

also some warps allow threads to draw up from the back beam when weaving; these threads are very troublesome, and weave into the cloth like a miniature pile, and are often found in very light cloth, and are caused by placing too much drag on the warp when beaming, especially from sections. The threads being broken in the latter case, if the breakage is too great for the weaver to overcome in reasonable time, there is no alternative but to make the threads continuous by piecing up in a dressing or beaming frame, which is a very slow and tedious duty to perform, and, if possible, should be inflicted on the person causing the injury, in which case it is not likely to occur a second time.

Another cause of trouble is the way in which some warps are drawn through the healds, especially when very fancy draughts are introduced, and the healds are evenly knit, and are to be dropped or cast out to pattern. These warps require accurate calculation and care in casting out, or they will pull very much when in the loom, and the chafing of the yarn is very seriously increased. The selection of suitable counts of healds is an important item, as there is more friction caused by the use of coarse healds in some cases than would be the case with those of finer counts, which would not spread out some narrow stripe to so great an extent. Imperfections of the nature just described should be rectified at once, which is a duty to be performed only by the operative employed.

Before warps are taken out of the loom to be redrawn, the overseer should make sure of the cause, and notice if the healds are secured each in its accurate position; because the fastening of one shaft a little too much in one direction, and another shaft a little in another direction, is sufficient to give at a glance a misleading conception of the cause. The irregularity of drawing is more serious when the warp is woven in a dobby loom provided with springs for the purpose of pulling down the healds. The rigid way in which the healds are held brings any crossed healds to bear upon the yarn very severely. Cords tied at the ends of the shafts have given relief in some of these cases by lessening the tension on the healds, and allowing them to bend more easily out of position. The practice of having a group of healds knit at each end of a shaft of very coarse counts is a point to be recommended, as it tends to ease the friction when weaving by taking some of the strain from the center, and makes the healds last much longer.

WILD RIHA.

The most recent Agricultural Ledger issued by Dr. Watt contains a report by Professor Dunstan, Director of the Scientific Department of the Imperial Institute, on some samples of the Bon, or Ban, Riha fiber forwarded to him for experimental purposes by Dr. Watt. In forwarding the samples, the latter stated that this wild riha fiber had been spasmodically discussed for about half a century, but only in a superficial way; its merits had indeed been extolled, but no practical tests had been made and no progress reported. Dr. Watt made a detailed examination of the plant in Assam, where it grows wild, and came to the conclusion that while related to *Boehmeria nivea* it is in reality quite a distinct variety, viz. *Villebrunea integrifolia*; that it was a truly wild plant and was nowhere cultivated, though its fiber was highly appreciated by the hill tribes of Assam. The plant, we are told, can be grown on all waste lands; it has little or no gum; it gives a high return of fiber where the *Boehmeria nivea* or *Boehmeria tenacissima* fail; and the fiber is very fine and perhaps as strong as, if not stronger than, China grass. This being so, Dr. Watt resolved upon making an effort to bring the fiber to the attention of commerce. The plant, it may be mentioned, produces shoots 20 feet in length; the bark strips off easily and a cleaned and partly bleached raw fiber might be obtained with the assistance of

machinery; and finally, Dr. Watt pointed out that the most important point in connection with the fiber was that it could be produced at one-third of the price of other varieties, (The name of the plant, it will be noted, is riha, not rhea, and it means, in Assamese, the cloth that covers the heart or breast). In his report, Professor Dunstan says that a comparison of the results of his examination of Ban Riha and *Boehmeria nivea* "clearly brings out the superiority of Ban Riha, especially in regard to its smaller loss by hydrolysis and its higher nitration number. At the same time, it must be remembered that the process adopted in treating this fiber in the laboratory only very roughly approximates to that which would be used on a large scale. Portions of the original samples have been submitted to a fiber expert, who reports that they can be readily treated by a special and simple process which has recently been devised." This opinion, Dr. Watts considers, may be regarded as confirming the exceedingly favorable views already expressed of *Villebrunea* as a commercial fiber, and he adds: "Its superiority over ordinary rhea in regard to strength, texture and composition, cannot but be considered as a most important result, and one which should commend it to the favorable attention of all persons interested in rhea fiber. As a catch crop to the tea industry it has perhaps no rival, certainly no equal. The fact that this fiber may be cleaned by simply retting the ribbons of bark (after the fashion of jute) is perhaps of even more interest than its exceptionally high merit as a textile. Expensive decorticating and degumming machinery and methods are thereby rendered unnecessary. It is thus possible that the fiber could be turned out at a price that would not only undersell rhea, but for certain purposes, compete with flax, if not with jute itself. At all events, the cultivation and separation of a crudely cleaned fiber of great merit might easily enough be accomplished by even the poorest agriculturist. While rhea must of necessity command capital and enterprise, Ban Riha can be developed by the peasant."

This fiber seems to offer exactly the material required for the manufacture of driving belts, ropes and bands, boot laces, canvas hose, fishing nets and mosquito curtains. Its culture might, perhaps, be combined with that of the aloe and sisal. One plant with the qualities above stated might form the foundation of a large industry in India.

THE MANUFACTURE OF FEZ CAPS.

The Board of Trade have received through the British Foreign office, copy of a memorandum from H. M. Consul-General at Salonica calling attention to an opening which exists for introducing into England the manufacture, for export to Turkey, of fez caps, £40,000 worth of which were imported into Turkey in the previous year from Austria-Hungary. H. M. Consul-General at Salonica forwards a translation of a circular received by one of the leading importers of fezes there from a Vienna firm, relative to the fusion into one company of all the Austrian houses engaged in this trade. The annual production amounts to some 5,600,000 fezes, which are mostly manufactured at Srakomitz, in Bohemia. The importers fear that this combination will result in a rise in prices, as the trade will, for a time, at any rate, become a monopoly, and some merchants in Salonica proposed to open a factory to compete on the spot with the Austrian combination; but this project has been abandoned in view of the promises and assurances of the Austrians that there will be no increase in prices. As soon as the fusion of the Austrian firms was known, some of the chief importers suggested that the present would be an exceptionally favorable occasion for English firms to engage in this manufacture. The Journal de Salonique publishes a letter from a Mr. J. Livada, a British subject, advising merchants to attempt to obtain from