

THE EXTREME HARDNESS OF THE SEEDS OF CAESALPINIA DIGYNA.

In 1910, the writer obtained two dozen seeds of *Caesalpinia digyna*, Rottl., from Burma, intending if possible to isolate on them the water-resistant layer which hinders the germination of quite a number of the Leguminosae, such as *Acacia arabica* and various indigos. The intended study was never completed; but observations were made on the resistance of the seeds to germination.

The seeds were placed half-submerged in clean water, which was frequently changed, but none germinated during nine months; next they were allowed to dry and after about three months out of water, they were placed in it again half-submerged as before; still there was no germination. A few were removed from the experiment to see if they were alive; they were cut slightly so that the impervious layer was broken, whereupon they all germinated. The remainder passed another six months half-submerged, but did not germinate; then they passed a year dry. Half-submerged again for the third time, as before they did not germinate during two months.

It seemed probable after this that the alternation of wet and dry seasons such as occurs where the plant chiefly grows, has nothing to do with the germination. However, it was thought that perhaps jungle-fires might bring it about; and ten seeds were accordingly placed under a layer of dry leaves prepared to produce a flame a foot high, which was fired; the seeds, when the fire had passed from them, were collected and replaced again in water, they still did not germinate until they were cut. With this the experiments ended, the supply of seeds being exhausted; but the living plants now in cultivation in the Economic Garden, Singapore, are the offspring of these seeds.

It seems as if *Caesalpinia digyna* only germinates after direct injury to the outermost layer of the seed-coat.

Several years ago Professor W. R. Dunstan, Director of the Imperial Institute, London, showed what splendid leather is produced by tanning with the pods of this plant, but a barrier to its use was found in the high cost of collecting them from the bushes which grow too scattered. Should it ever be possible to bring the pods into the market, it is most likely to be by encouraging the plant to grow thicker by sowing prepared seeds in waste places.

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A DISEASE OF AGAVES.

There is a disease on *Agave* plants in Singapore, and in the state of Johore, due to a fungus. This fungus attacks the mature leaves on the upper surface, rendering them valueless for the