

BOTANY

Rubber Trees Split

Two seedlings from one may double yield from rubber plantings. Plants are cut by Gambar method, resulting in "siamese twins" attached to seed-leaves.

See Front Cover

► **MAKING** two rubber trees grow where only one grew before, by splitting Hevea seedlings just after they have sprouted, is the newest step toward the solution of the natural rubber problem reported by scientists of the U. S. Department of Agriculture (*Journal of Agricultural Research*, July 15). The technique offers the possibility of doubling the yield from the limited, therefore doubly precious, supply of high-quality pedigreed seeds available for the establishment of rubber plantings in the Western Hemisphere tropics.

Hevea seedling-splitting was first developed by Dutch plant scientists, working on the great plantations of the Netherlands Indies. Their methods have been tried out, with variations that may produce improvements, by H. F. Loomis of the Bureau of Plant Industry, at the U. S. Plant Introduction Garden at Coconut Grove, Florida.

Seedling-splitting in Hevea depends on the early growth habit of the plant. The rubber-tree seed looks like an over-size castor bean—Hevea is, as a matter of fact, a botanical relative of the castor bean. Only, when sprouting takes place, the thick seed-leaves or cotyledons are not pulled out of the seed-coat but remain in it, feeding the young plant for a time through the leaf-stems still attached to the shoot.

The first method of multiplying rubber plants by dividing them consisted simply of splitting the whole seedling into equal halves, from shoot-tip to roots, a few days after germination. The split halves of the shoot soon died, but new shoots came from a pair of tiny buds in the angles between the seed-leaf stems and the original shoot. This method, first described by a Dutch botanist named J. C. Zweede, was called the Ramaer method, after the botanist who invented it, R. Ramaer.

Later, an improvement was made on it by another botanist, but it was named not for a person but for a plantation, the Gambar Estate, near Malang, Java. In the Gambar method, the split is not

into equal halves, but the cut is made into the side of the shoot, just above the junction with the seed-leaf stems. This leaves the original shoot to grow up, while a new one forms from the bud on the "short" side of the cut. This gives quicker growth to one side, because the original shoot does not die as it does in the Ramaer method. The new shoot that forms on the other side grows just about as well as it does under the Ramaer technique.

In both methods, the split seedling halves are still "siamesed" together by their attachment to the seed-leaves held firmly within the seed-coat. They grow side by side in flower-pots until they are big enough to separate and set out separately.

In an effort to eliminate this operation, Mr. Loomis tried carefully cracking the seed-coat and separating the seed-leaves at the time of the splitting. This eliminated the labor of later re-potting, but this saving was offset by the death of some of the seedlings.

Mr. Loomis also discovered that young seedlings growing in the open, with their tops killed by cold or eaten off by rabbits, could be split and replanted successfully after they had started new shoots from the side buds. Studies on this method, however, have been very few, and must be carried further before any recommendations as to possible practical application can be made.

Science News Letter, August 22, 1942

TECHNOLOGY

Pack Eggs in Cellophane To Save Metals for War

► **FROZEN EGGS** are now packed in rectangular cartons lined with a special cellophane, instead of in the old round tin cans which weighed two pounds apiece. Estimates are that 350,000,000 pounds or 3,430,000,000 eggs will be frozen and shipped in 1942 to Americans and our allies. If all of these are packed in cartons instead of cans, nearly 12,000 tons of steel and tin will be saved for other war purposes. The cartons can also be used for other foods, for pie



TWENTY-FOUR DOZEN EGGS are shown being stripped of their *Pont* cellophane wrapping. After being churned to a homogenous, smooth mixture, the eggs are poured into the bag supported by a cardboard box and then frozen.

fillings, oleomargarine, jellies and various frozen and dehydrated foods, with further savings of metals.

Science News Letter, August 22, 1942

SEISMOLOGY

Report Quake Epicenter Near Coast of Guatemala

► **THE VIOLENT** earthquake reported from Central America on Friday, Aug. 7, had its epicenter near the coast of Guatemala, seismologists of the U. S. Coast and Geodetic Survey stated after comparing records telegraphically transmitted through Science Service by nine American and Canadian observatories. Approximate location was in latitude 14 degrees north, longitude 91 degrees west. The shock began at 7:36.9 p.m., EWT, on the sixth.

Stations reporting were: Dominion Observatory at Ottawa, Des Moines Seismological Observatory, the observatories of the Jesuit Seismological Association at St. Louis University, Fordham University, Georgetown University, Spring Hill College and Weston College, and the observatories of the U. S. Coast and Geodetic Survey at Tucson, Ariz., and Ukiah, Calif.

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