somewhat from those plants previously described. The long green stems are subject to a bruising, which crushes and liberates the strands. The mucilage which binds these together is washed away. There are many methods in use for accomplishing this, and as before stated, inducements are held out for their improvement, which no doubt, will be done.

As we have stated above, New Zealand flax grows in our hill-country, especially on the Uva side, as freely as do aloes. With reference to the latter —in which Mauritius does a considerable trade —it may be well to quote the following portion of the papers published the other day in the Government *Gazette* merely premising that *Fourcroya gigantea* is one of the ordinary aloes for merly known as the *Agave fœtida* :—

Answers to queries respecting machines in use at Mauritius for extracting fibres from leaves of *Fourcroya gigantea.*

(1) The machine in general use in this Colony is a drum of 2 ft. in diameter by 1 ft. in width, upon which are bolted blades in 2-inch L steel, and which revolves at a great speed, the blades passing close to a guide in cast iron ("servante"). The machine is called a ("gratte") scraper. It is manufactured in the Colony by all engineers' shops, but chiefly by the "Forgers et Fonderies de Maurice."

(2) The weight of the drum is about 4 cwt., the cost, including the driving pulley and bolts (exclusive of framework, masonry, and setting), is about R250 per "gratte."

(3) This gratte has been in general use in Mauritius for the last six years.

(4) The machine is worked by steam or by water power.

(5) The registered horse-power to drive one gratte is 3 h.p.

(6) One gratte is served by two men who stand on each side of the gratte, and who work alternately. One of them must be left-handed. One carrier will bring in sufficient leaves from the yard to the gratte, and another man will suffice to remove the wet fibre produced by two grattes and to carry this fibre to the weighing machines and thence to the clearing pits.

(7) The outturn of wet fibre for each machine per hour is on an average, 42½ kilog., that is taking eight hours' work per pay, which is as much as the men can do, the work bring very fatiguing.

(8) The outturn per day of eight hours is per machine (gratte) 340 kil. wet supplying on an average 97 kil. of dry fibre (or 28½ per cent of the wet fibre).

(9) The average cost in labour, fuel, &c., in clearing a ton of dry fibre, packing and transporting to the place of shipment is R150.

If to the above we add other charges, viz., collecting leaves, carting, mill management, interest on capital, &c., say about R75.

The total average cost of one ton of fibre ready for shipment is R225. A. VANDERMEERSCH,

Acting Surveyor-General, Mauritius

Feb. 17th, 1890.

THE KOLA NUT.

[We commend the following extract from "Naval and Military Notes," in the Journal of the United Service Institution for August 15th, to the attention of our planting readers.—ED. *T.A.*]

The "Revue du Service de l'Intendance" for June, 1894, contain an interesting note, by Dr. Gustave le Bon, on the properties of the kola nut, well worth the study of soldiers and travellers. The nut grows along a belt of Central Africa extending from the west coast up to the head waters of the Nile, and its extraordinary qualities in conferring endurance and practical immunity from thirst have been long known to the natives of those parts, but have only recently become known to Europeans.

Interesting details as to the degrees of resistance to hardship and power of prolonged labour developed by its use will be found in the report of the British Consul at Bahia for 1890, from which Dr. le Bon quotes the following instance: "A sack of sugar weighing 200 lb. rejected as too heavy by the young Brazilian porters, was picked up with ease by an aged African accustomed to the use of the nut, and carried by him for 12 miles in the day." Further very remarkable information is also to be obtained in the morograph of Professor Heckel, of the School of Medicinn at Marseilles, on the African kolas, a work of 400s pages, published in Paris, 1893. Experiments made in Europe hitherto have given divergent, and frequently unsatisfactory results, owing mainly to the fact that the only nuts available commercially for the purpose reach us in a dried condition, and the natives, trading on the ignorance of the buyers, adulterate their consignments with so-called "false" kola nuts, which possess no special properties whatever. Another cause of difficulty arises from the ignorance of European chemical experts as to the real nature of the chemical basis of the nut. Broadly speaking caffeine and theobromine are its essential characteristics, and the restorative qualities of caffeine being well known, it has been assumed that this is the active principle of the stuff. Dr. le Bon shows, that this is not the case. According to his experiments, neither caffeine nor theobromine alone gives the required results, a mixture of the two, in the proportion by weight of five of the former to one of the ratter, are required for the purpose, and these give results at least equal to those of the fresh nut.

M. Heckel started a Company to manufacture kola biscuits of sugar and flour, but the Company has since gone into liquidation, and Dr. le Bon states that he is not surprised, as these biscuits had "un gout detestable." It appears that these are the buscuits used by Messrs. Conway and MacCormic in the Kharakorum, and also recommended in the "Travellers' Guide," published under the auspices of the Geographical Society.

Dr. le Bon's advice is to import fresh nuts, properly selected, direct from the West Coast, and suggests that no difficulty exists to this proceeding; he has done so himself, and obtained his nuts at a cost of 3 francs per kilo., using, as sole, precaution, a packing of moist leaves. Our own experiments have been made with the ordinary dried nut of commerse, or with the various alcoholic extracts of the nut to be obtained from any chemist. Like Dr. le Bon, we have found considerable irregularity in the results, but in the great majority of cases the nut has thoroughly satisfied our anticipations, having enabled us to accomplish marches over mountainous ground, and without food or water, which were absolutely beyond our unaided physical capacity. As it was suggested by friends in the A.M.S. that these results were merely due to the aid of imagination, prolonged experiments were carried out on horses and ponies, and these animals responded to the stimulus more markedly than human beings. As matters now stand, we should prefer the fresh nut if available, but in its absence would much rather rely on the ordinary nuts and preparations to be obtained at the Army and Navy Stores, than on any other concentrated food preparations with which we are acquainted, and we have tried most of them. Arrangements are now be made for a consignment of these nuts, fresh, and selected by experts on the spot, and we shall be glad to afford every aid in our power to officers interested in the matter.

NYASALAND (B. C. AFRICA).

The London *Times* of Sept. 15th has a long account of the country now being visited by Mr. J. H. Carson and also later probably by Mr. E. Woodhouse, from which we quote as follows:—

The whole of British Central Africa, with the exception of the land immediately adjoining Lake Nyasa, the Shire River, and Lake Shirwa, consists of highlands, or mountainous masses, intersected by rivers and watercourses, and studded with villages. The highlands are practically undulating plateaus, broken by mounds, hills, and lofty peaks. Most of this hilly

country is well wooded with small trees, but the prevailing smallness of the trees is not owing to the quality of the soil, but rather to the fact that bush fires, caused by the burning of the grass by the natives in August generally destroy the growth at an early stage: and in the neighbourhood of streams big trees are met with. The plains west of Lake Shirwa abound in game of all sorts. From these and the other plains the hill land rises in most places with considerable abruptness. Lake Nyasa is a about 1,400 ft. above the sea, and from its level to Katunga, on the Shirè, about 150 miles below, there is a descent of 1,100 ft., chiefly my means of the series of rapids known as the Murchison Falls, which are in the upper part of the long bend below Matope.

At present the most important portion of British Central Africa is the Shiré Highlands, which mainly consist of two mountainous tracts, one, 6,000 ft. high, around Zomba, and the other, 9,000 ft. high, between Fort Lister and Fort Anderson. The latter tract is the Mlanji Mountains. From Zomba to near Blantyre there is also a subsidiary range which, at Blantyre, bifurcates, one spur running to the Murchison Falls, and the other running nearly south and forming the Cholo Range. On the lower portions of the hills near Blantyre and Zomba there are now numerous flourishing coffee plantations. There is also good coffee land on the Cholo Mountains, and some plantations recently established on the north-west slopes of Mlanji are reported to be doing well. Throughout the Shiré Highlands, owing to the prevalence of road robberies, it has been found necessary to plant small posts garrisoned by Sikhs and Makua. These serve their purpose; but, on the other hand, they lock up part of the military force, for which there is generally plenty of other employment.

Blantyre is, in some respects, the most important centre. It has a fine church, many brick buildings, including the vice-consulate, the postoffice, the administrative office of the collector of the district, and several merchants' houses, and is the headquarters of the African Lakes Company; but Zomba is the administrative capital, and contains the Residency of the Commissioner, the chief post office, any the houses of about twenty whites. The other stations in the Shire Highlands are Domasi, where there is a branch of the Blantyre Mission, Fort Lister, Fort Anderson, where the collector of the Mlanji district resides, three posts held by the Sikhs: Chiromo, Mpimbi, and Chikwawa, which are administrative centres; Matope, which is a station of the African Lakes Corporation, and is also a seat of the Universities' Mission; Liwondi, where there are two forts garrisoned by Sikhs and Makua, and where the collector of the Upper Shiré district resides; Fort Johnston, where there are a collector and an assistant collector, an agent of the African Lakes Company, and a naval dockyard for her Majesty's vessels on the Lake; and several detached plantations, especially in an around the Mlanji Mountains where there is a mission, and on Mount Cholo.

Not many miles behind Fort Johnston there rises a wall of steep mountains, at the summit of which is the stronghold of the irreconcilable chief, Zarafi, who raids thence. He has, since Makanjira was driven into Portuguese territory, been much strengthened by accessions of numbers of the former followers of that potentate, and, as he has twice beaten the British and has taken their *big gun*, he is regarded in the district as the great leader of the anti-British party. M'Kata, whose stronghold is near at hand, is Zarafi's brother. The influence of these two persons is so extensive that the road on the east side of the Shirè has had to be abandoned between Liwondi and Fort Johnston. Travellers going upwards on the east side have to cross river at Liwondi and continue their journey on the west bank. A fairly good native road connects Zarafi's headquarters with those of Kawinga which are situated among some more nearly inaccessible peaks. Both Zarafi's and Kawinga's people have gardens on the streams running into Lakes Shirwa and M'piri and into the upper portion of the Lujenda river, Livingstonia, at the south end of Lake Nyasa, is thickly populated and quite peaceful. On the east shore of the lake, the lakeland or low-lying district has a breadth of from half a mile to five miles. Behind this the hills rise quickly to 4,000 ft. To the south of the lake the lakeland is broader. At the north end of the lake there is scarcely any lakeland at all, the Livingstone Mountains rising almost out of the water to a *maximum* height of about 10,000 ft.

Northward from Fort Johnston there is a road along the coast to Fort Maguire, but at present it is unsafe, as Makanjira's people from Chikalu, in the mountains, are in the habit of crossing it to obtain fish from Nyasa, and to get food near the shore. Further up the coast the towns of Kalawiri, Losewa, Chingomanji, and M'tengula are all under Yao rule, all full of Arabs and coastmen, and all busily engaged in the slave traffic. They are in Portuguese territory, but not in any sense under Portuguese control, for the nearest *Portuguese official is nearly four hundred miles away* from them. Still more to the northward are some villagers of Lake people, among whom the Likoma mission has started work. The first chief to be punished for slave-raiding was one living in the Mlangi Mountains, south of Lake Shirwa, on the spot now occupied by Mr. Brown's coffee plantation. Captain Maguire with 70 Sikhs and 400 armed native irregulars, crushed him completely.

The lakeland on the western side of Nyasa is very much broader than elsewhere, and teems with all kinds of game, from the elephant down to the mpala, a small species of antelope. There are lions, leopards, hyænas, zebras, buffaloes, wild hogs, wart hogs, elands, koodoos, hartebeests, water-bucks, reed-bucks, and bush-bucks, and, behind, on the mountains, there are sable antelopes. It is a sportsman's paradise.

PLANTING AND PRODUCE.

THE SAME OLD GAME.—The Chinese tea growers, or at least many of them, have played into the hands of Indian and Ceylon planters by ignoring the requirements of foreign markets, and refusing to make any improvements in their methods. They follow the old plan, and when trade is bad they cast about how to mend matters by ways that are vain. Our consul at Amoy writes of the tea from that port: "There was no improvement in quality, but, on the contrary, some unscrupulous dealers took to mixing inferior leaf with good Formosa tea, a trick which seriously threatens the existence of that article on the American market, where it already shows a considerable falling off."

MACAO AND "LIE" TEA.—In his report on the trade of Macao, Mr. Joly, the acting vice-consul, throws some light on the trade in "lie" tea, which, by the way, it has been said had almost ceased to exist. The trade of Macoa is genuine tea is in such a sad plight that it has been found extremely useful to develop the trade in a composition known by the appropriate name of "lie." These teas are manufactured from exhausted tea-leaves, which are dried, refired and mixed with a certain proportion of genuine tea and of seeds and dust. Most of this preparation proceeds to Hamburg, where no "Adulteration Act" is in force; but a good deal of mystery enshrouds its ultimate fate. According to Mr. Joly, some of this "lie" tea is often packed in chests labelled "best congou," and shipped to India for the lower classes. It is better to assume that its precise destination is not traced, for no doubt it goes wherever there is a market for it. In America and Australia they strongly object to the stuff, and the more they know of India and Ceylon teas the less likely are they to put up with bogus of or inferior tea of any kind.—*H. and C. Mail.*

LADY BUGS FOR INDIA.—Henry Hubbard, of Florida, made a shipment of lady bugs to India a few days ago. A small colored boy has been employed to capture a thousand or more of these bugs which are wanted in India to destroy the scale insect.—*Florida Agriculturist*, Sept. 5.