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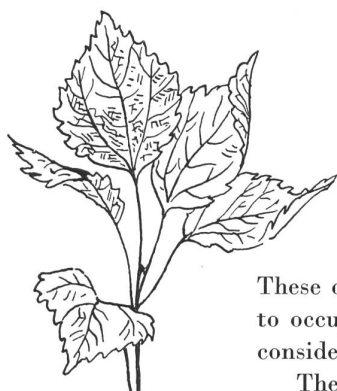
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RAMIE

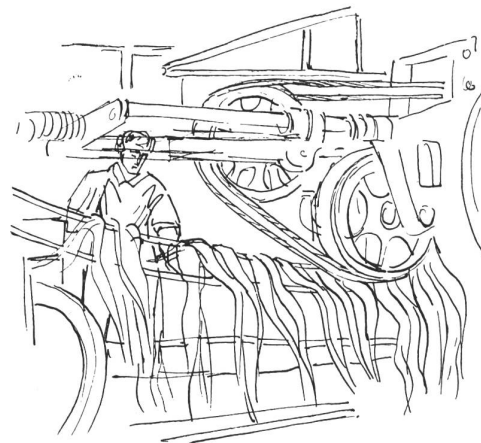


Much has been said about ramie these last few years, as if it were a new textile fibre. As a matter of fact it is a fibre that has been known of for a very long time and one which has played the same role in China up to the present days as linen has in Europe, and its use had even extended as far as the Middle East. Certain technical difficulties however prevented it from being used on anything like a large scale until quite recently.

These obstacles have now been overcome so that ramie, thanks to its intrinsic qualities, is tending to occupy an increasingly important place in world textile production. That is the reason why we consider it worth while devoting a brief study to this fibre with a future.

The ramie fibre comes from two plants : china-grass (*Boehmeria nivea*) which grows in temperate regions and is also called « white ramie » because the under side of the leaves is pearly white, and the ramie proper (*Boehmeria tenacissima*) or green ramie, so called because the under side of the leaves is bright green, which grows in tropical and sub-tropical climates. The fibre from this latter plant is generally a little stronger. Since the two kinds are very similar there is no longer any attempt made to differentiate between them, and for practical reasons the raw untreated textile fibre is called china-grass and the fibre which has already been subjected to the degumming process (see below) is called ramie.

The ramie is a perennial plant and has an extremely high yield : under favourable conditions it grows to anything from 4 to 9 ft. in height and can be harvested as many as five times in a year ; its leaves make excellent fodder and its stem contains a fibrous bast which forms the textile material. Immediately after cutting, the stems are stripped of their outer covering and the bast is detached from the ligneous interior. In those countries which have recently turned to the produc-

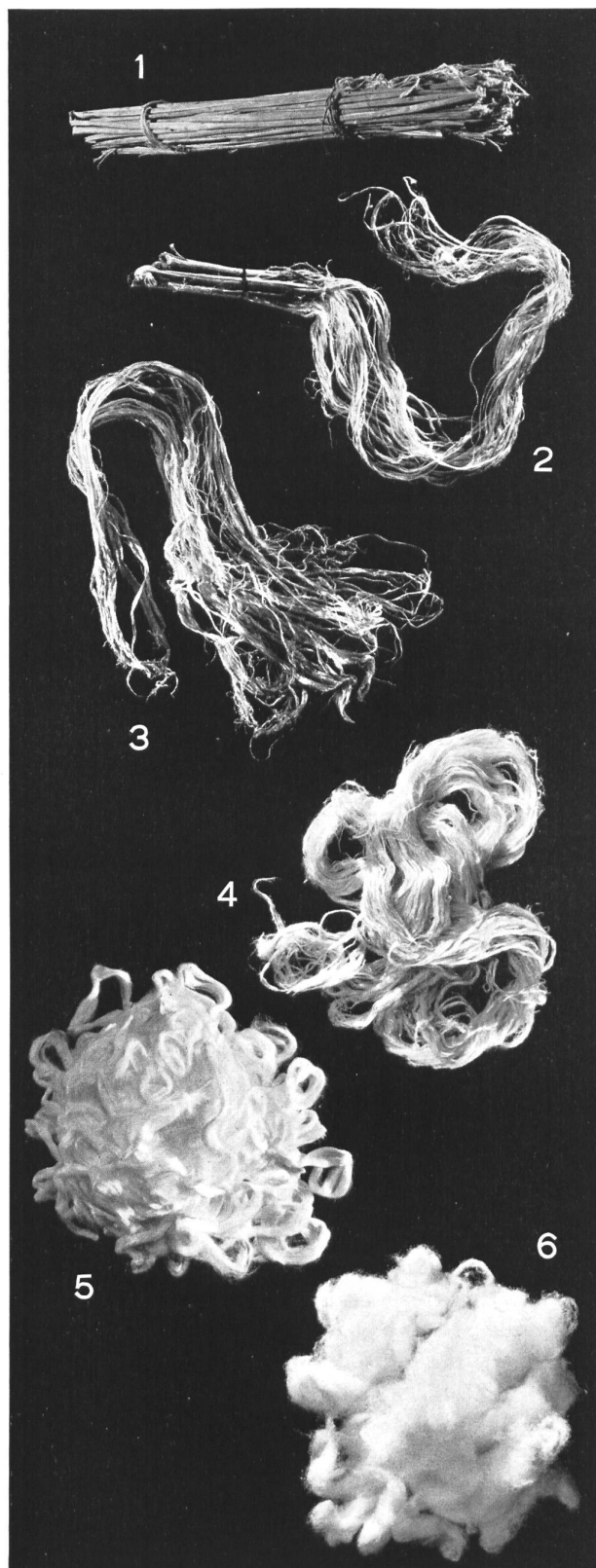


tion of this fibre, namely the United States, the Philippines, Brazil, etc., this work is carried out by a completely new type of machinery which gives excellent results. A single fibre measures from 20 to 80 thousandths of a millimetre in width and from 35 to 12 thousandths of a millimetre in thickness in the average, and it may be as much as 18 to 24 inches in length. The china-grass is pressed into bales weighing from 550 to 770 lbs. and sent to the transformation centres, and in particular to Switzerland. Begumming is the first industrial process to which the china-grass is subjected. In this process the fibres are freed from the extremely sticky vegetable gum which covers them and holds them together, and which has dried hard during storage. Each establishment has its own methods. The most important thing is to succeed in cleansing the fibres perfectly under the best possible conditions without their being damaged either by mechanical or chemical agents. This is now being successfully carried out



by new methods which give complete satisfaction, contrary to what is still often said. Being white in the natural state, ramie can be used without excessive preliminary bleaching as long as an absolutely pure white is not required; this greatly simplifies production.

The degummed ramie is dried in hot air chambers, then combed, that is to say the fibres are laid out parallel, and afterwards spun on ring spinning frames and finally twisted and woven like any other textile material.



Ramie has very good mechanical and physical qualities. It holds first place among all the natural fibres as regards tensile strength. This increases to as much as 160 % when wet, which makes ramie fabrics extremely resistant to washing. Being very smooth, the fibre is not easily dirtied but it is nevertheless very absorbent: this characteristic is highly appreciated in household towels, as is also the softness and suppleness of the fibre. This is composed of almost pure cellulose, and is consequently very little affected by moisture and is resistant to rot bacteria. In addition ramie is easily dyed in fast colours.

It is not possible to enter here into the details of all these properties and other technical characteristics which make ramie a good quality fibre for a multitude of uses. As its production is infinitely less developed than that of other textile materials, ramie could never entirely take their place. However it can be used to advantage wherever a high degree of resistance to wet or damp is required, that is to say for numerous industrial purposes.

Among other products for which ramie is used to advantage, we would like to mention ropes of all kinds, strings, webbings, driving belts for spindles, cheese cloth, cloths for presses and filters, fishing nets and duck; for household use: towels in every form, table sheets and upholstery fabrics, etc. Moreover ramie is invaluable when mixed with wool as it reduces the tendency of the latter to felt, while at the same time increasing the strength of the yarn.

1. Dry Ramie Stalks. 2. Partly decorticated Ramie stalks.
3. Decorticated Ramie, known as « China Grass ».
4. Degummed Ramie. 5. Ramie Tops. 6. Stapled and opened Ramie.

The photographs and the drawings illustrating this article have been very kindly put at our disposal by the ramie spinning mill: **Ernest H. Fischer Sons Limited, Dottikon.**

