THE COCOANUT TREE.

Alfred Trumble entertainingly describes in the *American Agriculturist* a tour he has been making among the cocoanut growers in the tropics:

Straight up, for 50 feet, an ash-grey stem, banded with many indented rings, springs from the yellow sand. Far up, the sea breeze rustles a feathered crown of sweeping fern-like fronds, which wave against the sky like so many gigantic plumes. As we looked up in delight at this, the first cocoanut tree that we had ever seen, a sharp snap sounded overhead, and we dodged just in time to save our head from a large nut, which, breaking from its stem, had fallen and now rolled at our feet.

On a schooner bound to Aspinwall, we had run ashore during the night on one of the many coral reefs which wall the Central American coast from the deep Carribbean. By day, the islet would have been visible enough, with its great tree standing a warning beacon, tall and solitary. But the night had been dark, and we had made the closer acquaintance of the signal tree. We were carried, a couple of days later to St. Andrews, by a native fishing boat, which had been on a cruise after turtles, and which we signalled. There we saw the cocoanut in all its glory. St. Andrews is the chief supply port of the cocoanut in the American tropics. The nuts are brought north from all along the coast and from many of the West India islands, but St. Andrews is the great producing centre. The island is given over entirely to cocoanut growing. The nuts are its only currency, and from them many of the islanders have grown rich, as riches go in that primitive society. The crop, which was originally planted by nature, has since been improved by man, and now St. Andrews is said to produce the best cocoanuts in the world.

The foliage of the cocoanut palm is inexpressibly beautiful. Imagine from 15 to 20 gigantic ferns, dark green in color and with tough-fibred, sharp-pointed and highly-polished leaves or fronds. Bunch these at the end of a towering pole, and set them swaying and clashing in the breeze and flashing the sun from their polished surfaces, and you can form an idea of the tree.

The cocoanut makes its first appearance above ground with a delicate fern like shoot. Another and another follows until the growing plant looks like a gigantic fern. Then a couple of leaves turn yellow, brown, and bright russet, and drop off, and you see a foot of stem between the remaining leaves and the ground. It takes from seven to ten years to send the tree up to a height of 20 feet. Then it begins to bear. The first crop of nuts is from 15 to 25 a year. When it is in full bearing a tree will make an annual yield of from 80 to 100 nuts, or even more.

The cocoanut propagates with amazing readiness. A nut washed ashore on some tropical beach is rolled up by the tide. Then the rain rots the husk, and the winds bury it in the sand, and next year a cocoanut palm is springing from the arid ground. The trees protect the tropical beaches from the action of the tides. Their roots spread out and interlace into a tough and matlike network, which opposes a wall of vigorous resistance to the gnawing and encroachments of the sea.

Everyone knows what the ordinary cocoanut of commerce looks like. In nature, however, it is enclosed by a thick, tough husk, fibrous on the inside, and from two to three inches thick, but covered without with a smooth, light green rind. This husk is either split with a blow of a heavy wood knife, and torn from the nut, or else the nut is husked by splitting the rind on an iron blade set in a log. It is from the fibre of the husk that the mats and cordage of commerce are made. The fibre is rot-proof in water, and in tropical ships is popular in the form of coir rope. The uses of the cocoanut in all forms are manifold. The value of the fruit for food is its best recommendation. The meat of the nut is macerated and soaked in water, and pressed, when it yields a rich oil, very pleasant in flavor at first, but soon growing rancid on exposure. This oil is also obtained by boiling the meat, and furnishes a stearine for candles. It is used pure for burning and in soap making. Soap made from cocoanut oil forms a lather in salt water. Mixed with resin, the oil makes a valuable pitch for caulking. It is largely used in tropical cookery, and on holidays many of the aborigines and blacks besmear themselves with it as if it were a perfume. The meat from which the oil is obtained is savory, but, being rich in fat, is very indigestible.

A green cocoanut contains only a milky fluid, which gradually consolidates on the inside of the shell. When the nut becomes over-ripe on the tree, only a watery milk is left in the shell. This rapidly sours, when the nut becomes worthless. If it is picked, however, before it grows too old, the milk preserves it sweetness.

The leaves of the cocoanut palm furnish the most durable thatch known in the topics. They are also extensively worked into mats, screens, baskets, boxes and so on. When dampened and exposed to the sun until the green portion rots, the fibre is carded and woven into coarse cloth. The wood is fine-grained and hard, and is used in ornamental work under the name of porcupine wood. The fibrous heart of the old stems is made into cordage. The husk is used for burning and makes an excellent scrubbing brush.

A NEW USE FOR SAWDUST.

The Deseronto, Ont., *Herald* states that patents have been issued to E. W Rathbun and George Walker for blocks of consolidated sawdust and tar, mixed in certain proportions, for the manufacture of gas for light and fuel. The gentlemen referred to are one of the proprietors and the chemist of the Rathbun Company, of Deseronto, near the foot of Lake Ontario, that cuts about 50,000,000 feet of lumber a year. This company has been for sometime profitably extracting acids from sawdust, and the present invention is one of the results of the practical information they have acquired in this way. It has long been knew that gas of good quality, in moderate quantities, could be obtained by the distillation of wood, but it has only been demonstrated within a few years, that by heating wood to very high temperatures enormous quantities of gas could be produced as compared with coal. Taking this hint it is proposed to manufacture gas from sawdust and mill refuse. While on the manufacturing scale only about 9,000 to 10,000 cubic feet of gas are obtained from a ton of coal, it is not unusual to obtain 30,000 cubic feet from the same weight of wood. By this recent invention a gas producing material is obtained from sawdust from which 40,000 feet of gas of any desired illuminating power may be obtained per ton. The invention referred to consists in mixing tar, while in a fluid state from heat, with sawdust, and after thoroughly mixing these ingredients immediately consolidating them in a powerful machine capable of effecting so close a union between them as to render their separation during roasting impossible. The difference in cost according to Mr. Walker's calculation, between coal and wood gas is enormous, and he adds that with very few changes coal gas works can be used for sawdust blocks. The cost of coal gas he estimates at from 50 to 75 cents per 1,000 cubic feet in the holder, whereas the cost of gas from the blocks would be $6.12 for 33,000 cubic feet, or 1,611c. per 1,000 cubic feet, the product in gas of 2,000 of gas blocks. If these calculations are anywhere near correct a revolution in gas manufacturing may be anticipated.

It will be remembered that the gas works of Messrs. Rathbun were burned down not long since.

THE SWEDISH SUPPLY

The *Timber Trades Journal* of Feb. 2, says: Swedish saw mill owners will do well to curtail their stocks if they can, but the question is, will they be able to accomplish this, to them, much desired end? The difficulty of the task will lie in one common bond the various conflicting interests predominating throughout the numerous shipping ports that lie along the Gulf of Bothnia—from Tornea, in the extreme north, to Gefle, and the more southern loading places. Of course, the greater portion of the Swedish supplies lie between Gefle and the Pitea River, and this region, embracing the Sundswall, Soderham, Hudikswall, and Hernosand districts, represents an export of something like 500,000 standards of sawn wood, and if any general agreement could be arranged binding the shippers to some limitation, the effect on the markets here would undoubtedly be very considerable. Now that the season has fairly commenced it is very doubtful whether the generality of shippers will care to embarrass themselves with pledges, and the likelihood is that no limitation will be noticeable on the average quantity of stocks for shipment first open water.

It was suggested at the meeting of the Swedish Society of Saw mill Owners at Stockholm, that the stock notes should not be issued before the middle of the month, and that they should then only be forwarded to the agent in each country. But this has not been acted upon generally, and we note several price lists have been issued to the trade here. Two of the largest Swedish shipping houses already have their prices in print, and any further delay, if contemplated, has evidently not been carried out. The task of limiting the export of a country like Sweden in the 19th century is a Herculean one, and if it is accomplished it will make the present season stand out as one of the most remarkable in the annals of the trade We have often reports of similar arrangements to record, but the result has always been a direct contradiction to them, illustrating the immense difficulty surrounding such a scheme

To carry it out successfully, the compact should, we consider, have been entered into much sooner than has been the case this time; for though a limitation of the product was mooted in November last it does not appear to have taken any shape until after the year had finally closed. Under any circumstances we scarcely think it can succeed, the obstacles in the way being so immense.

That several of the large export houses will stick to their promises, if things continue as they are, we have very little doubt; but circumstances alter cases, and with a rising market, with plenty of the raw material available, the self-denial on the shipper's part in keeping his mills working below their full strength would, we fear, be more than human nature is capable of.

FIRE EXTINGUISHING APPARATUS FOR SMALLL MILLS.

Some time ago we called the attention of our manufacturers and others to the importance of a more general adoption on all the floors of manufacturing establishments of water buckets, axes, and other hand appliances which might be useful in combating fire.

The *Manufacturer*, published at Toledo, Ohio, takes the subject up, and gives some figures as to the cost of supplying factories with simple means of self protection against fire.

Among mills and factories where the capital invested is too small to admit of the outlay for pumps, hose and sprinklers, usually provided in larger establishments, says the writer, a large proportion remain without any means of suppressing any fire that may break out in the premises, though the ravages of the element in this class would indicate some preventive measure as an absolute necessity.

Forty-five dollars is a liberal estimate for the cost of casks, buckets, and auxiliary apparatus, in an ordinary four-story mill. The apparatus will last for many years, and may be the means of saving property at any moment. A suitable arrangement for such a mill would be as follows:—

For each floor two good water casks, with covers to exclude dust, four pails, two axes, two crowbars, and one saw. For water casks, empty oil barrels are as good as any, if not the best. These should be fitted with covers like cheese box covers, setting loosely over the casks and having handles on them to lift them off by. All the salt that the water will dissolve should be put into the casks, both for its effect on fire and as a preventative of freezing. One cask on each floor should be placed near the stairs and the other as remote from the first as practicable; over and about each should be hung two pails, an axe, and bar, for reaching quickly such fire as may lodge in any concealed space, and by the cask on each floor nearest the stairs, a medium sized hand saw. Wooden pails are unfit for this use owing to their liability to warp, shrink, and fall to pieces when handled at a critical moment. Fire pails should either be of leather, paper, or metal, well galvanized or otherwise protected, preferably the latter two, which neither shrink, crack, nor deteriorate with age.

The cost of such an equipment for such a mill would be about as follows:—

8 casks at $1.00 each	$ 8 00
Covers for same at 25c. each	2 00
16 paper pails at $4.80 per dozen	6 40
8 axes at $1.25 each	10 00
8 bars at $1.00 each	8 00
4 saws at $1.50 each	6 00
Salt	60
Painting and placing in position	2 00
Total	$43 00

These figures are sufficiently liberal to cover all freights and other charges, and are for goods of the best quality. Every article should be marked in large letters, "Not to be removed except in case of fire," and instant discharge should be the penalty for disobedience of this rule. Somebody should be charged with the duty of examining the casks at stated intervals, keeping them full and seeing that the other articles are in their places With these precautions and light expenditures, provision is made for extinguishing any fire discovered in season, with apparatus easily understood and requiring no previous drill for its application, and which has proved adequate in a vast multitude of cases.—*Scientific American.*

How a Union Soldier Made a Fiddle.

It was at the "Brandy Station," Va., in the winter of 1863-4, says the Westfield, Mass., *Times*, that George M. Colt, Company C. Second Vermont Volunteers, proposed to make the cheer-giving instrument; and with a hatchet, jack knife, file, and a piece of junk bottle as his only tools, he cut a piece of maple from a stump that grew on the bank of the Rappahannock River, and set to work. The back and sides of the fiddle are made of one piece—a "regular dug out." The top is of hemlock taken from a box which brought some "goodies" from their friends in "Varmount." The bow is of maple. The keys were made from the horns of some Confederate cattle that fell into our hands and were devoured by our carnivorous soldiery, so that the poor brutes contributed to our mental as well as physical welfare. The hairs were pulled from the tail of the Colonel's horse, who was fond of music and never raised a foot in resistance. It is said that he even signified his willingness to furnish enough of his hoofs for glue, but that was found elsewhere, and the instrument was completed and in the hands of a modern "Paganini," who rose for the occasion, gave forth its soul stirring strains. It conjured up the "stag dances," serenaded headquarters, and was admired and cherished by the officers and men of the "Green Mountain Boys." The rest must be left to imagination, as far as its army record is concerned. Suffice it to say, it was "honorably discharged," and has been the hero of several occasions since the war, receiving the first premium at the Vermont State Fair. Rude as is its origin, its tone is remarkable sweet and expressive, especially in the rendering of "Old John Brown" and other airs that were offsprings of the war, which seem to revive in it the memory of the exciting scenes of its early existence. Its maker and owner still lives, though he received wounds after the production of his instrument that have nearly disabled him for active duty.

Amount of Lumber in Michigan.

The following table shows the amount of lumber now on hand at the principal manufacturing points in Michigan:—

	Feet.
Muskegon	120,000,000
White Lake	18,000,000
Grand Haven	54,000,000
Manistee	20,000,000
Ludington	6,000,000
Big Rapids	10,000,000
Flint	15,000,000
Saginaw River	370,000,000
Lake Huron shore	112,000,000

There is but little difference between the amount on hand now, as shown above, and at the same period last year.