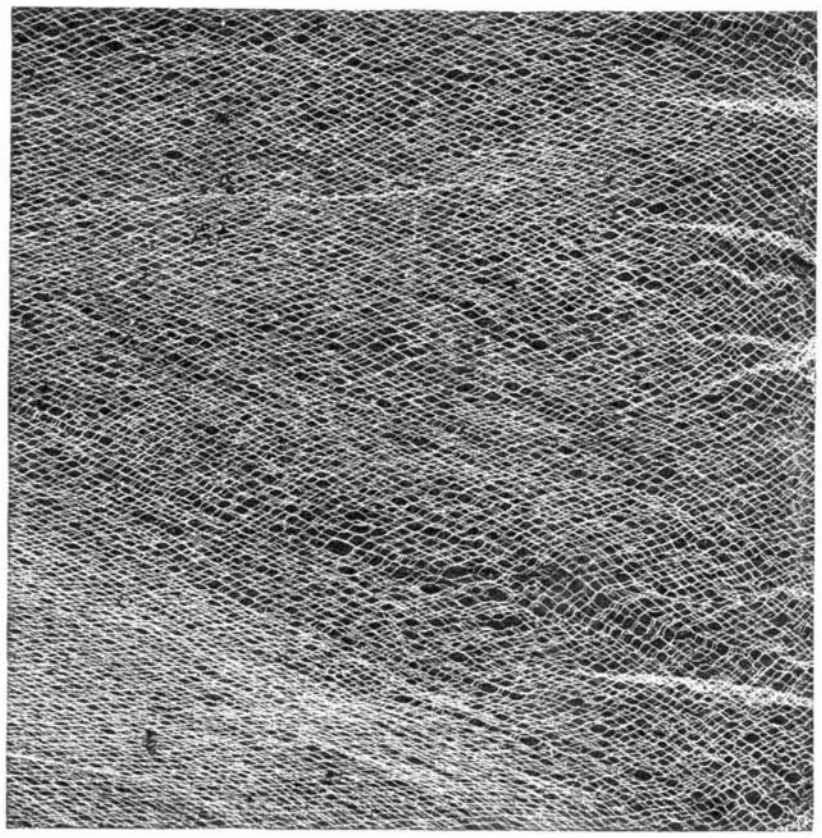
THE LAGETTO, OR LACE-BARK TREE.

The order *Thymelaceæ*, or "Daphnads," comprises a very interesting group of plants, whether we regard them as objects of floral beauty, or look at them from an industrial point of view. The name of the order is derived from *thymelæa*, a plant mentioned by the ancients. The plants included in this group are shrubs or low trees, with entire leaves, perfect flowers, tubular colored calyx, and small round hairy fruit, inclosed in the persistent base of the perianth. They are remarkable for their acrid and caustic bark, the inner portion of which is composed of interlaced fibers, extremely tough, but easily separable, and hence often used for making cordage. The plants of this order occur in great abundance in the cooler parts of India, South America, South Africa, and Australia; a few also occur in Europe. Among the Daphnads may be mentioned the *Gnidia daphnoides*, the bark of which is manufactured in Madagascar into ropes; the *Daphne bholua*, the inner bark of which is made into a soft paper in Nepaul; and *Daphne cannabina*, used for the same purposes in China. The only representative of the order found in North America is our common leatherwood or wicopy (*Dirca palustris*), the bark of which, on account of its great toughness, is used for making ropes, baskets, etc. Among other curious products of Jamaica usually brought home by travelers, specimens of the "vegetable lace" of that island are always sure to be found. The plant which produces this is the *Lagetta lintearia* (formerly called *Daphne lagetta*), or lace-bark tree, otherwise known by the native name of lagetto. It is a small tree, 25 to 30 feet high, growing in the most inaccessible rocky places of the island. Its inner bark consists of numerous concentric layers of fiber, which interlace in every direction, forming fine meshes, and by lateral stretching is made to present a striking resemblance to the most delicate manufactured lace, whence the common name of the tree.

It is said that Charles II. received as a present from the Governor of Jamaica a cravat, frill, and pair of ruffles, made of this material; and, to this day, it is used for bonnets, collars, and other articles of apparel. Travelers state that the Creole women take delight in decorating themselves with this filmy material for evening wear, studding it with the brilliant fire beetles, or *cucujos*, for which the West Indies are noted. The effect is said to be very beautiful.

During the days of slavery in Jamaica, the uses to which this natural lace was applied were not so unobjectionable as those just mentioned, since it then likewise furnished the thongs and whips for the taskmaster's use.

A very perfect representation of a piece of this exquisite vegetable product will be seen in our illustration, which was printed directly on the block from a portion of a very fine specimen kindly sent to us by Robert Nunes, Esq., the U.S. Consul at Falmouth, Jamaica.



THE LACE TREE OF JAMAICA.

Kalameit.

Science has not yet exhausted her store of rewards for those who assiduously devote themselves to her service. This truth is abundantly illustrated in the facts here indicated. For some years an Austrian gentleman, Mr. Julius Sachs, has spent much time and money in the investigation of the nature and properties of the jute plant. Hitherto this article has occupied perhaps the humblest place among textile fibers, but it now bids fair to take a position equal to the best, if the anticipations naturally growing out of the success attending investigations hitherto should be fulfilled. That this will be the case the inventor does not entertain a doubt. The secret of this invention is solely in the hands of the Barrow Flax and Jute Company, and the story of its introduction into this country is briefly as follows:

Mr. Julius Sachs, the inventor, like many predecessors in the same field, discovered that when he had overcome the difficulties attendant upon bringing the invention to scientific completion, he was only at the threshold of another series of difficulties, more disheartening than those already overcome—he could find no one to look favorably upon his discovery. In this contingency he accidentally met with and was introduced to Mr. Edward Jenkins, M.P. for Dundee, who, it was naturally thought, might interest himself in the matter, and bring it under the notice of the manufacturers of that town. Mr. Jenkins did so, but without succeeding in finding any one able and willing to take it up. Nothing daunted, however, by this failure, he next brought it under the notice of the Barrow Flax and Jute Company, with which the Duke of Devonshire and Sir James Ramsden are connected. With that practical foresight which is admittedly so distinguished a feature of Sir James' character, he wished to know more about the matter, and the inventor having been introduced, explanations followed, which, after a visit to Germany to see what had actually been accomplished, terminated in an engagement between Mr. Sachs and the Barrow Flax and Jute Company. This, we have the best authority for stating, is a correct account of the introduction of the invention into this country. In some of our contemporaries it has been stated that the part played by Mr. Edward Jenkins was of a much more important character; but, as will be seen, that gentleman simply acted the part of an intermediary.

Mr. Sachs, installed at Barrow with command of ample means, has for some time assiduously devoted himself to the perfection of the various processes necessary to the new method of preparing the fiber. In this he is aided by a band of German workmen, who have been selected partially from the consideration that linguistic difficulties may interpose some bar to the illegitimate curiosity of outsiders until such times as those who have the best right and property in the invention can make it fully secure, and also because they are so far in advance of English workmen in their knowledge of the art of dyeing. This is very proper care. Many men have suffered from indiscreet revelations of their plans; and their fate at the hands of an ungrateful world has been such that it ought to be a sufficient caution against a repetition of their error.

The fiber of the jute plant is capable of minute subdivision; and in this new industry it is reduced to exceedingly fine filaments—beyond anything effected before. The result is a fine silky material, which takes the dye in a remarkable manner, and so far as experience enables one to judge, the colors are fixed and durable. These qualities are to some extent revealed in the finishing processes to which the fabrics have been subjected. One of the chief difficulties hitherto experienced in the treatment of jute has been to avoid injury to the fiber, especially in bleaching, but this has now been overcome.

It may not be generally known, but it is nevertheless a fact, that the Barrow Flax and Jute Company was established not so much for profit as to form a subsidiary business to their on trade of the town, and to find employment for the women and children of the men's families engaged therein. It now bids fair, however, to become a great staple industry, and not dependent for support upon its neighbor. The company's operations in connection with the new treatment of jute have emerged from the experimental stage and entered upon the commercial arena. They have hitherto spun the yarn themselves, while the manufacturing operations have been undertaken by Messrs. Critchley, Armstrong & Co., of this city, who have executed their share of the work with the taste and skill for which the firm has long had a great reputation. By their courtesy we have been favored with a private view of duplicates of goods sent to Paris, and also of others that were out of hand too late for the opening day, but which have been forwarded since. The articles hitherto produced consist of curtains, hangings, tablecloths, and dress goods, in plain and figured cloth, some of which, for beauty of design and harmonious arrangement of color, it would be difficult to surpass. In every case a striking feature was the richness and silky luster of the colors, which would have led any uninformed observer to conclude that the fabric was composed of the most esteemed material known in the textile trades, namely, silk, instead of the hitherto despised fibrous portion of the jute plant. Carpets, both tapestry and Brussels, have also been made with equally satisfactory results, and promising experiments have been made with the material in the manufacture of hosiery. The article as applied to textiles has had conferred upon it the name of Kalameit. We hope the labor of the inventor and the enterprise of the capitalists who have embarked in this venture will be amply rewarded, and in this desire we have no doubt we shall have the concurrence of our readers.

Notwithstanding the pleasure we experienced in examining the results of Mr. Sachs' genius, the introduction of what may be looked upon as a new departure in the manufacture of jute, we could not help a slight feeling of regret that it is to a foreigner we are indebted for this new industry. It is, however, only another illustration of the advantages obtained by technical education, which on the Continent is regarded as an absolute necessity, and which the columns of the *Textile Manufacturer* show we have done so much to promote in this country. We can only add that we hope such examples as these will have the effect of rousing English manufacturers from the lethargy into which they have allowed themselves to fall, and which has in matters of taste led them to become mere imitators of our continental neighbors, while in the field of invention we are in danger of being surpassed by our American cousins. This ought not to be, and were its importance properly appreciated, would not be. In the fields of science and invention, for patient, untiring investigation there is an almost certain reward, and to our labor therein depends in the future our command of the markets of the world.—*Textile Manufacturer.*

Resorcine for Cotton Dyeing.

The methods hitherto in use for cotton dyeing with colors derived from resorcine are unsatisfactory both as regards the exhaustion of the bath and the solidity of the shades. The following improved process has been devised by Messrs. Monnet:

The cotton is soaped hot with curd soap for an hour, and then wrung without rinsing.

A solution is made of 8¾ ozs. alum in 35 fluid ozs. of water; it is diluted to 17½ pints; 1¾ oz. of soda crystals is added; the whole is let settle and the clear drawn off. The cotton is immersed in this, and kept at a boil for 10 to 12 hours, and is then passed into a bath containing 17½ pints of water, and from 6¾ to 10¼ ozs. of emulsive oil (such as is suitable for Turkey-red dyeing). Before adding the oil to the bath it should be very well shaken up with 32 fluid ozs. of water. In this liquid the cotton is let steep for one hour, wrung, and dried.

The dye beck is then made up of pure water, 17½ pints; red liquor at 5° Baumé, 7 fluid ozs., with the necessary quantity of color. The dyeing is begun at 122° Fahr., and the beck gradually raised to about 190° Fah. The goods are then allowed to steep till the beck is exhausted, wrung without washing, and dried.

The red liquor is prepared by dissolving 4½ ozs. of alum in 8¾ fluid ozs. of boiling water, and adding a solution of 3⅜ ozs. of sugar of lead in the same bulk of water.

The two solutions are to be mixed, let settle, strained, and the clear is set at 5° Baumé. The greatest care should be exercised to have the water used perfectly free from lime.

Destruction of Yellow Fever Germs.

Two methods have been proposed for destroying the floating germs of yellow fever when the disease is epidemic. One, advocated by Mr. Hardee, of Florida, and suggested by the exemption of the Northern troops in the South during the war of the rebellion, and in Mexico during the Mexican war, involves the destruction of the germs by atmospheric concussion produced by a succession of gunpowder explosions. Mr. Hardee says that the plan was successfully tried last year at Jacksonville, Florida.

The second is proposed by Dr. R. W. James, of Philadelphia, and involves the mechanical production of low temperature. He says, in a letter to the Philadelphia *Ledger*:

"Let every quarantine station have a ward or room capable of holding several patients, more or less, as the exigencies may demand, so arranged that ventilation can be maintained exclusively through ventilators and by means of small ante-rooms with spring closing doors, and then have no mode of entrance or exit to the ward except through the ante-room. The ante-room should be kept at the same low temperature, or even lower than that in the ward, so that the temperature in the latter may not be raised by the opening and closing of doors by the attendants, nor any of the disease producing germs escape before they are thoroughly subjected to the low temperature and destroyed. The ward and ante-room must be kept at a temperature not higher than 25° Fah. Keep the patients comfortable by a sufficient amount of bed clothing; and everything that goes from the room, such as clothing, excretions, all emanations, etc., must be exposed a sufficient length of time to the cold. This will kill the poisonous germs, or reproducing cause, and prevent, as far as the cases under treatment are concerned, any risk of the disease spreading. If patients cannot bear so much cold during treatment, an adjoining warmer room can be made, with no mode of access or ventilation except through the cold room, and everything going out of the warmer room must be allowed to remain a sufficient length of time to get rid of the contagion. If no attendant occupies the ante-room the degree of cold can be kept near zero, in order the more quickly to destroy all the disease producing agencies."