

The question of the establishment of the proposed new Department of Mines was also discussed and the local secretary was authorised to wire to Hon. the Minister of the Interior endorsing the proposal to establish such a Department and urging its organisation at the earliest possible opportunity.

At the meeting there was exhibited a very handsome series of phlogopite crystals from the Stoness-Kent mine, and some very fine samples of molybdenite from the Chisholm mine near Kingston.

The Section adjourned to meet again at the call of the chairman.

EASTERN TOWNSHIPS BRANCH.

A meeting of the Institute for the purpose of organising a local Section to the Eastern Townships was held in the Council Chambers, Sherbrooke, Que., on Tuesday evening, 10th June. Mr. George R. Smith, M.L.A., General Manager of the Bell's Asbestos Company, was called to the chair.

The Chairman, in opening the meeting referred to the influence and importance of the Institute which had done much to promote the interests of the mining profession in Canada. The mining industries of the Eastern Townships were not heard of very much in the papers, for they had no stock to sell, or schemes to unload, but he ventured to say that their asbestos, chrome and copper mines would take rank industrially with any other of the mining industries of Canada. While at the moment they were not threatened by taxation on the products of their mines, there had been some talk, and there were some people who openly advocated an export duty on asbestos, so that it was well to be prepared to meet any such emergency. Such emergencies could best be met by organisation. A local branch of the Institute would give facilities for local mining men to meet together, and would, doubtless, be made an excellent medium for advancing the great mineral wealth they knew existed in the Eastern Townships.

Mr. B. T. A. Bell, secretary of the Institute, explained that the main idea the Council had in organising these branches was to give greater opportunities for local mining men to meet together than were afforded by the annual meetings of the Institute. By the formation of such a branch in Sherbrooke he thought much could be accomplished on behalf of the mines and mineral wealth of the district.

Mr. S. W. Jenckes, Sherbrooke, moved "That the Eastern Townships Branch of the Canadian Mining Institute be now formed." Mr. Jas. R. Pearson, Danville, seconded the motion. The chairman put the motion which was carried unanimously.

The following gentlemen handed in their names for election as members subject to the approval of Council: Jas. R. Pearson, Managing Director, Asbestos and Asbestic Co. Ltd., Danville; H. J. Williams, Manager, Beaver Asbestos Co.; J. A. Dresser, M.A., Richmond, Que.; Jas. R. Woodward, Wm. Farwell, James MacKinnon, W. S. Dresser, of Sherbrooke, and P. L. G. Mackenzie M.L.A., of Richmond.

The following committee of management was elected:—

George R. Smith, M.L.A., Bell's Asbestos Co., Chairman.

H. J. Williams, Beaver Asbestos Co., Thetford Mines.

S. L. Spafford, Nicholls Chemical Co., Capelton.

John Blue, C. & M.E., Eustis Mining Co., Eustis.

Jas. R. Pearson, Asbestos and Asbestic Co., Danville.

B. Bennett, King Bros., Thetford Mines.

James S. Mitchell, Sherbrooke, Que.

A. S. Johnson, Johnson's Co., Thetford Mines.

R. T. Hopper, Standard Asbestos Co., Montreal.

J. Dresser, M.A., Richmond.

Mr. Jas. R. Woodward, Sherbrooke, was elected secretary *pro tem*.

Mr. C. C. Hansen, Montreal, read a very interesting paper on the subject of "Power Drills" which we hope to reproduce in a future issue of the REVIEW.

Mr. F. Stacey Shirley read a paper on the Electric Drills, in which he described the new Gardner electric machine.

COPPER-BEARING ROCKS OF THE EASTERN TOWNSHIPS.

Mr. J. A. Dresser, M.A., Richmond, presented the following abstract of his paper read before the Montreal meetings of the Institute:—

"The copper-bearing rocks of the Eastern Townships of the Province of Quebec have long been known to comprise three principal belts which run approximately parallel to the northeasterly trend of the Green mountains in their extension into Canada. These belts are about twenty-five miles apart where crossed by the St. Francis river, and are themselves some two miles wide in each case along that river although elsewhere they are often considerably wider.

The most westerly of these, which is the first met in approaching the

district from the St. Lawrence valley, is an extensive band of limestone which is sometimes associated with glossy black slates or graphitic shales. Small igneous intrusions are known to occur in the vicinity of most of the copper deposits of this belt, and in some cases the igneous rock itself carries copper. The best known deposits in this band are the once famous Acton Mine, the adjacent deposits at Upton, as well as the mines formerly worked at Roxton, Wickham and St. Flavien.

The central, or Sutton, belt contains amongst others the Harvey Hill mine at Leeds, the Halifax in the township of that name, the Viger in Chester, the St. Francis in Cleveland, the Belrath in Melbourne, and Sweet's mine in Sutton. The country rock of this belt has been generally described as chloritic, micaceous, talcose or nacreous slate and has been regarded as sedimentary in origin and the correlation of various deposits has been made on that assumption. Within the last two years, however, it has been found by the writer that these rocks in most cases at least are disguised volcanics of early geological age and much altered in character. Copper is found, not in true veins, as far as observed, but in lenticular masses conforming to the well-developed cleavage of the rock. The gangue is commonly calcite and quartz, and the character of the deposits such as to indicate their deposition contemporaneously with the gangue. The secondary derivation of the ore from the country rock is further evidenced by the fact that the latter commonly yields a small percentage of copper on assay.

Still more recently a similar discovery regarding the nature of the rock in the Ascot belt, the most easterly of the three bands, has been made by Mr. G. H. Pierce, C.E. This area includes, amongst many others, the widely known Albert and Eustis mines at Capelton, the Howard and others at Suffield, the Ascot and the Sherbrooke, nearer the City of Sherbrooke, the Moulton Hill, a few miles east of the St. Francis river, and the Garthby deposits, forty miles farther eastward. The country rock has not been usually described as differing essentially from that of the Sutton belt in general character, unless it be that the micaceous and nacreous slates have been to found predominate in the former while the chloritic prevail in the latter.

During the course of a recent visit to the Suffield mines, Mr. Pierce observed a massive appearance in the hanging wall of the Silver Star mine which suggested to his practised eye the probability of its igneous origin, although the sedimentary character of the rock, a supposed sandstone, had not been hitherto questioned, as far as can be learned, by the many previous observers of it during the past fifty years. A specimen which was handed the writer by Mr. Pierce proved, on microscopic examination, to be a quartz porphyry, the rapidly cooled equivalent of a granite.

As the rock was known to be one of considerable extent, specimens were subsequently taken by the writer at various points across the belt between Sherbrooke and Lennoxville and from several of the nearest mineral deposits. From these it is apparent that the Ascot belt, like that of Sutton, is a complex mass consisting chiefly of old and highly altered volcanic rocks.

The whole igneo metamorphic complex is occasionally cut by dykes which from their undisturbed position and fresh state of preservation are evidently of a very much later age than the main rock masses. The dykes were the latest rocks to form in the region, while the country rocks were the earliest, thus showing this belt to have been the scene of volcanic eruptions at very widely different times, at one or more of which the lavas ejected carried copper, silver and gold. From the fact that the ore bodies in many instances follow the cleavage of the rock, the form thus given the deposits causes them to easily simulate bedded veins which they have commonly been thought to be, owing to the cleavage having been generally mistaken for stratification. In view, however, of the igneous character of the country rock, the correlation of various deposits on assumed stratigraphical grounds becomes useless both in the case of the Ascot and of the Sutton belts, and opinions regarding the mode of occurrence of the ores also call for revision.

Concerning the deposits of the Ascot belt, Dr. Ellis wrote in the Report of the Geological Survey, 1888-1889, (p. 56 K). "it may be very safely predicted that the real value of many of the mines which were opened twenty-five years ago and speedily closed, has never been ascertained, and that other masses of ore of equal importance to those so long worked, will, at some not distant date by careful prospecting be found. Much of the failure of twenty-five years ago was, doubtless, due to the speculative character of the work done. Mines were bought and sold on the flimsiest sort of evidence as to their value or worthlessness; often on samples which were obtained from an entirely different location from that represented. The growing importance of these ores as a source of supply for sulphuric acid is being fully realized by the men interested in this industry in the United