

from the leaves. The leaves are put into the machine at one side, and delivered clean at the other. One half is cleaned by the first wheel, then the cleaned portion is held while the second wheel cleans the remainder of the leaf; all the operations are automatically performed. In Yucatan, the leaves measure from 4 to 5 ft. in length, about 4 in. in width, and $\frac{1}{2}$ in. in thickness. They are lance-shaped and weigh from $1\frac{1}{2}$ lb to $1\frac{3}{4}$ lb on an average. As only about 3 to 4% of the weight is available for fibre, the average yield of 1000 leaves is from 50 to 60 lb. The yield per acre is estimated at about half a ton. It has been proposed to treat the pulp, &c., with a view to extracting the chemical substances, but we are not aware that any successful attempt has been made. The fibre is yellowish-white, straight, smooth and clean, and a valuable cordage fibre second only to manila fibre in strength. It is used extensively for cordage and binder twine, both alone and in conjunction with manila, and is also used for bags, hammocks and similar articles.

The plants thrive on arid rocky land, growing, for instance, on the Florida Keys upon the almost naked coral rock. Their northern limit of cultivation is determined by frost, which the plants will not stand; in Florida this is represented by the line of 27° N. An inferior fibre is obtained from the leaves of another species, *Agave decipiens*, which is found wild along the coasts and keys of Florida. It is known as the false sisal hemp, and can at once be distinguished from true sisal by its spiny leaf-margin.

SISAL HEMP, or HENEQUEN, of Florida and the Bahamas, the product of *Agave rigida*, variety *sisalana*, a native of Yucatan, but found in other parts of Central America and distributed to the West Indies, where it is being increasingly cultivated.

Agave (*q.v.*) is a member of the order Amaryllidaceae; and a well-known species of the genus, *Agave americana*, the century plant, will suggest the habit of the sisal hemp, which, however, differs in the absence of prickles along the margin of the fleshy leaf. After six or seven years the flowering stalk or "pole" develops from the centre of the leaf-cluster, and grows to the height of 15 or 20 ft. The flowers are borne in dense clusters at the ends of short lateral branches, and closely resemble those of *Agave americana*. After they have begun to wither, buds are developed from the point of union with the flower-stalk; these form tiny plants, which, when several inches long, become detached and fall to the ground. Those that fall in a suitable place take root and are soon large enough to transplant. After flowering the plant perishes, but is renewed by suckers springing from the base of the stem; these suckers are then planted, and the leaves should be ready for cutting in about four years. The other method of planting is by means of "pole" plants just described.

In collecting the fibre the leaves are cut off at the base, the spine at the top end removed, and the leaves carried in bundles to the machines. Here two scraping wheels remove the pulp