

### GRAPHITE CONCENTRATION.

Mr. H. P. H. Brumell has for years constituted himself the champion of Canadian graphite. A long and discouraging fight was necessary before the Canadian product was granted a place on the world's markets. Also the problems that surrounded the separation of this mineral from its gangue were peculiarly difficult. To removing both the commercial and the technical obstacles Mr. Brumell has given his undivided attention. His paper, appearing on other pages of this issue, gives the reader a brief view of the history of the graphite industry in Quebec and Ontario, with especial reference to ore treatment.

The disseminated graphite ores of Labelle County, Quebec, and of Renfrew and Lanark, Ontario, are essentially graphite schists, in which quartz and feldspar predominate largely over other minerals. The small difference that exists between the specific gravities of these two minerals and that of graphite gives but little leeway for mechanical separation. Wet concentration formerly obtained altogether. The old stationary buddles, following wet stamping, gave a concentrate assaying 60 per cent., from a 10 per cent. ore. Among other devices, the Brumell separator replaced the buddles. Next the concentrates from the Brumell separator were dried and treated on Hooper tables. Now, at the mill of the Buckingham Graphite Company, the whole system is one of dry concentration.

Mr. Brumell characterizes this mill as being, to the best of his belief, the only one producing graphite commercially from disseminated ore. He further states that in such a plant ore carrying about 12 per cent. of graphite is concentrated up to from 75 to 86 per cent., and the concentrates finished to stocks assaying from 70 per cent. to 96.5 per cent.

The paper, "Graphite Concentration," is a worthy contribution to the literature published by the Canadian Mining Institute.

### THE COAL AND IRON-ORE SUPPLIES OF THE UNITED STATES.

Utilizing all available statistics and data, competent specialists have calculated that all the easily accessible coal known to exist in the United States will be exhausted by the middle of next century. The supply of high-grade iron ores now available will diminish to the vanishing point before 1950.

These statements, if even approximately correct, carry a tremendous lesson. Canada's iron ore resources are hardly touched. Her coal supplies, especially in the West, are sufficient for many decades. Yet neither commodity exists in exhaustless quantity. Canada will probably reach the highest development when our neighbour's annual outputs shall have begun to decrease. It is inevitable that we shall be called upon to supply both iron ore and coal for the greater part of

the continent. We shall be a richer and a greater people if, instead of crude iron ore, we sell iron and steel. To this end we must, to some extent at least, provide for retaining control of our fuel resources.

The thought that Canada, through her mineral industries, must ultimately dominate the continent, savours of arrogance—so not seldom does destiny.

### AN INVALUABLE INDEX.

The public has long been indebted to the American Institute of Mining Engineers for enriching the literature of mining with large numbers of monographs, essays, scientific discussions and descriptive papers of all kinds. These assume permanent form in the shape of large and costly annual volumes. Not many persons are lucky enough to possess, or to be able to purchase, a complete set of these volumes. They are accessible, however, in numerous public and reference libraries.

Scattered throughout these volumes are numberless special papers, allusions to processes, and all manner of material that is occasionally of vital interest to individuals.

Lately the Institute has published a General Alphabetical and Analytical Index, covering all the Transactions from Volume I. (1871) to Volume XXXV. (1904). The labour and expense entailed in compiling this 700-page index must have been enormous. The end justifies the time and expenditure lavished upon it.

To those who own sets of the Transactions, the Index opens up every page, and saves an infinity of time. For those who do not possess the annual volumes, the Index is the only possible substitute.

### IMPERIAL FEDERATION.

Seeking the co-operation of sister societies in Australia, Canada, and South Africa, the Institution of Mining and Metallurgy resolved to invite the Presidents of these respective bodies to accept, *ex officio*, election as Honorary Members and Corresponding Members of Council of the Institution. The invitation was extended to the Australasian Institute of Mining Engineers, the Canadian Mining Institute, and the Chemical, Metallurgical and Mining Society of South Africa. It was readily accepted.

It may be noted that Corresponding Members of Council have the privilege of attending and voting at Council meetings.

This federation, loose though it may be, is certain to produce beneficent results. Membership in the Institution of Mining and Metallurgy gives definitive and honourable standing. Closer connection between the mining societies of the four principal sections of the British Empire will brighten and benefit each and all.

To us this seems to be the healthiest combination of Imperial sentiment and Imperial brains.