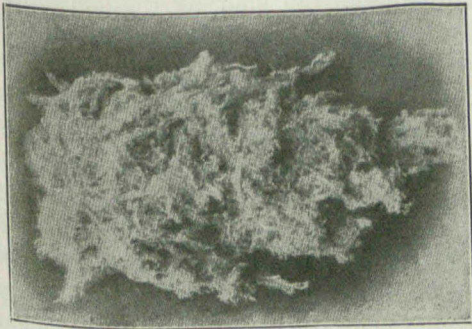


**MINING ASBESTOS, OR MINERAL WOOL.\***

BY AUBREY FULLERTON.

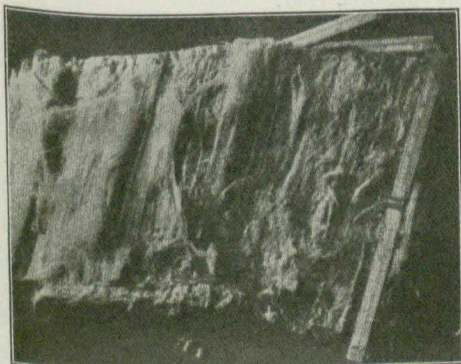
Known to some extent in ancient Greece and Egypt, the existence and uses of asbestos seem afterward to have been forgotten until quite recent years. The revival dates from about the beginning of the last century, when mines were opened in Northern Italy.



FIBERIZED ASBESTOS READY FOR THE MARKET.

Since 1866 the Italian mines have been the chief source of supply in Europe, and until twenty-five years ago they were the only mines in the world. At the present time, however, asbestos is being mined in varying quantities in Russia, Australia, and Africa, and most largely of all in America. It occurs in some nine or ten of the States, of which Georgia produces the largest quantity and Vermont the highest grades. The veins thus far discovered in the latter state are closely similar in character to those north of the international boundary, where, in the Province of Quebec, is the world's chief storehouse of asbestos. Of the grades suitable for the highest class of manufacture—which, in other words, means the grades suitable for spinning and weaving—Quebec has practically a world monopoly.

What makes one variety of asbestos of greater commercial value than another, and one country's deposits better than those of some other country, is the fiber of the stone; and upon this essential difference is



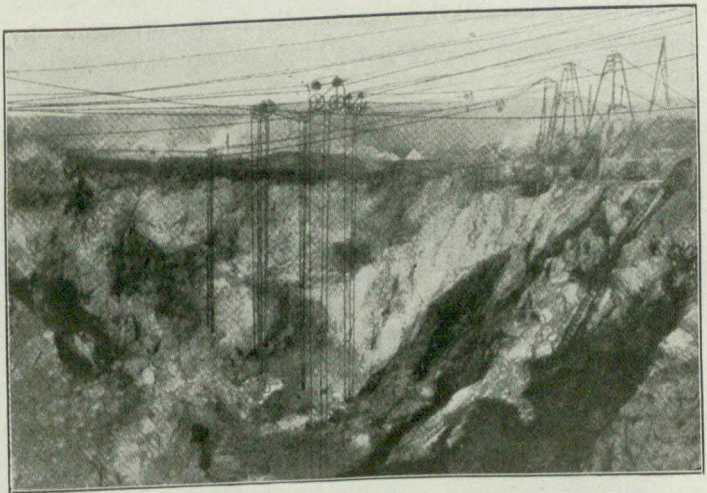
ASBESTOS IN RAW STATE, AS TAKEN FROM MINE.

based the divisions of the natural stone into two quite distinct classes. It is amphibole or actinolite when its crystals occur in long, slender prisms or in radiating masses, whose fibers are harsh and brittle, and whose composition is about 60 per cent. silica and 25 per cent. magnesia; it is chrysolite or serpentine asbestos when its fibers are long, slender, flexible, and easily separable into fine, silky threads that are highly elas-

tic and capable of being spun. Quebec's supply, which is the source of the bulk of the asbestos used in the United States, is of this kind.

Chrysolite, the asbestos of the finer commerce, is in chemical terms a hydrous silicate of magnesia. The Canadian fiber, which is made especially soft and silky by its large percentage of water—over thirteen per cent.—is practically the same as the best Italian fiber; but Italy's supply of chrysolite is small, and so far as known this form of asbestos exists in paying quantities only in Canada.

Geologically it is a fibrous form of serpentine, occurring in strata of crystalline limestone. The serpentine—or verd antique marble, as it is popularly called—is a of greenish color; and the asbestos itself, which is found in small veins or layers, is light yellow or light green, and highly transparent. The veins run in an average thickness of from one-quarter to one-half inch, but sometimes of three, four and even six inches. Since the fiber runs crosswise, the thickness of the vein



QUARRY OF KING BROTHERS' ASBESTOS MINE, THETFORD, QUE.

means also the length of the fiber; and the longer the fiber, the better and more workable is the asbestos.

How this remarkable substance ever came to exist, is a question whose answer dates back to Creation times. Briefly the theory is this: The original rock, thrown up by igneous action, developed cracks and seams as it cooled; and as these rocks changed under the action of water and vapors to serpentine, the seams gradually filled with serpentine deposits from the rock walls in a fibrous structure. The asbestos fibres are, as nearly as possible, crystals of serpentine; hence their inconsumability.

The ore is mined mostly in open quarries. Overlying soil, to a thickness of sometimes twenty or thirty feet, but quite often forming only a thin layer on top, has first to be removed; and as soon as the asbestos veins are thus laid bare, the actual quarrying operations may begin. The rock is cut in a series of terraces, reaching a total depth of sometimes 150 or 200 feet. Underground work has not proved successful, the open quarry having been found both more economical and more effective, despite the disadvantages of exposure to the weather. Drilling and blasting are employed much the same as in ordinary stone quarrying.

When the rock is thus broken up it is rough sorted

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