

A REMARKABLE SUBSTANCE

In common use today is one of the most remarkable substances found in nature—asbestos. It is composed chiefly of silica, magnesia, alumina and ferrous oxide. The fibres formed by this chemical combination are perfectly smooth, and in this respect, they differ from all other fibres. It is really a mineralogical vegetable, possessing the curious properties found in both, for it is at once fibrous and crystalline, elastic and brittle, heavy as rock in its crude state yet light as thistledown when manufactured. Although its fibres are soft, white and delicate, it has the quality of indestructibility, since it withstood the action of the elements since the world began; and, through all the countless ages during which the hardest rocks surrounding it have been reduced, this mineralogical mystery has remained intact, having successfully resisted the assaults of fire, acids and time.

Asbestos is found widely distributed throughout the world, although the principle supply of crude asbestos suitable for the manufacturing of fireproof cloths and theatre curtains comes from Canada, about seventy-five miles from Quebec. The Italian mineral has a fine, silk-like fibre, but is lacking in the essential characteristic of strength. The product obtained from South Carolina has a soft, yellowish, woody fibre, which quickly powders under pressure. The South African asbestos is of a dark slate or black color, with exceptionally strong fibres, but owing to its stiff and horny texture, it cannot be manufactured into a fine fabric, hence the superiority of the Canadian asbestos and its large consumption in the United States.

The mining of asbestos differs radically from the mining of other minerals, since no shafts are sunk. Instead, excavations are made in the open, somewhat like a stone-quarry. Canadian asbestos is found in veins about an inch and a quarter in thickness, and embedded in rock which is easily severed from it. These veins may be either vertical or horizontal. When the rock in which it is embedded is opened we find a snakelike material of a greenish shade. This greenish shade is produced by the reflection of light, but the fibres after they are detached are perfectly white. The act of separating the mineral from its bed of rock is termed "hand-cobbing", and after this process the mineral is shipped to various factories in the United States.

The process of manufacture begins by placing the mineral in a chaser mill which crushes it and divides the fibres without destroying them. The result is a snowy mass of mineral wool. The small particles of rock still clinging to the fibres are removed by a process called winnowing. This is done by means of a blast of air which separates and blows away the foreign matter. The third process is undertaken, which is called air fibre raising, by which the fibres are raised by a current of air produced by a large blower through a vertical inclined at a small angle. This causes those fibres of a coarser texture to be deposited in a compartment near the bottom of the pipe. The medium fibres will be deposited a little higher and the finer fibres will be blown to a higher point while the dust will be carried to the top and deposited. The fibres are in this way sorted into different lots according to their texture and are ready to be made into articles for which they are best adapted. The fluffy material is now treated just as though it were genuine wool sheared from a sheep or pure cotton fresh from the plant. Although it is made in the same way as wool or cotton a special machine is used. This machine, as well as the one used in manufacturing cotton and woollens is called a carding machine. The carding machine straightens out the fibres and lays them parallel. When the fibres come out of the machine they are in the form of unspun threads. Then they are turned into yarn and brought to the point where they can be woven into cloth. Asbestos cloth is 100 percent pure but that which is termed as being commercially pure usually contains from 5 to 20 per cent of combustible matter.

Asbestos is not only used for making cloths and threads, scenic artists use it to paint but they find it more difficult to paint than other materials. Asbestos fibre board is used for flooring and woodwork which can be polished to as high a degree as wood. Long-lasting upholstery and carpets have been made from it also. It may be worked into a pulp and a fireproof paper is obtained which is used on roofs and between walls and floors. A very strong rope can be made from it as well as a high-grade asbestos plaster which is fireproof, soundproof and stays together well when subjected to water.

These are but a few of the known uses, but many new uses for this valuable substance are continually being discovered and as its utility increases so also does the revenue derived from it, which helps to make Canada better and more prosperous.

—WILLIAM TRAINOR '57



Red and White congratulates Bill Cameron and Grace Seaman (above) who, with all members of the cast, gave an excellent performance in "ROMEO AND JULIET."