

SUBSTITUTE FOR HARD RUBBER &c.

His Majesty's Consul at Philadelphia (Mr. W. Powell) has furnished a report on a *new material*, manufactured by a secret process and stated to be a *substitute for hard rubber, cork, horn, etc.* The manufacture is claimed to be simple and cheap. The material is stated to be made mostly of bye-products or waste substances, indeed of anything that contains vegetable fibre, such as horse-dung, cow-dung, waste paper, hay or straw that is unsuitable for fodder, shavings, etc. It is claimed that the material can be turned out with a profit at $4\frac{1}{2}d.$ per lb. Exhaustive tests made in the United States show, it is stated, that electrically it is equal, if not superior, to hard rubber, fibre, porcelain, cork, horn, etc., and would take the place of these materials in several of their uses. Its power of resisting heat is said to be almost if not quite equal to that of asbestos, and it is extremely tough and very difficult to break. In its first stages of manufacture, being perfectly plastic, it can be moulded into any shape desired.—[*The Indian Trades Journal.*]

THE FALLING OF FRUIT FROM THE TREE AND ITS CAUSES

The conditions which bring about the falling of almonds and apples, apart from windfalls and the effect of insects, is worth the careful consideration of fruit growers. A good deal of loss is caused by these fruits falling when about the size of a hazelnut. Scientists attribute the occurrence to one of two causes, *viz.*, to incomplete fertilisation, or to insufficient nourishment, or both.

Professors Muller and Osterwalder have been engaged in studying and testing the truth of these suppositions in one of the experimental stations of Germany. The former confined himself to the almond tree. Of the fruit which fell on the ground 10 per cent were found without seed and only contained traces of germination; 30 per cent contained only one seed and 9 per cent contained shrivelled embryos. Whereas, on the contrary, the fruit which remained on the tree had many seeds and though one of them contained only one seed, not a single fruit was found

entirely seedless. The investigation was regarded as proving that the falling was due to imperfect, or total absence of fertilisation.

In 1906 Prof. Osterwalder extended his researches to eight varieties of almond trees and to four varieties of apple trees. The fruit was collected either by gently shaking the boughs (dislodging the ripened fruit) or by picking. All the fruit so obtained was found to be fertilised and no material difference was observed in the number of the seeds contained in each of these groups. The alternative assumption, *viz.*, insufficient nourishment, was held in this case to have been the cause of any premature falling that might occur.

The treatment to be applied depends upon which of these two causes is at work. To ascertain this, cut the fruit across and examine the two halves. If there is no seed or if it is imperfect it may be assumed that fertilisation has been defective, owing, probably to the absence of pollen of that variety. To remedy this, blossom-bearing trees should be planted near. On the other hand, if one or more seeds are contained in each fruit, it may be taken as a sign that although fertilisation is satisfactory nourishment has been lacking and in this case manure, either khan or chemical, should be worked into the soil.-- [*Cyprus Journal.*]
