana and the Dakotas are present in the southeastern part of the map area. The formation thins to near zero toward the west as a depositional edge due to epeirogenic movements prior to Mississippian deposition. To the north, the lower black shale only is present as a distinguishable rock unit and the name Exshaw is applicable. The upper part of the formation changes to gray shale that is not readily distinguished from the overlying Banff shale.

G. MACAULEY, Hudson's Bay Oil & Gas Company, Calgary, Alberta
Mississippian of Peace River Area, Alberta

A north-south stratigraphic cross section illustrates lithologies, facies, general thickness changes, and rock units of the Mississippian strata which are known only in the subsurface of the Peace River area.

Mississippian sediments were first truncated to the northeast and east by a post-Mississippian pre-Permo-Pennsylvanian unconformity with three further periods of erosion in the more easterly and northerly parts of the area in pre-Triassic, pre-Jurassic, and pre-Cretaceous time. Over 3,000 feet of sediments remain in the thickest known section and represent all the Mississippian units known from mountain areas. Over 1,000 feet of strata present in the British Columbia subsurface have been eroded in the Peace River area of Alberta.

Several of the formations of the Central Plains and Foothills are recognizable. The Exshaw of the Sturgeon Lake area is a bituminous shale-siltstone-limestone sequence which grades northward to shale. The Banff formation, which to the south is a carbonate unit overlain by a clastic zone, thickens northward to a shale facies. Similarly the Pekisko of the northern part of the Peace River area is a dark shale in contrast to the bioclastic limestone facies throughout the rest of Alberta. The Shunda is composed of a series of bioclastic limestones and gray shales over the entire area.

A new formation name, the Debolt is here proposed for a sequence of rocks divided by a thin clastic zone into a 300-foot lower unit of fragmental limestones probably correlative with the Turner Valley of Southern Alberta and a 500-foot unit of dolostones with evaporites possibly equivalent to the Mount Head. Amerada Crown "G"F 23-11 has been chosen as the type well section of the Debolt.

Above the Debolt is a series of clastics, with some carbonates and evaporites considered to be correlative with the Tunnel Mountain. These beds are assigned to the Stoddart, a new formation being proposed by A. T. C. Rutgers at this meeting.

The units Pekisko to lower Debolt inclusive comprise Laudon’s Dessa Dawn of the Wapiti Lake surface sections.

The Permo-Pennsylvanian beds, indefinite as to age, are composed of light cherts and dense dolostones overlain by quartz-chert sandstones. Considerable erosion of the Stoddart and Debolt indicates a major unconformity and time lapse before deposition of the Permo-Pennsylvanian over the Mississippian.

A. T. C. RUTGERS, Pacific Petroleum Ltd., Calgary, Alberta
Stoddart, New Formation in Fort St. John Gas Field, British Columbia

The name Stoddart formation is here proposed for a succession of late-Paleozoic strata lying above the Rundle limestone in Pacific Fort St. John No. 23 gas well. This well from which the lithological description was made is located in Lsd. 3, Section 29, Township 83, Range 16, W 6th, British Columbia.

The lithological character of the formation is very diversified but it can be divided into two units. The lower part is predominantly clastic, 1,250 feet thick and consists of waxy shales, siltstones, and sandstones, together with some limestone and dolomite. Glauconite occurs sporadically throughout and one sandstone unit contains some anhydrite. The upper unit, 915 feet thick, consists mainly of gray limestone and dolomite with chert and some intercalated clastic beds. Some beds are glauconitic and one dolomite bed contains anhydrite nodules.

The Stoddart formation appears to rest conformably on the Mississippian Rundle and underlies the so-called Permo-Pennsylvanian whose age is not yet precisely known. No direct evidence of age could be deduced from the few poorly preserved fossil fragments obtained from cores.

The upper part of the Stoddart appears to be only partly present in other wells of the Peace River area and the upper contact is believed to be unconformable, and some truncation may even have taken place at the top of the section in the Fort St. John No. 23 well. The extreme variability of the lithology makes it difficult to place the unconformity accurately and increases the difficulty of correlation from one well to another.

Following the deposition of the Rundle, this part of the Peace River area appears to have experienced a long period of negative tectonic movements; marine sedimentation took place in unstable, shallow, shelf conditions which were finally terminated by uplift and consequent widespread erosion.