



• Noon Hour at the Chetleamp Copper Company's Mine.

Geology—The Chetleamp Mining District lies partly within the Carboniferous and partly within the Pre-Cambrian formations. The former generally contributes the undulating and fertile country and consists of conglomerates, sandstones, limestones and gypsum, while the latter contributes the plateau and more rugged country and consists of felsites, syenites and other granitic rocks, together with chlorite, hydromica and hornblende schists. Both formations are frequently invaded by beds and dikes of trap. Three series of the carboniferous are here represented, viz., the Middle, Lower and Metamorphic. In the Pre-Cambrian the schists are the greatest ore contributors, although the granitic are frequently metalliferous. The rocks in which the Company's deposit occurs belong to the Pre-Cambrian system, which, as is generally known, consists in part of the oldest stratified rocks, and which is noted throughout the world for its wonderful ore bearing qualities—a great part of the useful and precious metals being derived from it. The principal mineral deposits of the district consist of beds or belts of ore bearing schist, some of which are of immense thickness. Phenomenal values have been shown at some of the deposits, but so far as known the district is essentially a low grade one, as are most of the important mining districts of the world.

The Company's copper deposit and the principal ore deposits within a radius of one and a half miles of it (arsenopyrite, galena and pyrrhotite) are contained in a belt of hydromica and chlorite schists from three-quarters to one and a half miles wide, confined principally to the drainage area of the L'Abime and Dauphine Brooks and bounded on the east and west by granite ranges. The uplifting of these ranges was accompanied by intense volcanic activity and sheets and dikes of molten rock were forced into the schists. The pressure produced by these convulsions threw the latter into a series of wave-like undulations, crushed, faulted and fissured them and thus developed those physical conditions which are essential to the birth of a mining district. The copper deposit consists of several beds aggregating not less than two hundred and fifty feet in thickness of hydromica and chlorite schists impregnated with copper pyrites. These schists have been thrown into an anticlinal fold and rest on what may be termed the McLeod Brook series which are of considerable but undetermined thickness. The rocks of the McLeod Brook series also carry sulphides disseminated through them but there is, as a rule, considerable difference in the nature of the sulphides carried by the two series. The nature of the rocks overlying the copper series has not yet been determined but the data so far collected indicates that they possess characteristics similar to the underlying formations.

* Official reports on the geology of the district by Dr. E. Sterry Hunt, Dr. J. E. Woodman (Harvard) Sir J. William Dawson, Mr. Hugh Fletcher, Professor H. Y. Hind and Mr. John Campbell and private reports by Mr. P. S. Hamilton, Mr. W. H. Kinnon and Mr. M. V. Grandin are available at the office of the Company.