

REVIEWS

Upper White River District, Yukon. By D. D. CAIRNES. Geol. Survey Canada, Memoir 50, 1915. Pp. 191, figs. 2, pls. 17, maps 3.

This report covers an area of about 800 square miles lying along the Alaska-Yukon International Boundary from latitude $61^{\circ} 40'$ to $62^{\circ} 30'$. It is considered to be a promising area for mineral deposits of economic value.

The oldest rocks exposed are mica schists referred to the Yukon group of pre-Cambrian age. Upon these rest 1,500 feet of Carboniferous limestones and clastics followed by 1,000 feet of Mesozoic shales and sandstones. At a few points Tertiary beds were observed. These beds are in part flat-lying, and in part have been highly dynamically metamorphosed.

The writer believes that the Nutzotin Mountains are due to differential erosion rather than to faulting. They remained as a region of considerable relief at the time of the peneplanation of the Yukon plateau region and were further uplifted between the late Miocene and the early Pleistocene. A different explanation from that suggested by geologists of the United States Geological Survey is advanced to account for drainage changes along White River.

W. B. W.

Wyoming and McDowell Counties. By R. V. HENNEN. West Virginia Geol. Survey, 1915. Pp. 783, pls. 31, figs. 28, maps 2.

McDowell County, situated on the southern border of the state, has led all the counties in the state in coal production since 1905. Approximately 15,000,000 tons were produced in 1915, and at this rate its available coal will last about two hundred and fifty years. Wyoming County coal fields have not been developed until recently, but its coal reserves equal those of McDowell County.

The Pottsville series has a remarkable development here. It increases from a thickness of 250 feet at the northern edge of the state to a maximum of 3,850 feet in these counties. It has been differentiated into three groups and two score formations.

A new feature in this report is a series of 25 maps of these counties showing the minable coal areas of as many different coal horizons. Under separate cover are topographic and geologic and structure contour maps.

W. B. W.

Oil and Gas Fields of Ontario and Quebec. By WYATT MALCOLM. Geol. Survey Canada, Memoir 81, 1915. Pp. 248.

This memoir has been prepared chiefly for those interested in the commercial development of oil and gas. It treats of the lithology, stratigraphic relations, and areal distribution of the geologic formations from the Potsdam to the Chemung. The predominant structural feature is a gentle dipping of the strata to the southwest away from the pre-Cambrian axis. The northeastern extension of the Cincinnati anticline reaches into Ontario.

The productive horizons are not limited to one formation. Gas is found in the Medina, oil and gas in the Guelph and Salina, and oil in the Onondaga. The production of gas has increased steadily, but the oil output reached a maximum in 1907, and since then has fallen greatly.

Analyses of gas from different fields show a surprising uniformity of composition. The writer of the report believes this to be incompatible with a local and separate origin of the gas for each field.

W. B. W.

Arisaig-Antigonish District, Nova Scotia. By M. Y. WILLIAMS. Geol. Survey Canada, Memoir 60, 1914. Pp. 173, maps 2.

The chief interest in this memoir lies in its contribution to stratigraphy. Careful attention had been given already to the region, for in it lies the key to the stratigraphy of a considerable area. The purpose of this investigation was to work out in still greater detail the sedimentary record and the ages and relations of the igneous rocks.

Of the Paleozoic systems, the Cambrian and Permian are missing. Where possible, correlations are made with the type sections of Europe. Separate chapters are reserved for structural and historical geology. Igneous geology is given the same careful attention as the sediments. The igneous rocks are limited largely to acid and basic intrusives in the Ordovician, and to intrusive diabase sheets in the Mississippian.

W. B. W.