

ing older rocks. The original basin margins probably were high-angle normal faults, although strike-slip faulting is suggested locally. Paleocurrent patterns suggest transport of sediment from surrounding highlands toward the central part of the basins, where larger rivers flowed parallel with the basin axes. No consistently oriented regional pattern is apparent. Stratigraphic relations, sedimentary structures, and fabrics are characteristic of fluvial deposition. The coarse intramontane sediments are very similar to Old Red Sandstone deposits in Svalbard, East Greenland, eastern Quebec, Ireland, and Scotland.

NORFORD, B. S., Geol. Survey of Canada, Calgary, Alta.

SILURIAN STRATIGRAPHIC SECTIONS AT CAPE TYSON, OFFLEY ISLAND, AND CAPE SCHUCHERT, NORTHWEST GREENLAND

The Silurian strata of northwest Greenland consist of an intricate assemblage of graptolitic rocks and limestones of varied facies deposited at the seaward edge of a carbonate platform that covered most of northern Greenland during Silurian time. Facies changes are abrupt and the formations are in part facies equivalents of each other. The Offley Island Formation consists of biostromal and biohermal limestones and associated calcarenites and limestone conglomerates. The Cape Schuchert Formation is composed primarily of somewhat argillaceous calcisiltites, but includes minor biostromal and biohermal limestones and related calcarenites. The graptolitic rocks are assigned to the Cape Phillips Formation and consist of calcareous shale and mudstone, chert, argillaceous limestone, and local strings of small bioherms. The term "Cape Tyson Formation" is considered obsolete. All the rocks exposed at the studied localities are of about late Llandovery age, but younger and older Silurian rocks may be present elsewhere in northern Greenland.

Extensive development of biostromal and biohermal rocks may be characteristic of the seaward edge of the Silurian carbonate platform in Greenland and the Canadian Arctic Islands. The position of the edge can be traced from Greenland to east-central Ellesmere Island and Grinnell Peninsula to Cornwallis Island, from there westward south of Bathurst Island and through southern Melville Island.

NORMAN, CHARLES A., Continental Oil Co., Denver, Colo.

ECONOMICS OF PRUDHOE BAY FIELD (COMPARISON WITH BELL CREEK FIELD)

An economic model of Prudhoe Bay field based on the discounted cash-flow method uses the following assumptions: (1) 7.5 billion bbl of recoverable oil; (2) an average IP rate of 4,000 bbl/well/day; (3) a peak production rate of 1.6 million bbl/day; and (4) a discount factor of 15%. The model gives a producing cost (no exploratory or lease costs included) of \$0.28/bbl. A similar economic model for the Trans Alaska Pipeline gives a pipeline cost of \$0.45/bbl for transport from Prudhoe Bay to Valdez. Tanker costs from Valdez to Los Angeles are estimated at \$0.30/bbl.

For comparative purposes a model of Bell Creek field, Montana, was made along the same lines as the Prudhoe Bay model. Actual producing rates of Bell Creek Field were used, and the expected ultimate recovery is assumed to be 150 million bbl. The model gives a production cost of \$0.58/bbl at Bell Creek.

NORRIS, D. K., Inst. Sed. and Petrol. Geol., Calgary, Alta.

TECTONIC STYLES OF ARCTIC PLATEAU AND COASTAL PLAIN OF YUKON TERRITORY, WESTERN DISTRICT OF MACKENZIE

(No abstract submitted)

OBUT, A. M., and R. F. SOBOLEVSKAYA, Research Inst. Geol. of Arctic, Leningrad, USSR

DIVISION AND CORRELATION OF ORDOVICIAN DEPOSITS IN NORTHEASTERN USSR

Ordovician deposits of northeastern USSR are represented by several types of sediments. Carbonate rocks are the most widespread, then terrigenous sediments with graptolites, and volcanic-terrigenous facies with graptolites and parts of corals and brachiopods. The bases for correlations are the sections of transitional lithologic type with corals, trilobites, ostracods, brachiopods, and graptolites.

The Tremadocian Stage is identified only in the carbonate sections. The Arenigian deposits are carbonate sediments with distinctive faunas that make it possible to correlate them with the Chunya Stage of the Siberian platform and the Beekmantown of North America. They also correlate with graptolite-bearing terrigenous-carbonate sections.

The Llanvirnian includes terrigenous and carbonate lithologic types that extend as far as the Chukotsk Peninsula. The strata have numerous graptolites, which make it possible to correlate across the entire region and with equivalent deposits in England, North America, Australia, and China.

The Llandeilian contains predominantly benthonic faunas and some graptolites of the *Glyptograptus tertiusculus* zone. This stage is definable only where complete sections are present and its boundaries are traced rather conditionally.

The Caradocian Stage has the widest distribution. It may be divided into three substages by graptolites and confidently correlated with deposits of other continents.

Of peculiar interest are the Ashgillian deposits (the typical section in the Omulevka Mountains). Their rich benthonic faunas (corals and brachiopods) permit correlation with the 5b zone of Norway, the Ashgillian of England, and the uppermost parts of the Ordovician of North America.

In the Mirnyy Creek section of the Omulevka Mountains, a detailed study was made of the successive transition from Ordovician to Silurian that is marked by the graptolite zones of *Dicellograptus ornatus*, *Climacograptus superius*, *Akilograptus ascensus*, and *A. acuminatus*.

PADGET, PETER, Geol. Survey of Sweden, Stockholm, Sweden

PRECAMBRIAN OF NORTHERN SWEDEN, NORTH OF ARCTIC CIRCLE

Odman's "Description to map of the Pre-Cambrian rocks of the Norrbotten County, N. Sweden" published in 1957, contributed greatly to the geologic knowledge of the Precambrian in northernmost Sweden. Newer data are available from detailed geologic mapping and geophysical surveying during the past 10 years. The broad features of the geologic evolution are supported by radiometric age determinations. Recent investigations had been made into the Precambrian iron-ore de-