

the average price in November and December last was: Turkey mohair, 1s. 8½d. per lb.; Cape mohair, 1s. 7d. per lb.

Mohair, was of course, manufactured into other fabrics than dress materials. High-class twilled linings were often made, which were used more on the Continent and in America than in England, and mohair braids, laces and trimmings of various kinds also took a good deal of the raw material. Plushes made from mohair were now largely used for upholstery purposes, and the shortest kinds of mohair were made into imitation sealskins and plushettes, and in some cases printed with special art designs for curtains and general upholstery. The introduction of mohair crepons was quite a new departure in the manufacture of mohair dress goods fabrics, and although the early forms of mohair crepons seem to have had their day, modifications were still produced, and there was every indication that a permanent trade had been established in this class of mohair manufactures. At the present time, with the exception of a few small manufacturers in America and on the Continent, the West Riding of Yorkshire had the mohair industry in its own hands.

Three Vegetable Fibres—Nettle fibre had of late come greatly into favor in the manufacture of fine yarns and tissues in Germany, where over 10,000 spindles and some 100 workmen were employed. The raw material was imported almost exclusively from China, from which country about 750,000 lbs. were annually sent to Germany. Nettle fibre produced one of the finest tissues obtainable from any known vegetable fibre, and it was intended to introduce the cultivation of the nettle fibre into the Cameroons. The idea was to prepare there the products of that experimental culture, and test them in German factories. Should favorable results follow, it was intended to organize nettle-growing enterprises on an extensive scale.

Continuing, Mr. Garrett said that a new industry had arisen in Ceylon—the preparation of aloe fibre for the market. The commercial name of the product was Mauritius hemp, and it was hoped by those interested that it would take the place of Manilla hemp.

Some years ago an explorer in Asia discovered a plant of silken fibre which was used by the natives for the manufacture of cords and woven goods. The plant, known as the *Apocynum Venetum*, was a sort of bush with slender cylindrical branches, which were sometimes 6 feet high. It grew in Europe, Siberia, Asia Minor, North of India, Manchuria, and Japan, but up to the present had been used only in its natural state. The attention of the Russian Government was called to the plant in 1891, and in 1895 began to use it in the manufacture of bank-notes. The results obtained thus far were considered excellent.

The Silk Spider of Madagascar—One of the most novel exhibits of the colonial section at the Paris Exposition was a complete set of bed hangings manufactured in Madagascar from silk obtained from the halabe, an enormous spider found there. The matter had been taken up by the head of the Antananarivo Technical School, and the results showed that spider silk production should become an important industry. The chief problem was to find a practical process for extracting the silk from the female spiders, and M. Nogue invented a most ingenious appliance for that purpose. The female halabe allowed her silken store to be taken from her in a quiet manner, in spite of the fact that she was distinguished for her ferocity. M. Nogue's apparatus consisted of a sort of stocks arranged to pin down on their backs a dozen spiders. The spiders accepted the imprisonment with resignation, and the silken thread issuing from their bodies was rapidly wound on to a reel by means of a cleverly devised hand machine. Each of the twelve spiders simultaneously yielded from 300 to 400 yards of silk, and as soon

as a spider had yielded all its silk it was replaced by a fresh one, the work of reeling the thread thus continuing with very slight interruption. After having been exhausted of their thread the spiders were set free, and ten days after were ready to undergo the operation again. The silk of the spiders, which was of the most extraordinary brilliant golden color, was much finer than that of the silk-worm. Its power of resistance was remarkable, and it could be woven without the least difficulty.

A Substitute for Jute—A correspondent at Rio drew attention to the fibre of the guaxima, which was found in large quantities on the low lands near the sea. It was believed that that fibre would prove an excellent substitute for jute, which was all imported, and when cultivated be the basis of an important industry. The threads were long and very strong, and would resist the action of water. The process of elaboration of guaxima did not require long maceration in vessels, as was the case with jute, immersion for a few days in a running stream being sufficient to enable the green outer bark to be loosened with the hands. The rods were then exposed to the sun in order to dry the woody parts, which contracted, allowing the fibres to be easily separated.

The Possibilities of Ramie.—Ramie fibre grew wild in India, and recently some experimental farming of the product had been carried on in Queensland. On the whole, however, the results had not been successful. The land did not yield more than half the quantity of fibre per acre that it ought to have done, but the experiments were being continued, to see if it were not possible, by improving the land, etc., to secure more satisfactory results. It had been argued for ramie that it was one of the strongest fibres, and that it could be made into anything that flax, cotton, wool or silk were suitable for. But a Bradford correspondent, writing to Sell's "Commercial Intelligence," stated: "For the sake of planters in our colonies and investors at home, a few words in review of the history and possibility of the ramie fibre may not be out of place. From the manufacturer's point of view, the business career of ramie can only be regarded as catastrophic. No single English firm has yet succeeded in dealing profitably with the material, and it is quite within the truth to say that £250,000 has been irretrievably lost in the attempt. To put comparison with cotton in a nutshell—raw cotton can be made into yarn for some 2½d. per lb., while ramie costs in process at least 1s. per lb. To compare the possibilities of ramie with wool and with silk betrays a complete ignorance of the nature of these two materials. Ramie is harsh and wiry with none of the warmth and softness of wool, or the beauty and pliability of silk. Ramie is much dearer than flax, and has the unfortunate faculty of shrinking when wet. Its lustre is metallic in appearance, and it cannot be dyed to a good black. Some success seems, however, to have attended two firms in Germany, although some half a score of English firms have been ruined in the attempt to do anything with it."

## THEORIES OF DYEING.

Much work has been done of late years bearing upon the theory of dyeing, and a resume of it may be of interest to our readers. The older chemical and mechanical theories have been supplemented in recent times by the solid solution theory of Witt, the osmotic theory of the direct substantive dyeing of cotton put forward by Weber, and Krafft's theory of colloidal precipitates, according to which the color coats the fibre as oil pigments do wood, a rather improbable phenomenon. Many facts urged in support of one or the