

tributaries is fertile and highly cultivated lowland. The geological formations are grouped as follows:—

Recent	.	.	.	.	Alluvial deposits, Travertine, etc.
Miocene	.	.	.	} Moutere Gravels	River Gravels.
Late Mesozoic or	Intrusive rocks of	Ultra-basic rocks which pierce			
Early Cainozoic	.	.	"Mineral Belt"	.	the Matai Series.
Trias-Jura	.	.	Matai Series	.	Conglomerates, breccias, grauwackes, limestones, and argillites, with contemporaneous volcanic rocks.

Among the fossils of the Matai Series are species of *Spirigera*, *Monotis*, *Halobia*, *Trigonia*, and *Gryphæa*. The main object of the work is to describe the nature and extent of the copper-deposits which occur in the Mineral Belt. The associated rocks include peridotites, serpentine, etc., and of these petrological accounts are given. Other economic products of the district are gold, chromite, coal, and building materials.

VIII.—CAMBRIDGE COUNTY GEOGRAPHIES.—We have received the volume on North Lancashire by Dr. J. E. Marr (Cambridge, at the University Press, 1912, price 1s. 6d.). It contains a capital account of the physical features, with brief references to the geological structure. The mountains; the fells, some of which are rocky and step-like, while others are peat-covered moorlands; the watersheds and passes, the bare and fissured limestone-tracks known as 'clints', the lakes, tarns, and rivers are duly if briefly described. There appear to be no great forests, but much coppice, and charcoal-burning is carried on for the manufacture of gunpowder. The iron-ore, building-stone, the slate of Tilberthwaite, and rock-salt are among the industries of geological interest. Many good views of scenery are given, and there is a portrait of Sir Richard Owen, who, as a Lancashire man, is rightly given a place with Whewell and Sir Edward Frankland in the section entitled 'Roll of Honour'.

IX.—BRIEF NOTICES.

1. GEOLOGY OF WYOMING.—A memoir on the *Geology and Mineral Resources of a Portion of Fremont County, Wyo.*, has been written by the State Geologist, Mr. C. E. Jamison (Bulletin No. 2, series B, 1911). An account is given of the various geological formations from Pre-Cambrian to Tertiary (Eocene), of their structure and history, with preliminary descriptions of the physical features, climate, and agriculture. The chief mineral products are oil, gold, building-stones, and gypsum.

2. WESTERN AUSTRALIA.—We have received vol. i, pt. ii, 1912, of the *Records of the Western Australian Museum and Art Gallery*, edited by the Director, Mr. Bernard H. Woodward, F.G.S. In this work Mr. L. Glauert continues an account of the mammalian remains from the Mammoth Cave, describes some "Fossil Marsupial Remains

from Balladonia." and "Permo-Carboniferous Fossils from Byro Station, Murchison District".

3. **MOLYBDENUM ORES OF CANADA.**—Dr. T. L. Walker has prepared a "Report on the Molybdenum Ores of Canada" (Dep. Mines, Ottawa, 1911). The ore most widely distributed is Molybdenite: there also occur Molybdite and Wulfenite (molybdate of lead). All information relating to the subject has been gathered, and the author has personally examined many of the Molybdenum deposits.

4. **SEISMOLOGY.**—We have received several numbers of the *Bulletin of the Seismological Society of America*, commenced in 1911, under the direction of Messrs. J. C. Branner, A. C. Lawson, and S. D. Townley. While dealing particularly with phenomena observed in America, notices are included of earthquakes in other parts of the world. In No. 4 (December, 1911), Mr. Lawson described some Post-Glacial faults; Mr. J. S. Diller contributes a memoir with portrait of Major Clarence E. Dutton; and there are various articles relating especially to earthquakes, earthquake epicenters, seismographs, etc.

5. **MEGASCOPIIC PSEUDOSTROMATISM.**—Mr. S. Rennie Haselhurst (Univ. Durham Phil. Soc., iv, p. 162, 1912) introduces the term mentioned in describing the larger forms of structure produced by overfolding and thrusting, shearing and cleavage, as developed in shales and micaceous sandstones in the Coal-measures of Northumberland. The characters, which simulate fluxion-structure, appear to be similar to those described by Dr. A. Strahan in the violently disturbed Coal-measures on the Pembrokeshire coast (see *Summary of Progress Geol. Survey for 1905*, p. 60).

6. **ARCTOTHERIUM FROM YUKON.**—A new species of this giant bear, named *Arctotherium yukonense*, has been described by Mr. Lawrence M. Lambe (*Ottawa Nat.*, xxv, p. 21, 1911). The specimen, a well-preserved skull, was found at a depth of 40 feet in frozen Pleistocene deposits at Gold-run Creek, Yukon, and the discovery extends the known range of this mammal very far to the north of any previous record. The genus is regarded as intermediate between the old-world *Hyænarctos* and *Ursus*.

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## REPORTS AND PROCEEDINGS.

GEOLOGICAL SOCIETY OF LONDON.

June 19, 1912.—Dr. Aubrey Strahan, F.R.S., President, in the Chair.

The following communications were read:—

1. "On the Geology and Palæontology of the Warwickshire Coal-field." By Robert Douglass Vernon, B.A., B.Sc., F.G.S.

The main objects of this paper are to determine the true age of the so-called 'Permian' rocks of Warwickshire, and their stratigraphical relationship to the underlying Carboniferous rocks and to the overlying deposits of Triassic age. Further, the Carboniferous rocks are subdivided into groups, and the age of the subdivisions is determined