As a check on the field work and also for the purpose of making tests which required special apparatus, samples of shale were distilled under the supervision of Mr. Day. The laboratory tests included distilling the shale in a regular distilling flask, using 100 grams for a charge. The flasks were heated electrically in the usual way and it was found possible to continue the heating until the glass melted. It was found also that when this stage had been reached practically all the volatile matter had been distilled from the shale, leaving a crumbling dry coke. The gases given off were collected and also the ammonia water. The percentage of ammonia was determined in the general chemical laboratory.

The shale oils obtained in Scotland and elsewhere and those obtained in the present series of distillations are characterized by a large proportion of unsaturated hydrocarbons, involving a considerable loss when these oils are refined. In refining them it is not necessary to remove all these unsaturated hydrocarbons but only those which prevent the manufacture of comparatively colorless and odorless oils by the usual refining process. The proportion of these compounds differs greatly in shales from different parts of the world.

BOOK REVIEWS

IRON ORES OF LAKE SUPERIOR—By Crowell & Murray — The Penton Publishing Company, Cleveland, Ohio—For sale by Book Department, Canadian Mining Journal.

This is the second edition of a very useful work on the Iron Ores of the Lake Superior region. It is largely a compilation of material which has appeared in the various trade journals, geological reports, and technical societies' transactions. The material has been rewritten and corrections made.

The several chapters deal with the early history of the region, geology, mineralogy, production of ore, dock equipment, classification of ores, beneficiation of ores, methods of analysis, fuel, engineering, location and description of mines.

Several maps accompany the text. Interesting features of the volume are the description of methods used in exploring, mining and transporting the ore.

A useful part of the book is the statement of production and character of ore from each mine in the Lake Superior district.

RECENT COPPER SMELTING—Edited by Thos. T. Read—Published by the Mining & Scientific Press, San Francisco, and the Mining Magazine, London—Price $2.50—For sale by Book Department, Canadian Mining Journal.

This is a compilation of recent articles on copper metallurgy, and is intended to present in convenient form the views of well known engineers on current practice in all parts of the world.

Most of the articles have appeared in the pages of the Mining & Scientific Press during the past four years. Some are from the publications of the American Institute of Mining Engineers.

As the metallurgy of copper has made great strides in the last decade, it is very difficult for the copper metallurgists to keep in touch with practice as it is developed. Greater advance has been made in the metallurgy of copper than in any other metal during recent years. These advances are indicated in publications of the technical journals and mining institutes. A real service has therefore been done by Mr. Read in putting together papers on the subject which are otherwise not readily available.

CRYSTALLOGRAPHY—By T. L. Walker, M.A., Ph.D. Professor of Mineralogy and Petrography, University of Toronto—Price $2.00—McGraw Hill Book Co.—For sale by Book Department, Canadian Mining Journal.

This book has been written to present a connected elementary statement of Crystallography along the lines developed by Dr. Victor Goldschmidt, of Heidelberg.

HANDBOOK OF MILLING DETAILS—Compiled from the Engineering & Mining Journal, by the Editorial Staff—Price $4.00—McGraw Hill Book Co. —For sale by Book Department, Canadian Mining Journal.

This book is a collection of articles that have appeared in the Engineering & Mining Journal during the last two or three years under the general head of "Details of Metallurgical Practice." The character of the book is in all respects the same as "Handbook of Mining Details."

The compilation covers the publications from November, 1909, to December, 1913, inclusive.

It is a handbook that is a more or less random collection of useful information, rather than a treatise.

While the major part of the book is devoted to milling, there is also some information included concerning smelting and refining practice.

USEFUL MINERALS AND RARE ORES—By Alex. McLeod,—Jno. Wiley & Sons, Renouf Publishing Co., 25 McGill College Ave., Montreal, Canadian agents —Price $1.25—For sale by Book Department, Canadian Mining Journal.

This book has been written to furnish simple means for the determining of useful minerals. Practical instructions that will aid in the search for and the determining of the useful minerals and rare ores, are given. The author claims that absolutely no skill is required to carry out any of the tests, and the apparatus required is very inexpensive.

Among the subjects dealt with, are: Prospectors' pan, the streak of minerals, hardness, prospecting hints, preliminary tests, surface changes, surface indications, apparatus and chemicals required for testing, hints on testing, methods of testing for the several metals, tables for determination of minerals, distinguishing tests for minerals which resemble one another.

This little book is not intended for mineralogists, but should be useful to those without experience who wish a guide in the search for minerals.

THE MINING WORLD INDEX OF CURRENT LITERATURE—Vol. V. First Half Year, 1914—By Geo. E. Sisley, Associate Editor Mining and Engineering World, Chicago.—For sale by Book Department, Canadian Mining Journal.

This volume covers the world's literature on mining, metallurgy and kindred subjects, and embraces all reference of any importance to the literature of the field it exclusively represents. It is of great assistance in the search for information. The plan is simple and the list of articles complete.