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costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

Ramarama (*Myrtus bullata*).—A handsome tree, useful for rails, and used by turners.

Rewarewa (*Knightia excelsa*).—A remarkably handsome furniture wood, from its curious cross grain; is much used by turners. This is a wood well worthy of the attention of English cabinetmakers.

Tarata (*Pittosporum crassifolium*).—A very handsome hardy shrub, easy of carriage.

Tawa (*Nesodaphne Tawa*).—A tree much used by coopers for staves, and said by them to be equal to oak.

Titoki (*Alectryon excelsum*).—A very tough wood, much used by cartwrights and turners; does not reach a sufficient size for sawing.

VI. *Notice of the Cinchona Cultivation on the Neilgherry Hills.*

By Dr Hugh Cleghorn.

The cultivation of *Cinchona*, or the Peruvian bark plant, is likely to supply a new produce for the trade of India. Mr Vincent, an enterprising planter, has secured 5000 *Cinchona* plants for the land he has purchased, and M. de Facien, an enterprising planter, has secured as many more. Altogether, the orders on record exceed the number of plants Mr M'Ivor (the superintendent of the Ootacamund garden) will be able to supply at the close of the current official year, which we understand will be 34,000. The plants available in the course of the next year, or from May 1863 to April 1864, are estimated at 100,000. This will be out of the Government nurseries, but the settings from their own stock, which planters in the meantime will have been able to rear, will be something considerable, for a single plant, some six feet high, in the public garden here, has given Mr M'Ivor no less than 900 cuttings, each the nucleus of a healthy sapling now, with the promise of a gigantic forest tree hereafter. The enormous source of wealth to which the *Cinchona* points, is actually derived from bricks. When a shoot is taken off a plant, it is immediately placed in a pot filled with brick dust. Hundreds, nay thousands of these pots may be seen in Mr M'Ivor's conservatories, covered with what look like nothing more than diminutive leaves thrust into them. Here the shoots are allowed to remain till they recover from the shock attending their severance from the parent stem. They are then transferred to pots charged with a mixture of decomposed felspar and garden mould, in which the process of rooting goes on. Several acres of shola land in the vicinity of the Government garden have been planted, and there can be no doubt that wherever the shade of a forest tree has fallen upon the interesting suckling below, it has pined and withered, or been stunted. The instances of this effect in a romantic glen to which Mr M'Ivor will cheerfully lead visitors are very remarkable. At a few yards from the umbrage of a group of trees, the plants look exceedingly flourishing, but their healthfulness, size, and vigour diminish in proportion to their approximation to shade. Some plants, which were put out in the Government garden in various positions a year ago, fully bear out this result. Those in the shade look sickly, and those subjected to drippings look worse. Mr M'Ivor does not consider the Ootacamund plantation a complete demonstration of his principles, that at Neddiwattum being more corroborative of his views; but any one knowing the difference between a healthy and a sickly plant, must at once acknowledge that shade is not the condition for the active development of the *Cinchona*. There are, of course, other important particulars connected with the ultimate success of the *Cinchona* in India which must be left to time and ex-

periment to establish. We might mention the earliest period of growth at which the alkaloids begin to show themselves,—the efficacy of decoctions and infusions made from dry bark and leaves compared with their virtue when prepared with fresh specimens,—and the possibility of dispensing in a large measure, if not entirely, with the expensive manufactured article, quinine, in the event of bark and leaf possessing sufficient curative properties to be exhibited in most forms of fever disease. One or more of these points, accompanied with the requisite materials for arriving at correct results, will, we believe, be shortly submitted for decision in England. A very interesting feature in the habitude of the *Cinchona* plant is its power of reproducing its bark, when deprived of it, to a greater thickness than the original formation. This peculiarity, we learn, has been noticed by Mr M'Ivor, after covering the denuded parts with moss for a month or two; but whether the larger volume of the bark thus produced will contain a proportionate excess of alkaloids, is a subject which at present rests in obscurity.

Professor Balfour read a letter which he had received from John Allan Broun, F.R.S., of the Trevandrum Observatory, Madras, in which he says:—"I used to botanise when in Scotland, and have always felt anxious to do something in that way among our unknown mountains, but my other pursuits have always prevented me. I tried to make a collection of a few plants, chiefly orchids, ferns, and mosses, but I had no good drying paper, only old newspapers, and it was very cloudy and damp, so that most of the flowering plants are spoiled. Could I have made out a collection worth anything, I would have sent you a set of the specimens. The finest palm of these mountains is the *Bentinckia Condapana*. I think it is the most graceful palm in Northern India. It grows chiefly in the clefts of precipices and among rocks not easily reached; but there are such forests of it on some slopes that we were kept from starving by cutting it down for the cabbage (young shoot), which is delicious. Raw, it is like the finest walnut; but we had it cooked as a vegetable and as a curry, when we had nothing else to eat. Its effect in the foreground in groups, and even in the distance of the landscape, is very fine. I have no book on palms, but I believe it is not found in the Neilgherries, nor do I know if it exists in Ceylon. It is found at a height of from 2500 to upwards of 5000 feet at the place where I have been, but I have no doubt it would grow at higher stations. I have brought down a few young plants to try to make it grow here. We have a museum here, of which I am honorary superintendent, and I tried to get up a botanic garden, but nothing has been done as yet. This climate is almost exactly that of the country of the *Victoria regia*, and I have a fine tank in which I could put it. Could you help me in any way to get a plant for our garden?" (Seeds have been sent.—J. H. B.)

Dr Richard Gambleton Daunt, Comprinos, St Paulo, Brazil, sent a specimen of the pod and seeds of "*Perovinha do Campo*," which are said to be used in epilepsy and other diseases in South America.

The following extract from a letter from Professor Lawson, Queen's College, Kingston, Canada, was read:—"At present we have warm dry weather. Around Kingston the crops are suffering from drought, but in other parts of country where I have been there has been plenty of rain. Insects, however, are actively at work, and the farmers fear much damage from this cause. Last winter was a very severe one for plants, apparently throughout the whole of Upper Canada. Fruit trees, roses, and strawberries suffered a good deal; such garden plants as Sweet Williams, *Lychnis dioica*, &c., were completely killed in many places; nevertheless

at Kingston, even where hardier plants than these gave way, *Yucca filamentosa* retained its leaves throughout the winter uninjured, and *Diclytra spectabilis* is perfectly hardy. Our Botanic Garden is making progress. We have about seven acres of land, which is being gradually opened up into flower borders, and many of our students and graduates are active in bringing in roots from the woods, while the citizens of Kingston send contributions from their gardens, and members at a distance contribute seeds and such rare plants as come in their way. We are under great obligation to Professor Asa Gray, who, in the most liberal manner, sent a large collection of roots from the Botanic Garden at Cambridge, including many rare species that could not have been otherwise obtained."

Messrs P. Lawson and Son exhibited a specimen of *Sequoia*, which had been raised from seed sent from California, and which has been named *Sequoia Lawsoniana*. They also exhibited and presented roots of *Chærophyllum bulbosum* or bulbous-rooted Chervil, which are used for food. When cooked they resemble potatoes.

Professor Balfour exhibited specimens of Bulbs of Hyacinth and *Allium ursinum*, assuming a solid corm-like form after flowering.

Professor Montgomerie Bell presented a large fruiting branch of *Opuntia vulgaris* or "Prickly Pear," cut in his garden at Malta, 17th June 1863.

Mr F. Naylor presented specimens of *Briza maxima*, collected, apparently in a wild state, in Jersey.