RECENT LITERATURE ON ECONOMIC GEOLOGY.

COMPILED BY

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METALLIFEROUS DEPOSITS.

COPPER.

Notes on Mother Lode Mine in British Columbia. By R. H. ALLEN.
Eng. and Min. Jour. Vol. LXXXVIII., No. 23, p. 1101.

The ore occurs as an immense body, or series of bodies, lying along the contact between a white crystalline limestone and a green fissile epidotic material, which may be either altered argillite or green-stone tuff. The ore consists of magnetite, chalcopryite, and pyrite, intermixed with calcite, actinolite, garnet, epidote, and quartz, and is a metasomatic replacement of both wall rocks. S.

The Centre Star Group of Mines, Rossland, B. C. By R. H. ALLEN.
Eng. and Min. Jour. Vol. 89, No. 1, p. 17.

The country rock is a series of Carboniferous sediments, chiefly slates, cut by a monzonite which is surrounded by a border of augite porphyrite and diorite-porphyrite. The ore-bodies occur in both the sedimentary and igneous rocks and are impregnations and replacements of the country rock. The ores are pyrrhotite, pyrite, and chalcopryite, and were deposited from ascending heated solutions. S.

The Whitehorse Copper Belt, Yukon Territory. By R. G. McCONNELL.
Can. Geol. Surv. Bull. No. 1050, 1909. 58 pages with maps and illustration.

These ore-bodies belong to the type of contact metamorphic deposits, and occur along the contact of granite and limestone. The contact minerals are magnetite, hematite, bornite, and chalcopryite. These deposits differ from ordinary contact deposits in that the intrusive is itself intensely mineralized over a large area. Small bodies of ore are even found wholly enclosed in the granite. Deposition is due to liquid and gaseous emanations from the cooling intrusive

magma. The mineralizing solutions have ascended through the porous limestone and along joints in the previously hardened portion of the intrusive. Future development is encouraged. A.

Copper Deposits of Silverbell, Arizona. By C. F. TOLMAN, Jr. Min. and Sci. Press. Vol. 99, No. 22, pp. 710-712. 1909.

States briefly that the ores occur in (1) contact bodies in limestones; (2) disseminations; (3) fissure veins in alaskite-porphyry; (4) fissure veins at some distance from the porphyry. The first of these seems to be the most important. The ore bodies occur as irregular lenses along dikes of rhyolite-porphyry in the limestone. The ore consists of chalcopyrite, pyrite, molybdenite, and wulfenite. The writer states that the ore is primary and that there is no sign of secondary enrichment. A.

Mining in the Santa Rita District, New Mexico. By C. A. DINSMORE. Min. World. No. 21, Vol. XXXI., pp. 1028-29. 1909.

Briefly notes that extensive ore bodies have been located in the "porphyry." These deposits have been followed down for several hundred feet, and are frequently located in the valleys. A.

GOLD.

The Geology of the Goldfields of British Guiana, by J. B. HARRISON, with historical, geographical, and other chapters by F. FOWLER and C. W. ANDERSON, and an appendix giving the laws and regulations concerning the mining industry. Dulau: London. 1908. 8vo, 10 + 320 pp. Price 5s.

Describes general topography, geology, and petrography, descriptive geology of the various districts, and the occurrence and origin of the gold. The gold is believed to be derived from basic igneous rocks, and to be present in the soil waters. Experiments in proof of the latter are described. (Geol. Zent., 13, 10, 1909, p. 452.) L.

Notes on the Rainy River District, Ontario. By W. L. FLEMING. Eng. & Min. Journal. Vol. 88, No. 22, p. 1064.

. The workable ores occur in shear zones of a N.E.-S.W. strike in green diorite. The gold occurs both free and as auriferous pyrites in both quartz and diorite. Traces of platinum are found in all ores. S.

Quartz Mining in Yukon Territory. By G. A. R. LEWINGTON. Min. and Sci. Press. Vol. 100, No. 1, 1910, pp. 65-66.

This deposit has been called a stockwork paralleling a fissure vein in schist. The gold occurs in the fissure vein, which consists of 4 feet of quartz on the footwall with 10 feet of blue clay on the hanging. The values extend to the hanging-wall. A.

The Boicza Gold Mines in Hungary. By N. B. KNOX. Min. and Sci. Press. Vol. 100, No. 1, 1910, pp. 31-34.

Briefly states that the country rock is a complex of melaphyr and quartz-porphry, which is more or less kaolinized and propylitized. The ore occurs in four types—(1) "gauch" veins, with the gold in the cementing material; (2) stockwerk; (3) normal fissure veins; (4) a combined fissure and stockwerk. A.

Report upon the Auriferous Deposits of Barrambie and Errolls and Gum Creek and Wiluna. By C. G. GIBSON. Geol. Surv. of Western Australia. Bull. No. 34, pp. 40, 2 maps, 3 plates, 6 photographs.

The last named locality is the most important, here the ore deposits are of two types: (1) quartz reefs; (2) "lodes." The "lodes" are sheared zones along which the auriferous solutions passed. Within the zone of weathering, the rock is much shattered and solutions have spread over a larger extent, causing the ore-body to appear larger than it actually is. The writer considers that the solutions had a deep-seated origin. A.

Gold Fields of Surigao Peninsula, Mindanao. By M. GOODMAN. Min. World. No. 20, Vol. XXXI., 1909, pp. 977-978.

The country rock consists of chloritized and serpentized schists which have become disintegrated. The placer gold is derived from quartz and calcite stringers which are numerous in the schists. The benches that are worked are situated from ten to thirty meters above the creek. A.

The Gold and Copper Deposits of the Phillips River, Goldfield. By H. P. WOODWARD. Geol. Surv. of West Australia. Bull. No. 35, pp. 104, 2 maps, 8 plates, 7 photographs.

The geology and mines are described in some detail, but very little is said about the ore deposits. The ore occurs in cupriferous and auriferous dikes, also in silicious and ferruginous material, filling fractures. A.

The Black Range Mining District, New Mexico. By J. W. WRIGHT. Min. World. No. 20, Vol. XXXI., 1909, pp. 979-981.

States somewhat briefly that the ore is found in fissures, one of which is traceable for about fifteen miles. The ore bodies are in granitoid rocks and are highly silicious. The writer states that ascending solutions have deposited in these fissures quartz, pyrite, and chalcopyrite, while later surface waters have oxidized the sulphides and set the gold free. A.

IRON.

Iron Ore Deposits along the Ottawa and Gatineau Rivers. By F. CIRKEL. Mines Branch of the Dept. of Mines, Ottawa, Canada, 1909. 147 pages, with maps and illustrations.

Describes in some detail various iron ore deposits in this area. The method of treatment of the ores is also discussed. A.

LEAD.

Missouri Bureau of Geology and Mines, Vol. IX., Part I. and II. E. R. BUCKLEY.

The geology and ore deposits are described in detail. The original sources of the metallic minerals are the granite, rhyolite, and diabase of Pre-Cambrian Age. The lead was dissolved from these igneous rocks and precipitated partly in the igneous rocks themselves and partly in the ocean along with the sediments. This process was repeated during succeeding periods. Final concentration was caused by descending waters depositing the galena in pre-existing cavities.

S.

MANGANESE.

Über das Vorkommen von Manganerzen bei Wandeltitzen nächst Völkermarkt in Kärnten. By R. CANAVAL. Jahrb. d. naturhist. Landesmus von Kärnten. H. XXVIII., 1909, pp. 357-368.

Describes stratigraphy and ore occurrence. The ore is psilomelane in residual soil, resting directly upon limestone, but derived in part from green schist which overlay the limestone. (Geol. Zent., 13, 11, 1909, p. 507.) L.

TUNGSTEN.

The Main Tungsten Area of Boulder Country, Colorado. By R. D. GEORGE. Proc. of the Col. Sci. Soc. Vol. IX., pp. 181-216.

Describes somewhat fully the various tungsten minerals with analyses of each. The country rock is granite and gneiss. The ore is found in fissures caused by frequent movements evident in the district. The ore minerals occur as a crustification about the rock fragments; in irregular granular masses; and in crystal form. A.

NON-METALLIFEROUS DEPOSITS.

ASBESTOS.

The Production of Asbestos in Canada. By J. MCLEISH. Can. Min. Jl. Vol. 30, No. 23, pp. 714-717, 1909.

In a series of tables, in concise form, it gives the production of asbestos in Canada since 1880. These tables show a steady increase

in the total production of the previous year. The total production of asbestos and asbestic in 1908 amounted to 90,773 tons (short) valued at \$2,573,335. About four fifths of the output was exported to the United States. A.

ASPHALT.

Asphaltgänge im Quarzporphyr von Dossenheim bei Heidelberg. By W. SALOMON. Ber. über die Versamml. des Oberrh. geol. Ver., 42. Versamml. zu Heidelberg, 1909, pp. 116-122.

Asphalt, coating quartz crystals, is found in joints of the porphyry. The origin, whether organic or inorganic, is not certain, though the author favors the inorganic. Chemical analyses by E. Ebler are appended on p. 123. (Geol. Zent., 13, 12, 1909, p. 547.) L.

Ozokerite in Utah. By H. W. MACFARREN. Min. and Sci. Press. Dec. 11, 1909, pp. 789-790.

Very briefly describes the deposit as unique on this continent; a similar deposit is worked in Galacia in Austria. The deposits lie in shear-zones, shales, shaly sandstone, and limestones of Tertiary age, and are contiguous to extensive deposits of carbons and hydrocarbons. The ozokerite is said to be the residual product of petroleum, having a paraffin base. Since it was forced into the fissures, the lighter hydrocarbons have become volatilized. A.

CLAY.

China-Clay and Fire-Clay Deposits in the Rajmahal Hills, India. By M. STUART. Rec. Geol. Surv. of India. Vol. XXXVIII., Pt. 2, 15½ pages, 1909.

DIAMOND.

The Diamond Deposits of Luderitzland, German South-West-Africa. By H. MERENSKY. Trans. Geol. Soc. So. Africa. Johannesburg, 1909, Vol. XII., pp. 13-23.

Describes geologic structures of the region and the occurrence of the diamonds. The latter are found in a residuum of wind-eroded Cretaceous sandstone. (Geol. Zent., 13, 11, 1909, p. 455.) L.

COAL.

The Coal Fields of Manitoba, Saskatchewan, Alberta and eastern British Columbia. By D. B. DOWLING. Can. Geol. Surv. Bull. No. 1035, 1909. 111 pages, with illustrations and map.

The writer describes in detail the coal-bearing formations and the various seams. Extensive and useful analyses of the coal from vari-

ous seams are given. The three coal horizons are: (1) Edmonton formation (in Alberta), and Laramie (in Saskatchewan); (2) Belly River (Judith River) formation; (3) Kootanie formation. An estimate has been made of the coal content in these provinces as follows: Alberta, 89,330,000,000 tons; Saskatchewan, 18,000,000,000 tons (lignite); Manitoba, 160,000,000 tons (lignite); Eastern British Columbia, 36,000,000,000 tons (bituminous). A.

GRAPHITE.

The Santa Maria Graphite Deposits, Mexico. By F. L. HESS. Min. World. Vol. XXXI., No. 22, pp. 1078-80, 1909.

The graphite deposits occur as irregular lenses, most of which vary from 8 to 10 feet in thickness, while a few are even much thicker. The wall rock is either sandstone or granite. In some places it is impregnated with graphite, while in others it is absent. A.

MEERSCHAUM.

Über den bosnischen Meerschäum. By F. KATZER. Berg- u. Huttenmänn. Jahb. der K. K. Mont. Hochschulen. 1909, H. 1, pp. 1-24.

Describes two meerschäum deposits. One forms irregular masses and pockets in magnesite veins which cut serpentine; the other is a conglomerate of which meerschäum is a constituent. (Geol. Zent., 13, 12, 1909, p. 547.) L.

PHOSPHORUS MINERALS.

Note sur les filons de phosphorites de Logrosan dans la province de Caceres. By P. CHAUFFAT. Mém. de la Société belge de géologie, de paléontologie, etc. T. XXIII., 1909, pp. 97-114.

The author describes the veins, long abandoned because of litigation, and shows that the values are not limited, as previously supposed, to shallow depths. (Geol. Zent., 13, 11, 1909, p. 508.) L.

Les phosphates du Pacifique. By H. COURTET. Bull. Soc. Acclimatization. 1909, pp. 279-288.

Reviews history of discovery; shows the total production (300,000 tons in 1907); estimates the approximate amount of material available in certain deposits (totalling 25 to 28 million tons); assigns origin to the action of guano on the subjacent rocks. (Geol. Zent., 13, 11, 1909, p. 58.) L.

WATER.

Geology and Underground Waters of South Dakota. By N. H. DARTON. Water Supply Paper, No. 227. U. S. G. S. 149 pages with illustrations and maps.

Describes fully the various sedimentary formations in the state, determined in part from deep well borings, and discusses the probable supply of artesian waters. The Dakota sandstone, which is the most extensive formation, is the principal source of the artesian water, while the Brenton shale is taken as an horizon of second importance.

A.

Surface Water Supply of the United States, 1907-8. Part II., South Atlantic Coast and Eastern Gulf of Mexico. Prepared under the direction of M. O. LEIGHTON by M. R. HALL and R. H. BOLSTER. Water Supply Paper, No. 242. U. S. G. S. 1909, 215 pp.

Describes the drainage basins of many of the more important rivers in the South Atlantic States, and in eastern Gulf of Mexico. The stream-flow data serves of use in problems of navigation, irrigation, domestic water supply, water power, swamp and overflow land drainage, and flood-prevention.

A.

REGIONAL REPORTS.

Les mines de l'Afrique occidentale française. By J. CHAUTARD. Bull. Office Colonial. June, 1909. Supplément.

Describes the occurrence of several metallic and non-metallic products. Of these only gold, iron, and petroleum are of present economic importance. Further exploration may discover workable deposits of manganese, aluminum, copper, phosphates, and salt. (Geol. Zentralb., 13, 11, 1909, pp. 505-506.)

L.

Die Erzlagertstätten von Cartagena in Spanien. By R. PILZ. Zeit. f. prakt. Geol. Jg. XVI., 1908, H. 5, pp. 177-190.

Describes the general geology and the ore-deposits. The latter are chiefly argentiferous galena, blende, and pyrite, with secondary cerussite and limonite; also tin ore with barite. The ores are thought to be secondary after stanniferous pyrite.

A Descriptive Sketch of the Geology and Economic Minerals of Canada. By G. A. YOUNG. Can. Geol. Surv. Bull. No. 1085, 1909, 146 pages, 82 illustrations and 2 maps.

Map No. 1042, on a scale of 100 miles to the inch, shows the localities at which economic minerals have been found, while No. 1084 outlines the geology of the Dominion as known to-day. The writer divides the area into six divisions, and describes under each the economic geology, also the character and mode of occurrence of certain deposits in tabulated form. These divisions are: (1) The Appalachian Region; (2) St. Lawrence Lowlands; (3) Laurentian Plateau Region; (4) Arctic Archipelago; (5) The Interior Continental Plain; (6) The Cordilleran Region.

A.

ORE-DEPOSITS.

Outcrop of Ore-bodies. By W. H. EMMONS. Min. and Sci. Press. Vol. 99, No. 23, pp. 751-754 and Vol. 99, No. 24, pp. 782-787, 1909. Illus.

This is an interesting and instructive treatise and one full of facts and examples. The writer considers the discovery and study of the outcrop of the ore-body of prime importance in resolving the economic history of the district. From a study of the "topographic expression" of the outcrop, the writer shows how it is possible to interpret the extent of the deposit and the changes which may take place with depth. Useful notes are given on the outcrops of gold, silver, copper and lead deposits. A.

Lehre von den Erzlagerstätten. By R. BECK. Dritte, stark umgearbeitete Auflage in zwei Bänden. Ersten Band, mit 205 Figuren und einer Gangkarte. Zweiter Band, mit 318 Figuren. 32 Mark. (Berlin Gebrüder Bornträger.)

Deals with genesis and characters of ore deposits. A.

UNCLASSIFIED.

Granites. By G. SURR. Min. and Sci. Press. Vol. 99, No. 22, pp. 712-14. 1909.

Gives an interesting outline of the character, and the mode of occurrence and formation of the different varieties of granite; also notes the minerals of economic value which may be associated with them. A.

Mineral Resources of the United States for 1908. U. S. G. S. 1909. Advance chapters on

- (1) The cement industry. By E. C. ECKEL.
- (2) Antimony, Arsenic, Bismuth, Selenium, and Tellurium. By F. L. HESS.
- (3) Tungsten, Nickel Cobalt, Vanadium, Titanium, Molybdenum, Uranium and Tantalum. By F. L. HESS.
- (4) Mineral Paints. By E. F. BURCKARD.
- (5) Precious Stones. By D. B. STERRETT.
- (6) Tin. By F. L. HESS.
- (7) Sulphur and Pyrite. By W. C. PHALEN.
- (8) Petroleum. By D. T. DAY.
- (9) Silver, Copper, Lead, and Zinc in the Central States. By B. S. BUTLER and C. E. SIEBENTHAL.
- (10) Platinum. By D. T. DAY.
- (11) Mica. By D. B. STERRETT.
- (12) Gas, Coke, Tar, Ammonia at Gas Works and in Retort Coke Ovens and of Gas and Tar at Water Gas Works. By E. W. PARKER.

(13) Iron Ores, Pig-Iron and Steel. By E. C. HARDER and W. T. THOM.

(14) Asbestos. By J. S. DILLER.

(15) Gypsum and Gypsum Products. By E. F. BURCHARD.

(16) Graphite. By S. T. BASTIN.

(17) Glass sand, other sand and gravel. By E. F. BURCHARD.

(18) Fluorspar and Cryolite. By E. F. BURCHARD. A.