

THE
PLANTERS' MONTHLY,

PUBLISHED FOR THE

Planters' Labor and Supply Company,

OF THE HAWAIIAN ISLANDS.

VOL. VIII.] HONOLULU, NOVEMBER, 1889. [NO. 11

The latest quotation of sugar in New York, on the 8th inst., was 5½ cts. for 96 deg. Cuban basis.

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Copious rains have fallen throughout the entire group during the current month, and the crops are looking very well.

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Three diffusion plants will be in operation to take off the crop for 1890, on Kealia, with 7,000 tons; Hamakuapoko, 5,500 tons; and Princeville, Kauai, with 1,500 tons. Should these prove successful, other plantations will adopt diffusion.

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Consumption of sugar per head of the population of the following countries, in pounds, is: England, 66.57; United States, 47.19; France, 22.83; Switzerland, 21.37; Holland, 19.94; Denmark, 19.05; Germany, 18.64; Belgium, 18.32; Norway and Sweden, 17.42; Austro-Hungary, 11.08; Greece, 10.00; Portugal, 9.00; Russia, 8.64; Spain, 7.40; Italy, 7.19; Turkey, 4.33; Roumania, 3.86; Bulgaria, 3.30; Servia, 2.94.

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And now Japan is endeavoring to introduce the cultivation of the sugar beet, and establish a factory near Yesso, the capital of that kingdom. So far, beet culture has been engaged in only by a few of the people, who have been encouraged and assisted in their efforts by the Government. The beets show a

good saccharine quality of about twelve per cent. The enterprise has the promise of further assistance from the Government.

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The new German sugar legislation which came into force in August, 1888, levying a tax on consumption as well as on beets worked up, has proved a success, the net receipts of the Treasury having been nearly $39\frac{3}{4}$ millions of marks, against not quite twenty-four millions of marks for the preceding year. The bonus obtained under the new legislation is, according to M. Dureau, two francs fifty-five cents per sack of raw sugar, in place of six francs under the old *regime*, or not one-half.

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Advices from Watsonville, Cal., speak favorably of the beet sugar prospects at that place. A larger area of land was planted this year, about 1,200 acres, or double the area of 1888, and the average density of the juice is about fifteen per cent, or one per cent above the standard for which four dollars per ton is paid for the beets. The best beets have realized between seven and eight dollars per ton. The factory people say that if 2,000 acres are planted annually the crop will all be diffused, and the enterprise placed on a permanent and paying basis. The factory has turned out over sixty tons a day, and the outcome for 1889 will be about 2,400 tons of raw sugar.

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THE NEW DIFFUSION APPARATUS AT HAMAKUA- POKO, MAUI.

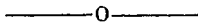
The diffusion plant in course of erection at Hamakuapoko is approaching completion and will, from present appearance, be in full operation by the middle of December. This plant is very extensive and complete, and contains all the improvements known to this process up to the present time. The amount of machinery and other apparatus necessary for diffusion is far greater than is generally supposed. It is also more complicated and more elaborate, and forms a very considerable addition to a sugar mill.

This mill was one of the largest and finest on the island before this improvement was made, and the diffusion plant will make it still more attractive. Superheaters are also being put in this season, which it is supposed will greatly facilitate the work, and economize the steam and fuel. Electric lights also, are to be put in, which will, it is expected, light up every corner of the mill, and make it as bright as day. The mill is being put in first class order in every respect, so that diffusion will have a fair trial. Besides these improvements, quite a num-

ber of buildings have been erected in Hamakuapoko, which have considerably improved the appearance of the place.

We are also glad to learn that on this plantation a very fine billiard table, reading-room and library are provided, which are opened and lighted up every night at five o'clock and kept open until ten o'clock P.M., excepting Saturdays when the room is kept open until eleven o'clock.

Paia mill is also getting a general overhauling; superheaters are put in, and quite a number of improvements are being made. There is also a billiard room just erected here by the owners of this plantation, so that the employees can enjoy themselves when their work is done. These attractive features provided by the owners of these two plantations are duly appreciated by their workmen, who are much better contented with this kind of life, and are more willing and helpful, and more likely to remain where such interest in them is shown.



MINOR INDUSTRIES.

Eighteen or twenty years ago, when the Hawaiian Hotel was first opened to the public, there was a scarcity of vegetables to supply the table. Everybody said that vegetables would not grow here, because some few persons had tried to raise them without success. It is true that Mons. Victor Chancerel, who kept the French Hotel on Fort Street, did raise one crop of peas in his garden, but he always declared that each pea cost a dime, making too costly a dish to furnish his patrons with. His success with vegetables was very much like Horace Greeley's with turnips, each turnip having cost him one dollar to raise.

Mr. Allan Herbert, who had the Hawaiian Hotel at that time, determined to supply his patrons with something fresh, just what he did not know until after a trial. For this purpose he leased the old Adams homestead at Kalihi, secured some good vegetable gardeners and set them to work planting cabbages, melons, beets, lettuce, etc., with the result that he kept his tables supplied with a good variety, considering what he had to contend with. Soon after this, Chinese went into the business and demonstrated that vegetables could be raised here as well as in California.

About a year ago, Mr. Herbert determined to try raising asparagus at Kilihi, and for this purpose procured roots from San Francisco sufficient to plant about one acre. The ground was dug up, mellowed and put in first class order, and the roots set out. The result was a crop of as fine asparagus as was ever seen in California or any other country. From his beds he supplied the Honolulu market for two or three months, the

receipts for the season's crop amounting to about \$1,500. A few weeks since, we visited his place at Kalihi, and were surprised to find how thrifty this asparagus patch was. The plants were in bloom, their beautiful red berries making a novelty not often seen here, and a very pretty ornament for decorations. He is now ready to supply any parties with roots and the ease with which the plant is propagated will enable any person to have his asparagus bed, and to supply his table with this most delicious and healthy vegetable. He will give instructions to any persons who purchase the roots, and if the inducement is sufficient will send a gardener to set them out and to insure their being well planted. They grow best in bottom land, and thrive even in slightly salty soil.

Now here is an industry which might be started by any good gardener, who has an acre or two of suitable land on any island or any plantation, and from this alone a good living may be obtained. Asparagus and peas will grow well in the same soil and locality, and furnish two of the best table vegetables to be had.

Mr Herbert has also a variety of fruit trees planted, and among them some very choice Chinese fruits. In the line of fruit trees, he offers to furnish any parties who wish them, the best of trees from his nursery in California, and deliver them in Honolulu at a low cost. Those who want fruit trees will do well to address him.

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SUGAR CROP ESTIMATES.

It is somewhat remarkable that there should be such a wide difference between the estimates of the two principal firms who have made a profession of estimating the beet sugar crop of Europe, for several years past. Mr. Licht, of Magdeburg, places his estimate, October 10, at 3,155,000 tons; while Mr. Gorz, at Berlin, who is supposed to have equally reliable sources of information, puts it at 2,800,000 tons, a difference of 355,000 tons. The only reason that can be given is that one may be interested in having the product as large as possible, while the interests of the other lie in an opposite direction. Weather changes or "probabilities" also may have more weight with one than with the other. One thing, however, is certain, that in former years Licht's estimates have had to be reduced very much by actual returns, while Gorz's have proved nearer correct. These rival estimates would not be worth noticing, were it not that they influence the market very much, and encourage speculation in sugar, which has become a fancy article for the gambling rings.

A NEW SUGAR ENTERPRISE.

The organization of the "Hawaiian Sugar Company," with a capital of two million dollars, is the principal event of the month. The majority of the stock has been taken by Hawaiian and American shareholders, and being organized under our laws, it will be officered and controlled here. The officers chosen at the meeting called on the 2d inst., to organize the company are :

H. P. Baldwin, of Maui.....	President
G. W. Macfarlane, of Honolulu.....	Vice President
J. A. Hopper, of Honolulu.....	Secretary
E. M. Walsh, of Kauai.....	Treasurer
P. C. Jones, of Honolulu.....	Auditor

The Board of Directors consists of the President, Vice President, Secretary, Treasurer, C. R. Bishop, G. N. Wilcox and R. M. Catton.

The location of this plantation is on the fine plain of Makaweli, lying between the Waimea and Hanapepe rivers, on the lee or south side of the Island of Kauai. We alluded to this enterprise in March, 1888, at the time that Mr. Watson was here and decided to take hold of it, having obtained a lease of the land from the owners, for thirty-five years. The term of the lease has since been extended to fifty years, which will render the stock more valuable as an investment. The area of land available for sugar planting is about 6,000 or 7,000 acres, and it is thought that water can be secured from the two rivers flowing past it, to irrigate the larger part, if not the whole. The land lies sloping towards the south, the best position that could be desired, and the soil is volcanic and of great depth and fertility.

The expense of bringing the water onto the land will be very great, requiring an outlay of about half a million dollars. Surveyors are now at work to ascertain what plans to adopt to accomplish this in the best way. Large iron pipes will probably be used, to act as a siphon in raising it from the valley to the high land. This, of course, will require the best of engineering skill and experience.

The harbor facilities for landing freight are considered good, in all seasons except southerly winds, which occur only during the winter months. It is quite likely that a pier can be run out into deep water, alongside which steamers can come to load and unload passengers and freight, except only in storms referred to above.

The machinery for this large estate will be furnished by Mr. Watson, of Glasgow, and it will probably be a diffusion plant, though this has not yet been decided on. It is estimated that

the plantation will be able to add at least 6,000 to 8,000 tons of sugar to the annual yield of these Islands. This, however, will depend largely on the success attending the elevation of the water from the two rivers. This is one of those enterprises which every well-wisher of the prosperity of Hawaii will rejoice to see commenced and brought to a successful stage. Although others have made investigations and surveys regarding the amount of water and cost of making it available for plantation purposes, yet the credit belongs to Mr. W. R. Watson and G. W. Macfarlane of having secured the franchise and engineered the enterprise to a point which leaves no doubt of its becoming one of the largest and most profitable sugar estates in this group.

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CANE BORER IN LOUISIANA.

Never before have complaints of the tropical cane borer been so pronounced over so extended a territory as the present season. It is to be feared that, should the winter prove an open one, they may do very serious damage to the next crop. In 1857 they were so abundant along the lower coast as to have about destroyed the crops on one or two plantations. They again appeared in the same locality, and in Assumption and St. Mary, in large numbers, in 1880, after the open winter of 1879. They attack sorghum and corn in the same manner as cane, and are known near the coast throughout the Gulf States. The moth is of a light, grayish brown color, with about one and one-fourth inch spread of wings. This lays its eggs upon the leaves of the cane, near the axils, the young borers hatching in a few days. The borer penetrates the stalk at once, usually just above a node, working upwards through the soft pith. The full grown borer is about one inch long, slender, cylindrical, and cream white in color, with yellow head and black mouth. Several broods are hatched in the course of a season. It is believed to hibernate almost exclusively in the larva or worm state. Those which find shelter in the stubbles, discarded tops and seed cane, alone escape destruction during the harvest of the crop. Fortunately, few are found to burrow near the extreme butt of the cane. If cut at the surface of the earth very limited numbers will, therefore, be preserved in the ratoons. A speedy burning of the tops, after removal of the crop from the ground, will destroy those which would be carried over to the next season by these. An immediate plowing under of all tops seems the next best alternative, but undesirable. They certainly should not be allowed to remain on the surface of the ground until warm spring weather. Borers present in seed cane are not so easily dealt with. It is probable that from canes planted in the autumn

and rolled the moth is unable to escape. The same is true in less measure of seed put down in windrow, if as heavily dirted as is compatible with the canes' safety. This should be dropped and recovered as soon after removal from windrow in the spring as possible. Mats, both flat and round, are especially to be avoided for affected canes. It will be safest in all cases to put down as seed such canes as are least attacked. No abandoned forage sorghum should be allowed to go over the winter, and corn-stalks should also be plowed under, or be otherwise destroyed before winter is past. To neglect these precautions may be ruinous. There are, perhaps, more borers now in your field than you suspect.—*Louisiana Planter Nov. 2.*

SUGARCANE DISEASE.

London *Sugar* publishes the following letter received by the Secretary of the British Guiana (South America) Association relative to this disease. It will be remembered that we published a statement in our MONTHLY of March, page 143, which, however, did not represent the disease so dangerous as the following. We trust that no foreign canes will be allowed to be imported into this country, on any conditions whatever. Better to keep them all out.

“WEST INDIA COMMITTEE, BILLITER HOUSE, E.C.,
“LONDON, July 10th, 1889.

“*Dear Sir:*—I am instructed to inform you that from a recent visit to Java by Mr. Quentin Hogg, it is evident that a disease of the sugarcane is seriously affecting the crops of that country. This disease is called “Sereh,” and is extremely infectious and threatens to ravage the whole island. It is also reported, although we have at present no proof of it, that this disease exists in Mauritius. In many districts of Java every cane top has to be imported from Borneo and elsewhere, and some estates visited by Mr. Hogg were spending £5,000 annually in this way. Even imported cane tops only yielded a single crop; all the tops and stools resulting therefrom requiring to be destroyed. The disease is so virulent that one or two diseased canes will infect and ruin the whole of the cane piece. When it is remembered that the coffee-leaf disease destroyed the whole coffee industry of Ceylon, it is most desirable that a similar cane disease, having the same disastrous effect, should be prevented from approaching the West Indies. I am, therefore instructed to ask you to be good enough, in connection with this important matter, to communicate with the Government, so that the Botanical Gardens and others should not import for experiment or otherwise any cane coming from the East. A single diseased cane is sufficient to do irreparable mischief. The marks of the disease are: (1) In young canes

the shoots throw up a number of useless and short shoots which come to nothing, and no cane is produced. (2) In older canes the white mark down the center of the leaf is broken, and red spots appear, in the cane itself white rootlets appear at the joints. The following year the symptoms mentioned above take place and absolutely no crop is obtained.

"Experts have not yet been able to settle satisfactorily whether the pest is of animal or vegetable growth.

"Yours faithfully, (Signed), J. L. OHLSON."

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CLAUS SPRECKELS—BEET SUGAR.

We admire Claus Spreckels because he is using his brains and his capital to establish an industry in this country that will add vastly to our material interest, both in agriculture and in commerce, by bringing about the extensive cultivation of sugar beets and their manufacture into sugar itself. And so we hail with supreme satisfaction every intimation that he is moving on to the consummation of this grand scheme.

We learn that he is working bravely in the use of all the means requisite to this end at home and abroad. He has just returned from Europe and is fully posted in all the particulars that enter into this business. He has noticed the fact that beet culture has been fully successful there, and he does not see why it may not be here—and in the east as well as in the west. He is so confident now, he will buy all the crude beet sugar that can be made. His refinery that is building in Philadelphia will be in operation in October, and will be the largest in the world. Its yearly output will be 300,000 tons of refined sugar. This looks like business, and indicates what an immense business can be done when the sugar beet has become a common product on American soil.

Another thing. Let the fact be once fairly established that the sugar beet can be cultivated with a good profit, and you will find such an impetus has been given to the farming interests of this country as has rarely been witnessed. We hope to see this accomplished—north, south, east and west. It is the very thing they need, and it cannot come too soon. We appreciate the conditions under which the farmers are living, and through which prices have been depressed for their products. It is time to let up, and give them an equal chance in the strife of life.

The farmer is a prime factor in our industrial life; and we can't "sit down on him" without injury to the whole. Let us awake in time and equalize the conditions of our industrial pursuits, so that each shall be protected and all be blessed with the comforts and rewards which belong to every man who works and earns.—*National View.*

*MINUTES OF THE ANNUAL MEETING OF THE
PLANTERS' LABOR AND SUPPLY COM-
PANY, OCTOBER, 1889.*

OCTOBER 28, 1889.

Members and stockholders of the Planters' Labor and Supply Company met in Honolulu, on Monday, October 28, 1889, at the Chamber of Commerce, at 10 A.M., President H. P. Baldwin in the chair, present in person or represented by proxy :

Alexander, S. T.	Kekaha Mill,
Atherton, J. B.	Kohala Sugar Co.,
Baldwin, H. P.	Kipahulu Mill,
Bailey, W. H.	Makee Sugar Co.,
Blaisdell, W.	Macfie, R. A. Jr.
Bishop, C. R.	Marsden, Jos.
Castle, S. N.	McKay, T. S.
Castle, W. R.	Morrison, H.
Cooke, C. M.	Onomea Sugar Co.,
Davies, T. H. & Co.	Pepeekeo Plantation,
Dillingham, B. F.	Paia Plantation,
Eleele Plantation,	Pacific Sugar Co.,
Faye, H. P.	Purvis, W. R. & Co.
Glade, H. F.	Rickard, W. H.
Halstead, R.	Smith, A. H. & Co.
Honomu Plantation,	Smith, A. H.
Hall, W. W.	Spalding, Z. S.
Hartwell, A. S.	Schaefer, F. A.
Honokaa Sugar Co.,	Spencer, Jas. G.
Haiku Sugar Co.,	Union Mill Co.,
Hamakua Mills,	Wilcox, G. N.
Hanalei Sugar Co.,	Wilcox, A. S.
Hawaiian Agricultural Co.,	Whitney, H. M.
Horner, W. Y. & Co.	Wailuku Sugar Co.,
Isenberg, P.	Waiakea Mill Co.,
Jones, P. C.	Walsh, E. M.
Kaneohe Plantation,	Williams, J. N. S.
Kilauea Sugar Co.,	Young, A.

The Secretary read so much of the minutes of the last annual meeting as was called for.

The Secretary's report was then read.

The Treasurer said he would furnish his report later.

Reports of Committees were then called for.

Mr. R. A. Macfie, Jr., Chairman of the Committee on Labor, requested further time; stating that he was waiting for the coming of Mr. W. H. Rickard, a member of the committee, who is expected to-morrow morning, and that he would present the report to-morrow.

The report of the Committee on Cultivation, prepared by Mr. C. Koelling, was presented and read by the Secretary.

The report was generally discussed by members present, and a variety of views and experiences were stated.

Upon request the Secretary read the minutes of meetings of the Trustees held since the last annual meeting.

On motion it was voted that hereafter the records of meetings of the Trustees be published in the *PLANTERS' MONTHLY*, from time to time, subject to the discretion of the Trustees to omit such matter as they deem proper.

RECESS.

At 1:30 P.M. the Treasurer presented his annual report, showing:

Receipts for the year.....	\$1,075 15
And expenditures.....	956 80
	\$ 118 35
And liabilities unpaid... ..	\$166 75
Unpaid subscriptions.....	140 00

There being no report from the Committee on machinery, Mr. J. N. S. Williams was invited to read a paper which he had prepared on machinery. Mr. Williams then read his paper. On motion a vote of thanks was tendered Mr. Williams, and his paper ordered printed in the *PLANTERS' MONTHLY*.

A general discussion of the advantages of diffusion over mill-crushing followed.

The report on Legislation was next in order. Mr. C. R. Bishop stated that the Chairman of the Committee is absent from the country, and no report has been prepared. But in view of a spirit manifested by certain persons in the community, and of certain newspapers, tending to excite race prejudice between the native Hawaiians and foreigners, he would offer the following resolution:

WHEREAS, the prosperity of the chief agricultural interests of the country—which are the bases of the general support and prosperity of the community—depends upon the preservation of authority, order and justice; and, whereas the maintenance of authority and security in a community made up of several races, each having its peculiar claims, prejudices and peculiarities, requires the exercise of more than ordinary wisdom, patience and kindness, and whereas, the misrepresentation, either by speech or publication of the feelings or sentiments of any one race, occupation or condition, towards any of the others can only be harmful, and tend to disturb the good relations which are necessary in order to promote moral and material prosperity:

Resolved: That, as planters and citizens we strongly disapprove of every act and publication intended or calculated to excite any distrust or prejudice in the minds of the native Hawaiians against those of foreign birth or parentage, or to excite feelings of contempt or distrust toward the natives: And resolved: That we regard it as a public duty, in return for the hospitality which has uniformly been extended to foreigners by the natives of this country during the last seventy years; for the trust and confidence which they have reposed in those of other races; and for

the disposition they have shown to improve, and to adapt themselves to the very rapid and great changes which have taken place in the affairs of their country during these years; they should be favored in every way consistent with good and stable government and the general welfare; encouraging them, as well as those of other races, to depend upon competence, honesty and sobriety for employment in positions of responsibility and profit either public or private.

The resolution was received with applause, and after remarks, it was unanimously voted that it be adopted, spread upon the records, and published in the *PLANTERS' MONTHLY* and the several newspapers published in Honolulu.

The report on Reciprocity was not ready. No reports on Transportation, or Manufacture of Sugar, or Forestry were presented.

Mr. H. F. Glade, on behalf of the Committee on Fertilizers, stated the Committee had not prepared a report, but at his request Mr. A. F. Cooke had prepared a paper which he would present. After reading the paper it was voted that the paper be received and printed.

The report of the Committee on Varieties of Cane, in the absence of Mr. W. H. Rickard, Chairman of the Committee, was read by the Secretary.

After a discussion of the subject of varieties of cane, and Mr. H. M. Whitney, Chairman of the Committee on Reciprocity being present, the report was called for.

Mr. Whitney presented and read the report. On motion the report was accepted and referred to a committee of three. It was voted to refer the report to a committee consisting of P. C. Jones, C. R. Bishop and J. B. Atherton were appointed.

The report of the Committee on Tobacco was presented and read. Voted that the same be accepted and ordered printed.

The report of the Committee on Ramie was presented and read, and ordered printed.

Adjourned to October 29, at 10 A.M.

W. O. SMITH,
Secretary.

Meeting called to order October 29, 1889, at 10 A.M., as per adjournment, President Baldwin in the chair.

A quorum being present the President called for the reading of the minutes of yesterday.

The President then called for the report of the Special Committee to whom was referred the report on Reciprocity, which was presented and read by Mr. J. B. Atherton.

Voted unanimously, that the report be accepted and printed in the *PLANTERS' MONTHLY*.

The Company then proceeded to the election of nine Trustees for the coming year, with the following result: A. Young, J. B. Atherton, H. F. Glade, H. P. Baldwin, F. A. Schaefer, P. C. Jones, F. M. Swanzy, R. Halstead and W. O. Smith.

The report of the Committee on Fruit Cultivation was presented and read by W. R. Castle. Voted that the report be accepted and printed.

A general discussion followed on the cultivation of fruit, coffee and tobacco.

Voted that the matter of preparing resolutions, upon the subject of recommendations that the Government take steps to promote experiments in the cultivation of coffee, tobacco and other products, be referred to a committee consisting of W. R. Castle, C. Bishop and F. A. Schaefer:

The report on Labor being called for, Mr. R. A. Macfie, Jr., Chairman of the Committee, presented and read the report; stating, while he felt assured that the other members of the committee were in sympathy with the recommendations of the report, they were not responsible for all the expressions of opinion contained in it.

Mr Macfie then read a number of letters received from planters, in reply to a circular letter which he had sent out, asking for an expression of views on the subject of labor.

RECESS.

On coming together of the members at 1:30 P.M., the Secretary announced that the newly elected Trustees had held a meeting during recess, and had elected officers for the coming year as follows;

A. Young.....	President	W. O. Smith.....	Secretary
J. B. Atherton.....	Vice " "	F. M. Swanzy.....	Auditor
P. C. Jones.....	Treasurer		

The subjects of labor and immigration and the report of the Committee were taken up, and a number of additional letters from planters to the Labor Committee were read.

Voted that the report be referred to a Special Committee of five to prepare resolutions expressing the views of the Company, and report to-morrow.

The President appointed R. A. Macfie, Jr., H. P. Baldwin, J. B. Atherton, R. Halstead and W. O Smith.

The subject of what shall be done in regard to the matter of Japanese laborers deserting work was discussed; and it was stated that the most feasible way to prevent such desertions would be for employers to agree not to employ any Japanese who cannot produce a certificate of discharge from his last employer.

Voted that the matter be referred to the Trustees to prepare a pledge upon the subject.

W. R. Castle, on behalf of the Special Committee, presented a report upon the subject of cultivation of coffee and tobacco with recommendations to the Ministry.

Voted that the report be adopted.

Adjourned to October 30, at 11 A.M.

The Company met October 30, at 11 A.M., as per adjournment, President Baldwin in the chair.

Minutes of the meeting of yesterday were read and approved.

The Secretary called attention to a statement published in the P. C. ADVERTISER this morning, that, "regarding laborers from other countries, these had been tried and were very inferior to Chinaman as plantation laborers."

On motion it was voted that the publisher of the P. C. A. be requested to correct the statement, as it is incorrect and misleading.

The report of the Special Committee to prepare resolutions upon the subject of labor was called for.

Mr. Macfie, Chairman of the Committee, stated that the Committee had failed to agree on their report, and Mr. Smith would present the report adopted by four members of the Committee, and that he would present a minority report prepared by himself.

Mr. Smith then read the majority report, as follows :

WHEREAS the agricultural interests and enterprises are of the utmost importance to the welfare of the kingdom,

And for the successful prosecution of these enterprises it is essential that there should be an adequate supply of laborers.

AND WHEREAS it is evident from information received from various parts of the country that the available supply of laborers is inadequate,

And that in view of the necessities of the enterprises now being carried on, and others about to be established, more laborers will be required in the future,

AND WHEREAS it is for the interests of these enterprises and for the social welfare and future population of the country that the labor supply should be made up of different nationalities, be it

Resolved, that we urge upon the Government that prompt and vigorous efforts be made to resume the introduction of immigration of different nationalities suited to the industrial needs of the country, encouraging at the same time such immigrants to bring their wives with them.

AND WHEREAS there are now in the country large numbers of Chinese and it will be desirable in the future that more of this class of laborers be introduced,

AND in view of the danger to the institutions of the country which result from an unrestricted immigration of people of this nationality,

AND recognizing that the interests of the Hawaiian people and of Anglo-Saxons, identified with the prosperity of the country, are the same upon all essential issues involved, be it

Resolved, that while we deem it desirable for the carrying on of the agricultural enterprises of the country that the introduction of the Chinese be continued, we believe it to be wise that this class of laborers be better controlled and regulated, and that the necessary legislation be enacted to restrict those now in the country (in the capacity of laborers) or who may hereafter be introduced, from engaging in trade or the mechanical occupations, but not to affect the rights now enjoyed by Chinese in the country engaged in such mercantile and mechanical occupations. And be it further

Resolved, that we believe it advisable and desire that, if practicable, no

labor contracts shall be required as a prerequisite to the future introduction of Chinese into the country.

Following the reading of this report, Mr. Macfie read the minority report :

WHEREAS agricultural interests and enterprises are of the utmost importance to the welfare of the kingdom, and for the successful prosecution of these enterprises it is essential that there should be an adequate supply of suitable laborers,

AND WHEREAS it is evident from information received from various parts of the country that the available supply of laborers is inadequate for present needs, and that in view of the necessities of new and additional enterprises about to be established, more laborers will be required in the future.

AND WHEREAS it is for the interests of these enterprises, and for the social welfare of the country, that the labor supply should be made up of different nationalities.

AND WHEREAS it would be desirable that the permanent, settled population of the country should be increased so that the kingdom may in future be less dependent on foreign immigration, be it

Resolved, that we urge upon the Government that prompt and vigorous steps be taken to resume the immigration of different nationalities, giving special encouragement to such immigration as may best promote the growth of a healthy and desirable local population,

AND WHEREAS, it is imperative in view of the urgency of present needs of plantations, that for the successful prosecution of the sugar industry, and immediate additional supply of cheap labor should obtained, be it

Resolved, that we further urge on the Government to admit such number of Chinese laborers as may be requisite to relieve the absolute necessities of plantations.

(Signed)

R. A. MACFIE, JR.,

Minority member of Committee on Labor.

October 30, 1889.

At this point Mr. W. R. Castle presented an invitation to to members of the Company to a luau at Kawaiahao at noon to-day.

On motion it was voted that the reports of the Special Committee be accepted and the Committee discharged.

On motion it was voted that the two reports be taken from the table and discussed. After brief discussion it was voted that further discussion of the subject be deferred to 1:30 P.M.

Mr. Baldwin moved that the Trustees be instructed to confer with the Board of Immigration and Messrs. H. Hackfeld & Co., in regard to commencing again, at the earliest opportunity, the immigration of Portuguese.

Mr. R. Halstead spoke of certain objectionable features of the contracts at present proposed. A general discussion followed.

Mr. Baldwin's motion was adopted.

RECESS.

On motion it was voted that the annual membership fees

adopted at the last annual meeting, be adopted and remain in force for the coming year.

It was moved and seconded that the majority report of the Committee be adopted. A discussion then followed. And upon a vote being taken the majority report was adopted by a vote of 13 to 4.

On motion the minority report was laid upon the table.

The matter of the form of the proposed new contract with Portuguese was taken up and discussed.

The President announced the following Committees for the coming year :

LABOR :—G. N. Wilcox, W. Blaisdell, W. H. Purvis.
 CULTIVATION :—E. M. Walsh, W. H. Rickard, J. K. Smith.
 MACHINERY :—J. N. S. Williams, A. Dreier, P. C. Jones.
 LEGISLATION :—W. R. Castle, H. F. Glade, T. R. Walker.
 RECIPROCITY :—C. R. Bishop, F. A. Schaefer, C. M. Cooke.
 TRANSPORTATION :—R. A. Macfie, Jr., J. Marsden, W. Blaisdell.
 MANUFACTURE :—H. P. Baldwin, O. Isenberg, A. S. Wilcox.
 LIVE STOCK :—R. D. Wallbridge, T. S. Kay, J. N. Wright.
 FORESTRY :—C. Koelling, J. H. Paty, V. Knudsen.
 FERTILIZERS :—H. Morrison, W. W. Goodale, J. K. Smith.
 VARIETIES OF CANE :—W. Y. Horner, L. A. Thurston, J. M. Horner.

FRUIT CULTURE :—E. C. Bond, T. R. Walker, W. O. Smith.
 COFFEE AND TEA :—J. M. Horner, P. C. Jones, W. W. Hall.
 TOBACCO :—F. M. Swanzy, H. F. Glade, G. N. Wilcox.
 RAME :—H. Deacon, J. B. Atherton, W. R. Castle.

The matter of how to prevent Japanese from running away was again discussed, and many views were elicited and suggestions made, and the matter was commended to the careful attention of the Trustees.

At 4 P.M. the Company adjourned *sine die*.

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 REPORT OF SECRETARY.

OCTOBER 28, 1889.

Since the last annual meeting, the Trustees of the Planters' Company have met from time to time to consider matters relating to the interests of the company. The business to which they have given attention has related chiefly to questions of labor supply and immigration.

Shortly after the adjournment of the annual meeting, letters were received from Mr. F. M. Ormsby upon the subject of obtaining negro labor from the Southern States. The proposals of Mr. Ormsby were considered by the Trustees, and correspondence was had with him ; but the proposition proved to be too vague and uncertain to be entertained.

The subject of Portuguese immigration has received much

attention. Communications were received from Mr. A. Marques, from Lisbon, in which he made various suggestions in regard to procuring Portuguese laborers, and propositions that he be engaged to promote the immigration. Correspondence was carried on with him, and conference held with the President of the Board of Immigration, and finally, in view of the fact that Mr. Ed. Mueller had been appointed agent of the Board of Immigration in the matter of Portuguese immigration, and Mr. Mueller was then in Europe endeavoring to further the enterprise, Mr. Marques was referred to him.

The Trustees have been alive to the desirability of continuing Portuguese immigration, but the difficulties in the way have thus far prevented obtaining more of these desirable laborers. There is a demand for these people, and it is hoped that the immigration may be renewed.

The Japanese who have been brought here during the year under the auspices of the Board of Immigration have partially met the demand for labor, but it is evident that more laborers will have to be obtained during the coming year. Wages are high, and new enterprises will be a drain upon the present limited supply.

The question of labor supply is a national one; the business of the country, and its wealth and prosperity depend upon the agricultural interests, and without field laborers, agriculture cannot be carried on.

The problem of how to maintain an adequate supply of laborers at rates of wages which will permit agricultural enterprises to be carried on profitably, and at the same time having due regard for the population and social interests of the country, is one surrounded with great difficulties. No one class of people is alone interested in this question, but it is of importance to all.

It is to these questions the Trustees have chiefly directed attention during the year. Respectfully submitted,

W. O. SMITH,

Secretary Planters' L. and S. Company.

TREASURER'S REPORT.

The Planters' Labor and Supply Company, in account with
P. C. Jones, Treasurer:

Oct., 1888.	Balance cash on hand.....	\$	33	40
Oct. 28, 1889.	Thirty-three plantation subscribers at \$25.....	\$	825	00
	Thirty-nine individual subscribers at \$5.....		195	00
	Balance due by Editor of <i>Planters' Monthly</i> , for 1887.....		21	75
			<u>1,041</u>	<u>75</u>
				\$1,075 15

PER CONTRA—CR.

June 30.	Paid C. Brewer & Co. advances by them on account <i>Planters' Monthly</i>	\$ 213 30
February 27.	Paid H. M. Whitney, seven months as Editor of <i>Planters' Monthly</i> , to Dec., 1888	350 00
	Paid P. A. Dias, trip to Hilo	93 50
July 6.	" H. M. Whitney, six months as Editor of <i>Planters' Monthly</i> to June 30, 1889.....	300 00
		\$ 956 80
	Balance on hand.....	118 35
		\$1,075 15

LIABILITIES.

<i>Planters' Monthly</i> , July, August and September.....	\$ 150 00
<i>Bulletin</i> bill.....	3 75
<i>Gazette</i> bill.....	13 00
	\$ 166 75
Cash on hand.....	118 35
	\$ 48 40
Deficit	\$ 48 40

Unpaid subscriptions.....\$ 140 00

E. and O. E.

P. C. JONES, Treasurer.

Honolulu, October 28, 1889.

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REPORT OF COMMITTEE ON CANE CULTIVATION.

Mr. President and Members of the Planters' Labor and Supply Association.

GENTLEMEN:—The subject entrusted to this committee is so commonplace in its nature, and one which everybody is supposed to so thoroughly understand, that it will be a hard task to bring forth new and interesting facts which would be of general interest, and this is still more apparent when we consider that, with regard to soil, moisture and rainfall, the different plantations differ very widely, and consequently all other operations necessary in the cultivation of sugarcane differ also. It is difficult, therefore, to say which method is good for the one, and which for the other, and for these reasons I give you my experience on Princeville Plantation.

PLOWING.

The preparation of the soil to be planted is of great importance, and should receive as much attention as all other operations connected with cultivation; the more thoroughly this is done, the more successful we may expect to be. There is, to my mind, no question but that the steam-plow is very much superior to our single or gang plow, and should be recommended when the lay of the land admits of its use. I do not practice fallow-plowing, for the reason that the Princeville plantation is rather a wet place, and weeds and grass would grow most luxuriantly on fallowed land, and would tend to

sour the land, which would be detrimental to the healthy growth of the canes. One of the first points of successful cane cultivation is to keep the lands sweet—that is to say, to keep the lands well aerated by plowing and harrowing several times shortly before planting. The lands I used for planting the last four years I did not fallow at all, but broke up the stools as soon as the rattoons were harvested, thereby preventing the growth of any grass or weeds; and, after good cross-plowing, found the land in better condition for planting than the fallow-plowed lands in former years ever were. With regard to deep or shallow plowing, one will have to be guided by the depth of arable soil and the nature of the soil. Deep soil should be plowed deep; but shallow soil, with poor subsoil, should, in my experience, receive such plowing as the depth of soil will admit of. Poor subsoil is often detrimental to the cane if planted in very deep furrows. Most of poor subsoils contain an acid which acts as a corrosive on the roots of plants, and when planting such lands it is to be remembered to fill the bottom of the furrow to a sufficient depth with top-soil—say about six inches. Our valley lands have to be well drained before plowing, and the drains well looked after during the whole season—even the surplus rain-water has to be led out of the cane fields by channels dug in the shallow places, and led into the main ditch. If this is not done, the water stagnates and the canes turn yellow, and look sickly; and, if once neglected, it will take months before such canes look healthy again, and grow as they should.

TIME OF PLANTING.

In this locality the up-lands should be planted early; this insures success. The best time is from June to middle of August. If planted later, they will be very much shorter in stalk, and will not stool as well as the earlier planted canes, and consequently yield less sugar in proportion. The valley or low lands should be planted from September to the end of October. If planted much earlier—say in June or July—by nature of their rank growth, they are apt to rot before they can be harvested.

SEED CANE.

Seed cane should be selected with the greatest care. The best seed, to my knowledge, is either plant-cane from ten to eleven, or rattoons from eight to nine months old. Stalks from $1\frac{1}{4}$ to 2 inches diameter, and joints 1, $1\frac{1}{2}$ to 2 inches long. Such cane has generally well-developed eyes, and, if otherwise healthy, have all the qualities good cane should have. Tops are superior to any other seed; the branches or lalas, if well-developed, are very good for seed, they having proved superior to any other seed in this locality. No replanting was necessary

where lalas had been used. Long-jointed cane should be rejected on more than one account. Firstly, they have a limited number of eyes in a given length; secondly, if nearly ripe, they sow easily; thirdly, the eyes are seldom well enough developed to be good for planting, and this is a feature in cane seed that should not be lost sight of. I am not one of those that believe in the theory that long-jointed seed produces long-jointed stalks. Seed cane should be cut in twelve or fourteen inch lengths. The cutting of seed-cane should receive proper attention, and the laborer be instructed not to mash the cane in cutting, but cut clean, which can best be done by placing a four or six inch piece of wood on the ground, the stalk held across it at right angles. It should be cut with a sharp caneknife in the middle of the joint, care being taken not to mash or cut the eye on the end of the joint. Cane held in one hand while cutting with the other generally produces a long cut and spoils many an eye, and is apt to sour sooner than seed cane cut at right angles. I prefer to prepare the seed cane in the field it grows in, and transport only sound seed into the field to be planted, leaving rotten and borer-infested canes to be burnt as soon as possible. Lahaina cane is preferred in this locality. The best results have been obtained from this kind of cane.

PLANTING.

Have the land well furrowed in advance of the planting gang, then, if possible, lay out a road for the seed cane in a convenient place so as to be able to bring the seed as near as possible to the place in which it is to be planted, for distribution. I use rice baskets, they being more convenient than bags or boards, such as I have seen used in other places. The eyes of the cane will not suffer as much if packed in baskets as if packed in bags. A great many eyes break or get hurt by emptying. If irrigation is needed, have the planting furrow laid on a dead level, and give the water-furrow sufficient head to carry the water through the planted row. I lay from fifty to sixty feet between water-furrows, and irrigate if necessary after planting.

If dry and hard canes are used for planting, they should be soaked in water for twenty-four hours, as that will in a great measure restore their sprouting capabilities. Place the seed with the eyes towards the light—that is to say, do not let the eyes point downwards or into the soil, which is always the case if the top-end of the seed is placed lowest into the soil. The butt-end of the seed should be placed two inches deeper into the soil than the top-end. Cover with one or two inches of earth according to moisture, and see that the finest part of the soil come nearest to the seed. This will insure early sprouting. If very wet, cover lightly, otherwise the seed is likely to rot.

Much might be said as to the distance from furrow to furrow. My experience has led me to say that the richer the soil, the wider the furrow; and the poorer, the closer together the furrows should be. I lay at an average $4\frac{1}{2}$ feet between furrows. If manure is used, it should be put into the ground before planting. I have planted in double rows this season and have manured all I have planted, using about 1000 lbs. per acre. I used the Mexican phosphates, which I applied in the following manner: After cross-plowing, I place the bags about 70 feet apart, in which manner ten 100-lb. bags will cover an acre. Strew the manure broadcast; afterwards, harrow and furrow out. In this manner the manure is thoroughly incorporated into the soil as it should be. If the manure is placed in the planting-furrow either before or after planting, the distribution is liable to be very irregular. Having it too heavy in spots is apt to harm instead of benefiting the cane. If thoroughly incorporated into the soil, it will support the growth more uniformly throughout the season, and should give better results.

Cultivation begins as soon as weeds make their appearance, whether the cane has sprouted or not. The weeds should be removed at once, taking care not to hoe in the row. After the cane is well sprouted, I use a small pointed harrow between the rows. This will keep the land from packing, and also destroy the young weeds. The frequent stirring of the soil during the first six months of its growth is apt to be very beneficial to the young cane. Hoeing, of course, goes on between the harrowings as often as required, and an inch or two of earth is filled into the row at each hoeing. This filling in is very necessary, as it promotes the stooling out very much, and gives good support to the cane to prevent blowing down in stormy weather. Never allow the weeds to grow to any size, or run to seed if you wish to grow a good, heavy crop of cane. Eight months after planting the cane should be clear of weeds, as hoeing later on becomes injurious to the cane. The reason for this is that sugarcane, in the first eight months of its growth, is storing a large quantity of starchy matter or plant food in its roots to be used at the proper time in forming the stalk, and any roots cut off by cultivating at this period of its growth means so much less nutriment to the stalk.

A few words with regard to irrigation will not be out of place here, although I do not claim to be an authority on this subject, but deem it important enough, to give you my experience in this matter. I have but semi-irrigation here on account of frequent rains and limited amount of water for that purpose. I find that by irrigating once all round in a fortnight our canes are kept in a thrifty condition; but, notwithstanding the frequent rain showers, I would not like to risk planting cane without being able to irrigate when needed.

Stripping or trashing is done, as cane can be stripped twelve inches without removing growing leaves. This is very necessary on account of the borer and other insects which infest the cane in this locality. When the stools of the cane are clean, the ravages of the borer are not so injurious as in unclean stools. The second trashing is done whenever the cane can be stripped three feet high without removing any green leaves except those quite loose on the stalk. Trashing too high is very injurious to cane; the growing leaves are the agents to expel the exhaust water and other mineral substances which are taken into the stalk, and which are partly expelled through the leaves. In October and November, I trash the cane as high as it will admit.

Rattoons raised in this locality grow best from canes cut in December, January and February. Later on the time for growth is too short to make it profitable. I invariably burn the field as soon as possible, for the reason that it will admit of better cultivation and exterminate a number of borers and other pests, the burnt leaves also acting as a manure; if left unburnt, they might become an agent to sour the soil. After the cane has well sprouted—say 12 inches high—I plow between the rows—say within 6 inches of the stools; harrow several times and hill the cane with a small harrow-plow.

Harvesting the canes generally begins from November to middle of December. Our canes tassel about the first or second week in November, and at this period the stalks cease growing in length; but the upper five or six joints have to fill out and ripen afterwards. Canes manufactured into sugar at this period generally polarize very low, as the upper joints contain a large amount of glucose, which tend to lower the polarization.

In conclusion to this report, I would beg of you—the President and gentlemen present—to appoint another member to fill my place on the committee, as I, for myself, would like to hear of other methods of cultivation, as followed by my fellow planters, and which, I feel sure, will be beneficial to the planting interest on the Islands, as well as to myself personally.

C. KOELLING, Chairman.

Princeville Plantation, Hanalei, Kauai, Oct. 25, 1889.

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REPORT OF THE COMMITTEE ON FRUIT CULTURE.

To the President of the Planters' Labor and Supply Company:

SIR:—The subject of fruit culture has, thus far, occupied very slightly the attention of the farmers and capitalists upon these Islands; it is an industry that is still in its infancy. While the cultivation of sugar and rice is being extended from year to

year, and the income from these sources can be counted by millions, the greatest amount received for fruit exported during any one year has not exceeded eighty thousand dollars.

The *Banana* is the only fruit raised here that is exported in sufficient quantities to attract any attention, or of which any statistics seem to be kept at the Custom House.

In 1885	60,046 bunches were exported worth.....	\$58,809	50
" 1886	45,862 " " " "	43,824	25
" 1887	58,938 " " " "	54,708	25
" 1888	71,335 " " " "	69,208	75
" 1889	(nine months) 76,129 bchs. ex. "	80,922	00

From the above table we see that the quantity fluctuates from year to year, but during the last year has increased very much. The cultivation and export of bananas from Honolulu should be doubled during the next year. The one thing that renders it almost impossible to raise fruit of any kind for the purpose of export, on the other islands, is the want of *direct steam communication* with the outside world, except from Honolulu.

It seems to us as we consider this very important subject that, for many years to come at least, Oahu is to be the island of our group on which our fruit for export will have to be raised.

The greater proportion of the bananas now shipped to California from here are now raised in the valleys adjacent to Honolulu, ranging from Palolo on the east, extending as far as Ewa on the west. One great drawback to this industry has always been the lack of cheap and reliable means of transportation to Honolulu.

This difficulty will, in a great measure be obviated, when the Oahu Railroad will be running trains regularly as far as Ewa, and eventually around to Koolau. Hundreds of acres of land on the road to Ewa, and in the Waialua and Koolau districts, now lying idle, might, with the aid of artesian wells and the accommodation of the railroad, be brought into cultivation, and be made to yield not tens, but hundreds of thousands of bunches of bananas annually.

Our banana industry is only in its infancy, and we predict a wonderful growth during the next ten years.

So much for the banana; now let us consider some of the other fruits that grow well on the Islands, but are produced only in small quantities, not sufficient even for home consumption.

The *Lime* is a fruit that will grow and produce abundantly, not only in all our valleys, but on the plains wherever water can be found, and even in our gardens in Honolulu it flourishes. It is a beautiful tree in appearance, although not large, and it bears an abundance of fruit, and it is not at all partic-

ular about seasons, but seems always to have fruit upon its branches. It is a fact that limes are often very scarce in Honolulu and consequently high. Thousands of trees might be planted in our valleys, and in a few years limes would be abundant and cheap in our market, and many thousands might be exported to San Francisco, where they would find a ready market and help to add to our national resources. We are glad to mention the fact that one of our citizens has planted several acres with lime trees that will soon be bearing and that thus a beginning has been made in an industry that we feel sure will develop greatly in the next few years.

The *Orange* is a fruit that should be so common and cheap here that even the poorest can have them in abundance. During many months in the year it is hard to find an orange in our streets, not because they are out of season, but because so few make a business of cultivating them and bringing them to market. As the facilities of bringing produce to Honolulu are multiplied, in the shape of good wagon roads into our valleys and the railroad communication with the other districts on this Island, we hope to see the price of oranges come down to \$1 per hundred. Most delicious oranges can be grown in most of the valleys on this Island.

It was formerly supposed that Kona, on Hawaii, was the only district in which good oranges could be grown; but where do you find more luscious oranges than the Waialua russets, or the golden fruit from any of the valleys of our central range? Whether it would pay to export oranges to San Francisco in view of the great quantities grown in Southern California, is a question, but certainly with the facilities of steamers and the railroad we should have all the oranges we need for home consumption. We are of the opinion that it would even pay to send oranges to San Francisco before their season begins in California. This same can be said, of Hawaiian *Grapes*, which ripen here some time before they do over there. This is a fruit that is beginning to show itself in our market, in sufficient quantities at least, to prove that it can be raised to perfection here. Many tons of grapes would find a quick market in San Francisco before their season begins, and it is always the first fruits that bring the best prices. But the cultivation of grapes should be encouraged for our home market. As long as grapes are held at twenty-five cents or twenty cents per pound few can afford to buy them. Grapes should sell in Honolulu for five cents, certainly not over ten cents per pound in the season; and that price would pay well when the vines were well grown, and the care of cultivation and watering required little time.

When water is brought on to the hill slopes west of Honolulu, as we hope to see it in the near future, they should be dotted

all over with vineyards, and many tons of delicious grapes be raised for home consumption and for export.

We have time to mention only the names of some of our choice fruits, that might be raised in large quantities for home use and for export.

The *Pineapple*, the *Avocado* or *Aligator Pear*, the *Cheremoyer* and *Vanilla Bean*, can all be raised here in large quantities, and could be profitably exported to San Francisco.

The cultivation of *Pineapples* is being carried on in a systematic manner by Mr. Kidwell, in Manoa valley, and with a good degree of success. He has succeeded in introducing a new variety, much better in every respect than the native variety.

The cultivation of *Pineapples* can be extended indefinitely, and as the fruit can be canned and shipped all over the world, and in a natural state can be sent over to San Francisco in large quantities, there is no reason why this industry should not be very much extended in future.

What this country needs in order to develop more fully our fruit resources is a number of small farmers, who can put in a variety of crops, and plant a number of *fruit trees* of various kinds, the fruit of which would be ripening at different seasons and would not require to be harvested all at the same time.

Another product of our Islands that might come under the head of fruit is *Coffee*. We are sorry to have to say that this has been a much neglected industry. None of our farmers or capitalists seem to be inclined to invest any great amount of money in the cultivation of coffee as long as the profits from sugar and rice are so alluring. There is no reason why millions of pounds of the best quality of coffee should not be raised here and exported abroad, instead of the few thousand pounds that we now produce in a hap-hazard way, and without the aid of improved machinery.

The demand for coffee throughout the world is constantly increasing, and the supply does not keep up with the consumption. Coffee will grow well on many of our lands where cane cannot be grown to advantage, and it seems to us that next to sugar *this* should be the *great industry* and *crop* of these Islands.

It is encouraging to know that coffee culture is increasing in the district of Puna, Hawaii, and is attended with a good degree of success, and we think that the opening of new government roads, by our present enterprising administration, in remote districts, will do much to help on the coffee industry. It seems to us a great mistake that the last Legislature did not pass the Act to help the establishment of a coffee plantation on a large scale, with all the modern improvements and machinery necessary for curing the berry and economizing labor. This would have put the industry on a solid basis, and doubtless, in a few years many, having funds to invest, and seeing

the success of the enterprise would have been willing to start similar plantations in other places.

The *Cacao*, a plant from which the chocolate is made, is another that thrives well on these Islands, but which has never been grown in any quantity for use here or for export. If farmers on the different islands would plant a few acres of cacao, the industry would soon develop so that it would pay to establish a chocolate manufactory in which these seeds could be prepared in the various forms in which it is used throughout the world.

The *Cocoanut* is becoming an article of commerce used more and more throughout the civilized world, and could be shipped from here by the hundred tons, if its cultivation were only gone into systematically.

At present most of the cocoanut trees on the Islands are getting old and few new ones are being planted. There are hundreds of acres of land in the Puna, Kau and Kona districts on Hawaii, now uncultivated, on which tens of thousands of cocoanut trees might be planted, and after ten years, when they commence to bear fruit, there would be a constant income with little expense but to gather and get the nuts to market.

The time fails us to *mention* even the many fruit bearing plants which, though not indigenous to this country, would thrive and produce as abundantly here as in their native lands.

We consider this subject of *fruit culture* a very important one for these Islands, and we hope to live to see the day when, with the aid of railroads and a more frequent steam communication with other lands, this will be a great fruit producing country, like some of the islands of the Mediterranean.

Respectfully submitted, W. M. W. HALL,
Chairman of Committee on Fruit Culture.

REPORT OF COMMITTEE ON LABOR.

To the President and Shareholders of the Planters' Labor and Supply Company:

GENTLEMEN:—Your Committee on Labor feels that this ever most important subject demands much more than ordinary attention at this time.

It is patent to every intelligent being in this country that the basis of the Kingdom's mercantile and financial prosperity rests, fundamentally, on the sugar industry, which depends for its success more on the cost and quality of the available labor supply than on any other factor.

A very large new plantation is starting operations on Kauai, and other new plantations are contemplated in different parts of the kingdom. The exceptionally high sugar prices which prevailed during a great part of the current year, have natur-

ally resulted in considerable extensions to existing plantations being made, besides liberal outlays on such improvements as roads, railways and irrigation works, which all necessitate the employment of many laborers. Besides, there has been a large demand for laborers on numerous public works, the Oahu Railway and other enterprises. The increased demand from these causes, coupled with total exclusion of Chinese, has been such that even the introduction of some 5,000 Japanese has failed to supply the demand for plantation labor.

With a prospective greatly increased demand for labor it is evident that unless large additional supplies are forthcoming from abroad, planters will soon find themselves in a serious dilemma.

With an insufficient labor supply, higher rates of wages must prevail and expenses will be enormously increased. High wages will tend to aggravate the difficulty and increase the scarcity, for it is well known that with high wages hands are more independent, do inferior work and less of it, and are little inclined for constant employment.

Statistics show that the departures of Chinese from this kingdom during the past nine months have been 523 in excess of the arrivals.

The anti-Chinese movement calls for attention at the hands of planters. Though it arises from a probably small, and it might be thought uninfluential section of the Honolulu citizens, this agitation has been conducted with such energy and success that it has elicited an expression of sympathy from the Ministers who, in an elaborate and evidently carefully prepared statement, express themselves favorable to special and stringent legislation against Chinese and say they consider the subject "an issue second to none in importance to the future of the kingdom."

It devolves on the Planters' Company to give the whole labor question earnest and careful consideration. We would suggest that it should be thoroughly and deliberately discussed, and that before the meetings are adjourned a line of action should be determined on, and such measures adopted as may be deemed best calculated to secure a sufficient and reliable supply of suitable and competent laborers to meet prospective requirements.

It is generally felt that in the best interests of plantations, besides the welfare of the kingdom, the problem of securing a permanent population, as well as immediate supplies of labor, should not be lost sight of.

It has been found that young people brought up and educated in this country prove the most useful and intelligent plantation hands, and it cannot be too deeply regretted that the number of families growing up on and around our plantations is so

small. As long, however, as the disparity between the sexes in the population of this country remains such as it is at present, there can be little hope of change in this respect. We are of opinion that, without curtailing immediate supplies of single men that may be a present necessity, it behooves the Government to take some steps to remedy this evil.

We believe that some relief might be obtained by importing negro women from the West Indies and Jamaica in particular, where there is a superabundance of females of excellent physique who speak English and are accustomed to all kinds of hard work.

We think that the Government may rightly be asked to consider this scheme and try it experimentally.

Your Committee has taken pains to ascertain the condition of the labor market in different parts of the islands and the views of planters on the question at issue. A circular was forwarded to every plantation owner or manager and the number and nature of the replies received give conclusive evidence of the great importance attached to this subject by the planting fraternity. It appears in fact, to be sincerely felt that this is *the* most important question to be dealt with at the meetings. From the letters received we ascertain the fact that labor generally and Chinese labor in particular, is scarce and that wages which range from \$18 to \$26 per month, are generally higher than they were a year ago. This is particularly the case where large numbers are employed. In some places as much as four dollars per month more than last year is being paid to Chinese.

All planters appear to regret the present anti-Chinese agitation, which they deem uncalled for, and deprecate the attitude assumed by the Honolulu press, which has given the movement so much encouragement.

It seems to be generally felt by planters that a considerable number of Chinese must be admitted into the country in addition to Japanese and laborers of other nationalities. A number of planters express themselves ready to give employment to respectable single women of the requisite physique, if they can be obtained at \$12 per month. Japanese women are generally found too small, slow and weak for work in cane fields, and are not highly appreciated on any plantation.

Japanese men, with some exceptions, are giving satisfaction, but on many places are considered inferior to Chinese, and apprehension is felt that it would be unwise to allow ourselves to become too dependent on their services. Cases of desertion by Japanese contract laborers are frequent and on the increase. It is desirable that planters should take united action in this matter, and if possible nip it in the bud. The Board of Immigration is disposed, with the co-operation of the Japanese authorities to render all possible aid in this matter, and it is pos-

sible that if planters will come to some understanding and join in refusing to employ any Japanese without a certificate of discharge of contract, desertions would be reduced to a minimum.

Many planters would like to obtain more Portuguese and it is to be hoped that the efforts of the Government to secure further supplies may be successful.

The New Hebrides people, brought here some years ago, proved so generally satisfactory, that if arrangements could be made to bring them here at reasonable cost, there is little doubt they would meet with favor at the hands of the planters. Possibly the Kaimiloa, though so ornamental in the harbor, could be spared to make a recruiting voyage.

We beg to append statistics of arrivals and departures of Chinese and Japanese from 1879 to the present time, kindly furnished by the Hon. A. S. Cleghorn, Collector-General.

Commending this subject to your calm and deliberate discussion and consideration, respectfully submitted on behalf of the Committee by your obedient servant,

R. A. MACFIE, JR.,
Chairman of Committee on Labor.

REPORT OF COMMITTEE ON TOBACCO.

To the President of the Planters' Labor and Supply Company:

DEAR SIR:—The Committee on Tobacco have not succeeded in obtaining much information in regard to tobacco culture in these Islands, nor facts which will afford instruction upon the subject. The Committee, therefore, in preparing their report to you, to be submitted to the planters at their annual meeting, feel obliged to confine themselves rather to general remarks on the subject, than to go into a more thorough discussion of the same on its merits.

It is well known that tobacco grows finely in many parts of the islands, and that the leaf grown here is preferred by the natives to the imported article. There is no question that the conditions of soil and climate are favorable to the growth of tobacco, but it yet remains to be demonstrated whether an article can be produced suitable for export.

While experiments in growing tobacco for export have been made in former years, we can hear of no case in which the trials were made by men who had had experience in growing and curing tobacco in other countries. Intelligent experiments by experienced men will alone settle the question and it will require varieties of tobacco to be tried and especially a method of *curing* the Hawaiian product to be found, in order to produce a marketable article, in which case tobacco could be produced in large quantities and an extensive export trade thereof

be established. If this result should eventually be obtained, it stands to reason that the cultivation of the tobacco plant in these Islands would afford occupation for a vast number of small farmers, besides offering opportunity to capitalists to engage in it on a larger scale.

With a view of increasing as far as possible, the products of these Islands, it is imperative that attention be given to products other than sugar and rice and, next to coffee which has a future before it, tobacco seems to be the product which deserves special attention on account of its immense consumption and the certainty of finding a profitable market; provided of course, that a proper method of curing it has successfully overcome the difficulties now in the way of its finding a profitable market abroad.

In planning for the future, your Committee are of the opinion that we cannot afford to neglect investigating and experimenting with such products as seem to adapt themselves to this country and offer a profitable sale in foreign markets.

Respectfully submitted,

F. A. SCHAEFER,
W. O. SMITH.

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RESOLUTION REPORTED BY THE SELECT COMMITTEE TO WHOM WAS REFERRED THE REPORT ON COFFEE AND TOBACCO.

WHEREAS, the Planters' Labor and Supply Company recognize the importance of diversity in the industries of the country, particularly in the introduction and encouragement of forms of industry suitable for persons of small means, and

WHEREAS, in some respects, particularly with reference to the treatment of coffee and tobacco, the growth of which have been tried here, but which industries are still in an experimental condition; this Company is of the opinion that the Government may properly assist in the expense of experiments directed toward the establishment of them in this country, inasmuch as private parties are not able or likely to undertake these or other industries while in experimental stages, nor is it proper that one should bear the burden of what may benefit the many, therefore

Resolved, that the Hawaiian Government be respectfully requested by the Planters' Labor and Supply Company to bring before the next Session of the Legislature, such plans as it may deem expedient to assist in establishing coffee and tobacco industries in this Kingdom.

WM. R. CASTLE,
CHAS. R. BISHOP,
F. A. SCHAEFER.

Dated Honolulu, October 29, 1889.

THE ADVANTAGES OF DIFFUSION AS APPLIED TO SUGARCANE.

Ever since the signing of the Reciprocity Treaty between the United States and the Hawaiian Kingdom, the yearly crop of sugar has steadily increased until at present it foots up 125,000 tons, which means a revenue to the united sugar estates of over \$12,000,000, and the object of the planter has been and will be to increase his crop by every possible means, by taking in more land, by improved cultivation, by a careful selection of seed cane and improved machinery and methods of manufacture ; those who have lived here long enough can remember the water power three-roller mill with its attendant open train, the trash houses and the drying yard, which are now things of the past. It is within the memory of members, the placing of the first five-roller mills introduced into this country at Spreckelsville, Maui, followed three or four years later by the general introduction of the supplemental two-roller mill, until at this present time there are not more than two or three sugar-houses working without them.

Diffusion, described by "Sucrose" in the September *PLANTERS' MONTHLY*, as "the only rational way of extracting sucrose from sugarcane," has come along in its turn and has been at work for two seasons in this country, and its advantages have been so clearly demonstrated to those immediately connected with the working of it, and its financial, as well as mechanical success so indubitably proved, that it would seem as though only ignorance of its capabilities prevents its immediate and general introduction. When one reflects that the present crop of 125,000 tons may be increased by this means to over 145,000 tons from the same quantity of cane, and that with the available lands still in Hawaii unused, a maximum crop of over 200,000 tons may be confidently looked forward to ; it is surprising that, with the amount of money there must be in this country, more of it is not invested here. The cardinal advantages of diffusion as compared with any other process of sugar extraction known, are as follows :

First. The most thorough extraction possible, and that of the crystallizable portion of the saccharine liquid only, it having been shown in the report from Kealia that a half of the glucose or uncrystallizable sugar is left in the exhausted chips ; and this may be verified easily by an examination of the water expressed from the chips when passing through the mills on the way to the boilers, the determination of glucose in the waste molasses acting as a check upon the estimation of glucose in the exhausted chips.

It is very important to have a clean cut chip, not too thick nor yet too thin ; all cutting machines that reduce the cane to

small pieces, with the object of rapid diffusion are mistakes; the ideal slice being taken from the stick of cane at an angle of thirty-five to forty-five degrees, diagonally across, parallel in thickness and an ellipse in form, thus exposing the greatest surface to the action of the water and at the same time rupturing the least number of juice cells. Chips of this form will not pack too tightly in the battery-cells and will ensure the best possible circulation of the liquid around and through them; and will also be in better shape for fuel after passing through the mills.

Second. The most thorough clarification and filtration possible, by means of the introduction of milk of lime, during different stages of the extraction, the natural acidity of the cane is neutralized, as it shows itself in the juice, and the chips themselves forming a most perfect filtering medium, the juice is drawn off as clear and sparkling as any that results from filtering in the usual way, and the juice is absolutely clean. That is to say, it contains very few, if any impurities that can be gotten rid of by subsequent treatment. Now, it is possible to carry on these operations in a vacuum if required, in any case it is performed in the absence of air. Air seems to assist inversion, the exposure of large surfaces of thin juice in open clarifiers and subsiders, the dividing up of juice into thin streams, as issuing from filter-presses, and the agitation consequent in the transfer of thin juices from clarifiers to precipitating tanks, are all promotive of that dreaded enemy, inversion, which may be aptly termed a hydration of sugar, or the adding of one molecule of water to a small particle of dust, particularly cane dust, floating about in the mill-house and settling on surfaces of juice standing in tanks, immediately becomes centers of fermentation, as microscopic examination shows. Thick juice or syrup, standing at thirty degrees Beaume, does not seem to be affected anything like the extent that thin juice is in this respect, showing that the sooner the juice can be concentrated after extraction the better, and this is the general method of working sugar juice in this country. It has been stated that the air contained in the cells of a diffusion battery has a bad effect upon the juice therein, but anyone who has seen a battery at work will know that as the water is introduced at the bottom of the cell it drives out the air ahead of it; the fixed air of vegetation or carbonic acid gas accumulates as the process of extraction proceeds, but the battery is supplied with automatic air escape valves, which relieve all accumulation of air, gas or steam, that may form in the head of the cell.

Referring to the report from Magnolia Plantation, forwarded to the writer by the courtesy of the Secretary of Agriculture, Mr. J. M. Rusk, it distinctly states that they experienced *no*

losses from inversion in the cells when the work was regular; no one would attempt to run a diffusion plant on business principles and not run regularly; where experiments are being carried out with a view of ascertaining facts, irregularity is to be expected, and for opponents of the process to make use of the inevitable results of irregular and experimental work as an argument against its introduction, is hardly legitimate warfare.

Third. The almost complete immunity from breakage; this will be appreciated by every mill manager in this country who has endeavored to do first class crushing on dry, hard ratoons, and who has broken his rollers in doing so. The diffusion process does away with all that; it is true that the mills are still used for squeezing chips for fuel, but the strain on the machinery is not one-half of what it is when crushing cane; there is absolutely nothing about the battery to break, provided that it is properly designed and constructed; the slicing machines are always in duplicate, and the elevators and so forth should give no more trouble than those attached to crushing apparatus.

There is not nearly the amount of power required to run a diffusion plant there is in a crushing plant of equal capacity, consequently the machinery does not require to be so heavy, and where water is available the whole of the power required can be derived from it, leaving only the duty of evaporation for exhausted chips to perform.

Fourth. Reduction in the expense of manufacture. A properly designed diffusion plant can be run with no more men than are required for a crushing plant of equal capacity, when the number of men on the cane carrier be included, and as the quantity of sugar per ton of cane is largely increased, it follows that the expense of manufacture per ton of cane, or sugar, is reduced in like proportions. It may be argued that night work compels the using of a double gang of men, but if the diffusion apparatus is designed to work up the same quantity of cane in twenty-four hours that the mill it replaces worked up in ten hours, it is easy to see that the number of men used per ton of sugar per hour need not exceed, unless in exceptional cases, the same number of men per ton per hour on the mill.

The adapting of diffusion machinery to existing works will nearly always be with reference to the supply of cane, thus an existing works capable of turning out ten tons of sugar per diem, (say ten hours) would have diffusion apparatus sufficient to work up, say 100 tons of cane in twenty-four hours, the evaporative capacity of the works, as generally designed, being ample for this duty, when the increased dilution of the juice is taken into consideration. An advantage of the twenty-four hours or continuous system, is that the mill house is cooled

down once a week, instead of every night, which must result in better and less expensive production; this is proved to be the case in beet sugar-houses in Germany, and indeed was proved at Kealia with the old machinery before the diffusion process was applied.

Summed up, diffusion may be credited with the following advantages, in which it is far ahead of any other known process: The best extraction, the best clarification and filtration, the greatest immunity from breakage and the cheapest method of manufacture. Added to this are the facts that the sugars resulting are equal to any made by any other original process; the resulting molasses need not be more than that from mill work, and in many cases will be a great deal less, and that the system of analytical checking that diffusion work involves is of the greatest benefit to the mill manager in enabling him to detect losses and leakages otherwise invisible.

Many people affect to sneer at analytical work applied to the manufacture of sugar, and say that it does not add a pound of sugar to their account sales, such should consider that book-keeping never added one dollar to the actual returns, but that any man who went into business without keeping accounts of some kind would be considered lacking in common sense. It is needless to say how important it is for owners or managers of sugar estates to be on the alert for waste, where leakages of the most insidious kind constantly occur; many are alarmed at the outlay it appears to require to do the analytical work necessary on a plantation, but the fact is that any ordinarily intelligent man who is neat and careful in his manipulations can learn to carry out the necessary chemical work in a few days, and such is all that is required in the running of a diffusion plant. Any experimenting or the separating of sugar liquors or molasses into their elements requires a trained chemist, but the mere determining of the amount of fibre, sucrose and glucose in the cane, juice, sugar and molasses, etc., can be performed by men available on every plantation in this country, using the formulæ laid down, it being unnecessary for these men to be able to deduce the rules they work with.

The apparatus required is simple and cheap, and every plantation, no matter whether they are running with crushing or diffusion, should adopt analysis of their work, as without it they are in ignorance of what they are doing.

J. N. S. WILLIAMS.

In order to encourage Napa farmers to raise cotton, an Oakland company will supply them with seed free, and will buy all the cotton raised for three cents a pound delivered at Napa wharf or any railroad station. From 1,200 to 2,000 pounds can be raised to the acre, in the seed.

FERTILIZERS.

Henry F. Glade, Esq., Chairman of Committee on Fertilizers, P. L. and S. Co.

DEAR SIR:—Permit me to hand you a few facts concerning artificial fertilizers that I have gathered from various sources on the subject.

Until within the last twenty-five years, it was thought that *farmyard manure* was the only fertilizing agent there was. It is now maintained this is not so, and that it is possible to compose artificial manures superior to, and at the same time cheaper than farmyard or stable manure.

Farmyard manure, human or animal excrements, decayed vegetable matter, etc., contain the principal elements of plant food and are the *standard* for all fertilizing materials.

The values of all commercial manures are governed by the first cost, transportation, etc., of the kind and quantities of its ingredients, viz: phosphoric acid, potash, nitrogen, etc., as compared with the like quantity in a given amount of farmyard manure required to obtain the desired strength of fertilizing materials.

Those using fertilizers and depending on heavy yields in order to make a profit in cane growing, must seek for that combination of elements which will produce the best financial results, regardless of first cost. It is a rule in farming that to produce maximum results the planter must return to the soil more potash and phosphoric acid in a soluble form, than the crop grown requires, or removes, and an adequate amount (at least one-half) of the ammonia, but this will vary according to circumstances.

Of the fourteen elements of which plants are composed, the manufacturers of fertilizers only deal with one organic and three mineral substances, namely, nitrogen, phosphoric acid, potash and lime.

Chemists give the following sources and Prof. S. W. Johnson the following values of the principal ingredients of commercial fertilizers:

1st. Nitrogen in another form is the ammonia in the harts-horn bottle, or the odor arising from the manure pile, and when obtained in the form of sulphate of ammonia, or nitrate is valued at twenty-four cents a pound. When obtained from Peruvian guano, steamed bones, dried meats, blood and fish, etc., it is valued at twenty cents a pound, and from other sources it may be obtained a little cheaper.

There is no question as to the great value of ammonia and its compounds, considered as a fertilizer.

2d. Phosphoric acid is produced from dissolving in sulphuric acid phosphoric and Peruvian guanos, raw and burnt bones and

mineral phosphates. This latter is obtained in large quantities in Mexico, Canada, South Carolina, Spain and other parts of Europe, also from fish scraps of Norway and east coast of the United States and many other places. This acid is valued, when soluble in water, at twelve and a-half cents a pound, when reverted in Peruvian guano it is valued at about ten cents, and other sources are cheaper. This element is generally considered the most important of all the ingredients.

3d. Potash is simply the caustic property found in the lye of wood ashes, but is obtained mostly from potassic salts, chlorides, sulphates, nitrates that are found in large quantities in Germany and other parts of Europe, also in some parts of America as deposits. The values put on potash as found in the high grades of sulphates are nine cents a pound, as found in kainite about eight cents a pound, as in potassium, chlorides and the like, a little less.

The above estimated values are not fixed, but vary with the state of the market, and are from time to time subject to revision.

All plants that grow near the sea water contain comparatively a large proportion of potash, and planters have already proved the necessity of this ingredient for cane growing.

4th. Calcium oxide is our common lime, and is generally found in conjunction with the phosphates, as in guano, bones, etc. Lime is not generally or particularly called for in this country, as there seems to be plenty already in our soils.

The agricultural value of a fertilizer is measured by the benefits derived from its use, and depends upon its fertilizing effects. The chemists' estimated value is not to be too literally construed, for analysis cannot always decide accurately what is the form of its ingredients. The value of a fertilizer to the cane grower can only be arrived at by comparisons.

When harvested, the amount of woody fibre per ton of cane should be accurately ascertained, the ratio of sucrose in the juices arrived at by polarization or actual analyses, and the difference in tonnage per acre learned. In this way the available sugar can be estimated, and the value of the fertilizer known by the increased sugar in the cane per acre. The above are common and well known facts.

In this country, where we do not follow a rotation of crops, a special sugarcane manure is required. All crops require the same food, but each crop requires its own individual proportions of phosphate of lime, potash, ammonia, etc., so that in rotation of crops, what is left by one crop will greatly assist the next of different requirements.

The very high grades of artificial manures are as powerful and almost as dangerous as gunpowder. Although high grades may be made to produce the best permanent results, and made

to add more than most anything else can, to the prosperity of the planter yet, unless managed with care and prudence, sure and certain impoverishments to the land will result from an unwise application of very high grades or strong fertilizers in the hands of careless and ignorant laborers. All fertilizers must be used with discretion, and more attention given to this subject than is generally given to it in this country. A quick-acting fertilizer must be fine and well dissolved, so as to mix readily with the soil.

As to a home manufactory for all kinds of manures, there is no good reason why it cannot be done here just as well as in California or elsewhere. The cost of commercial fertilizers vary as the various ingredients are more or less costly. We can import the raw material just as well as California or any other country, and so make as complete a manure as is made in any other part of the world.

While Germauny has her potash salts at home she has to import her phosphates and nitrates, so California, to furnish a complete manure, has to import her nitrates and much of her phosphates from South America, Canada, Mexico or South Carolina, as well as much of her potash salts from Germany.

To sum up then, the subject of artificial fertilizers for sugarcane, it is no more than the mixing of the materials containing the three elements of plant food, viz: nitrogen, phosphoric acid and potash in the desired proportions. At present large quantities, analyzing ten per cent phosphoric acid, five to ten per cent potash and two to four per cent ammonia are imported and used on these islands, the requirement varying with the condition of the soil on the different plantations.

The Hawaiian Fertilizing Company is engaged in making fertilizers and promises to be able to furnish good articles in their line, and asks that interested parties call and examine their works.

In conclusion I would suggest that the Committee on Fertilizers obtain reports from different parts of the islands, as to the results from the use of former applications, and make use of them in their report to the Planters' Labor and Supply Company at their coming meeting, or that efforts be made during the coming year to establish experimental stations for the benefit of all planters.

Yours respectfully,

A. F. COOKE.

Honolulu, October 5th, 1889.

The *Visalia Times* says: "The disease affecting the hogs in this section still continues its ravages, and there are few hog-raisers that have not sustained serious loss thereby. George Francis is said to have saved only ninety hogs out of a band of 500, and others report losses equally as heavy.

REPORT OF COMMITTEE ON SEED CANE.

To the President of the Planters' Labor and Supply Company:

SIR:—Your Committee on Varieties of Seed Cane, etc., in presenting their report beg to remark that the subject has received such thorough and lengthy discussions at our meetings and through the press, that we find but little to frame a report upon beyond what has already been seen, said and heard.

Our report will therefore be, (unavoidably) composed in part of *old news*.

The varieties of seed cane, as far as we know, are as follows:

1st. Plant cane from ten to twelve months old. *2d.* Ratoon cane about ten months old (not tasseled). *3d.* Tops of either plant or ratoons (not tasseled). *4th.* Lalas of either plant or ratoons of sufficient growth to make good seed.

The above comprises the varieties of seed cane used by our island planters, and opinions are much divided as to the best of the above named varieties.

Plant cane of the above named age, of medium size, joints of about three inches apart, with well developed eyes or buds, is by many considered the best for seed, and certainly is excellent seed, but in planting care must be taken not to plant too deep, two inches of soil is sufficient covering for such cane. Deeper planting often results in its rotting; but *no* seed will give a prettier, stronger, or more even start and stand of cane, if proper care is exercised in its planting.

First or second ratoons of vigorous growth, of the age above named, are by others considered the best—giving as their reasons—that it is hardier, that its eyes or buds, are usually more developed, that it is less liable to rot than plant cane, from the fact that it usually contains less moisture and more fibre, and that it is surer in starting under trying conditions of weather. We agree that such a kind of ratoons is good seed, generally.

Tops of either plant cane or ratoons are by others claimed to be the best—and give as their reasons—that they are the vigorous and live parts of matured cane, having thoroughly developed eyes or buds, and containing moisture and fibre of sufficient proportions to insure a good start and stand of cane, under ordinary conditions and styles of planting.

Another thing claimed in favor of tops is, that they take away *no part* of the crop for seed, which is quite correct. It is more expensive collecting sufficient tops to plant an acre of land than to cut the same amount of cane from plant or ratoons, yet, the difference on the whole, will be in favor of the former; as we contend: First, that tops are excellent seed; and secondly, that in cutting off sufficient top from canes (being harvested for manufacture) for seed cane, less trouble is met in the boiling house, and better and more sugars are made

from the same cane. Unless tops are used for seed, people usually leave too much of the green top to go to the mill, the properties of which are expressed, mix and interfere with the purer juices.

Lalas, or lateral shoots, are by others considered the natural and best seed, and in many instances they have been found to be good, and many use lalas extensively for seed now and with good results. We are of opinion that lalas from good, vigorous cane are good seed and might be used successfully.

We would here remark that whether it be plant cane, ratoons, tops or lalas, the greatest care should always be taken in selecting the seed, from either and all of the varieties, as care is always rewarded by sure and profitable results. It does not follow that either one of the varieties named will always be the best because it was best this season.

One season we may have ratoons or tops that are better than our young plant cane for seed, and perhaps the following season we find to the contrary, that our ratoons and tops of ripe canes are too dry and our plant is the best; therefore we can only repeat that the best canes we have *for seed*, are the canes we should always use for that purpose, for we have no other means of preserving and perpetuating the quality and standard of our canes.

To develop the eyes or buds, it has, in some instances, been found of advantage to top the canes intended for seed, a week or more ahead of the time of cutting. Again, where water is obtainable, it has been found of advantage to place the seed in water some days ahead of planting.

One thing we may here mention, that in districts where the land rises rapidly from the sea-shore up, say in a distance of two miles, an elevation of 1,500 feet is attained, we have found seed cane to answer well if taken from the upper and planted on the lower lands, and *vice versa*. In this manner a change of soil and atmosphere is realized.

We further beg to remark that fully as much, or more, depends upon the proper preparation of the soil, location, season and the proper selecting and planting of the seed as in the variety and quality of the seed to be used.

For example, one person will well and thoroughly prepare his field, have his land worked and fertilized as it should be, ready for the season to plant, the time and favorable rains come, he furrows out his land and plants, in due time he sees his labor and expense crowned with satisfactory and profitable results. Another party pays less attention to the preparation of his land and is not ready when the season is at its best, but when he considers himself ready, he takes a part of the same seed and does his planting. The result is different and he feels disappointed and discouraged, and he at once believes there must be something wrong with the seed.

We wish it to be understood that all we have said applies to canes produced on lands without irrigation.

In regard to varieties of cane we beg to report that, as far as we can learn, *no* cane has yet been found (though many varieties have been carefully tried) that excels, or even equals our Lahaina cane in yield of sugars per ton of cane or acre of land.

It has been thought that some varieties of cane might be found to do better on lands of a high altitude, that is to say from 1,000 feet upwards. We may here state that Mr. A. Moore, Manager of the Paauhau Plantation, Hamakua, Hawaii, has made careful tests of several varieties of cane at an elevation ranging from 1,050 to 1,150 feet. The canes grew well, giving a heavy growth on the land, but the juices were not as pure as the Lahaina and the fibre as full, did not at all compare with "our old standby," Lahaina. Mr. Moore claims that the Lahaina would have given as much, and very likely, more sugar per acre of cane than did the "Queensland" or "Rose Bamboo" cane, which was the last of the varieties tested. The result is that this season Mr. Moore holds on to the Lahaina cane, planting at still higher elevations. He plants only enough of the other varieties for future use if found necessary or desirable.

With these facts plainly before us it behooves us to exercise every care in the selection of seed cane, and in the preparation of our soils to receive it, as it appears to us the perpetuation of the valuable properties of this excellent cane depends, to a very great degree upon these two important measures.

Respectfully submitted,
Hawaii, October, 1889.

W. H. RICKARD,
Chairman.

REPORT OF COMMITTEE ON RAMIE.

To Hon. H. P. Baldwin, President of the Planters' Labor and Supply Company:

SIR:—Your Committee on Ramie respectfully report that nothing has been done in this industry during the past year owing to the lack of funds. The plantation, about seven miles from Hilo, still exists and bears a fine crop now growing, but has received no attention and is overgrown with grass and weeds. The ramie, however, cannot be killed out and is available for any future use. There has been some discussion during the past year with regard to resuming the enterprise but nothing definite has been accomplished. The attitude of the industry at the present time in Hawaii, seems to be that of waiting for further development of ramie cleaning machinery.

The machine which is owned by this company has been tried and has accomplished good work. It shows that it is practicable to decorticate the ramie in such quantities and at such figures that it will pay a small amount to export the fibres in that shape but, up to the present time, no machine has been devised for the removal of the gummy material from the bark without use of chemicals, and including different processes. Meantime the ingenuity of inventors in the United States and in Europe is engaged in devising new machinery for the purpose of successfully treating the ramie in the field, in order that the fibre may be entirely freed from all woody and gummy material. When this is accomplished there is no reason why the industry should not become one of our permanent paying industries. Interest in the subject is developing throughout the world; considerable areas have been devoted to the cultivation of ramie in different portions of the United States during the past year and it is probable that before another meeting of the Company, a machine, now in process of development in the eastern United States, will have become so developed as to accomplish the desired object. An appropriation of \$5,500 is still available for the purpose of the encouragement of ramie culture in this country, but it should not and will not be paid out without some substantial benefit to be derived by the country.

Your Committee regret there is not more to report upon this subject, but they feel the great importance of diversifying the industries of the Islands. At the present time we practically depend upon the sugar industry; rice, which is our second, is entirely in the hands of the Chinese, and it is not improbable that it will decrease rather than increase, in view of the probable legislation upon the subject of Chinese, at the next meeting of the Legislature.

Your Committee most earnestly recommend that decided action be taken at the present meeting of this Company with regard to increasing the number of industries in the country. The ramie industry, the growth of coffee and some others are now beyond the stage of experiment and, for our own well being, and for the more substantial and certain development of the country, these and perhaps some other industries should be taken hold of and developed.

Respectfully submitted,

W. R. CASTLE.

RECIPROCITY.

The Committee on Reciprocity have not deemed it necessary to submit a formal report, as there has been no change in the status of the treaty, which is likely to continue as at present to the end of its term, subject to decreased benefit to us, should the duty on sugar be reduced by Act of Congress, of which we have no advice.

Within the past month a project has been brought before the Hawaiian Government, designed to perpetuate the treaty and to extend its benefits by adopting a free trade basis between the two countries. The more that the details and operation of this proposed treaty are known, the more evident it appears that some legislation of the kind is needed to impart stability to capital and all landed interests and pursuits in these islands. So long as we are liable to be disturbed by changes of tariff in the United States, so long will business here be unsettled and insecure, and the commercial prosperity of the country be impeded. If such a change as is proposed shall meet favor in the United States, we see no reason why it should not be supported here.

It may, therefore, be well to bring up this subject of the new proposed treaty, discuss its points, and place on record the views of the members of this association, in the event that it comes before the country as a measure to be adopted.

Respectfully submitted,

H. M. WHITNEY, Chairman.

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*RESOLUTION ON THE RECIPROCITY TREATY
ADOPTED BY THE PLANTERS' LABOR
AND SUPPLY COMPANY.*

WHEREAS, the stability of the industries of the country is of vital importance to the future prosperity and independence of Hawaii, and

WHEREAS, from the geographical position of these Islands, such prosperity must depend largely upon the character of our relations with the United States, and

WHEREAS, the benefits of the Treaty of Reciprocity, which is limited as to term, may be practically annulled by the removal or considerable reduction of duties in the United States upon sugar and other products now admitted free under the Treaty, or by the possible offer of bounties upon sugar produced in the United States, and

WHEREAS, a proposition for an enlarged treaty looking toward a permanent commercial union and more definite political relations with the United States has been under consideration by the Hawaiian Government, therefore,

Resolved, that while the Planters' Labor and Supply Company believe that the autonomy of the Hawaiian Kingdom should be maintained, it favors such treaty, in addition to the present Treaty of Reciprocity, with the United States as shall place the products and manufactures of the Hawaiian Islands upon the same basis as those of the United States, and shall knit still closer the cordial political relations now existing between the two countries.

P. C. JONES,
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EARLY HISTORY OF SUGARCANE IN LOUISIANA.

The following very interesting article was written thirty-two years ago by Mr. J. B. Avequin, then the leading authority in America on the subject, and it was published in the *Sunday Delta*, April 12, 1857. It fully proves that the cane which is now almost universally grown here—the red ribbon—was brought from Savannah, Ga., (strange to say,) and that John Joseph Coiron is the gentleman who has conferred such a boon on the planters who succeeded him. We have been kindly loaned the paper from which we make the extract, by his venerable daughter, Miss E. Coiron, who resides in New Orleans. As so many of the early planters are named, we reproduce the article entire, as follows:

"In an article published some time ago, we asserted that the sugarcane is indigenous to the East Indies, China, the Kingdoms of Siam and Spain, a few islands of the Indian Ocean, Tanna, in the Hebrides, Otaheite, (Society Islands) and the Loo Tchoo Islands of Japan.

There are numerous varieties in India some of which are not classified. Each of the above countries mentioned has furnished one or more varieties peculiar to itself.

The cane called the *Creole*, of Malabar and Bengal, was the first known to eastern nations; it was introduced into Arabia from India, shortly after the conquests of Alexander the Great, thence into Egypt, and long afterwards into Sicily, Spain, even to Provence in France; also into the Canaries, thence to the Antilles and into Brazil and the rest of South America.

The sugarcane is now cultivated in all tropical countries, in India as well as in South America; and in the United States to the thirty-fourth parallel of north latitude, but there the juice will not crystalize, and makes syrup only. We will defer considering this branch of the subject for the present.

The half-civilized Indians of Peru, Brazil, New Granada, Mexico and Central America cultivate the cane, and from its fermented juice make an exhilarating drink, called *Guarape fuerte* or *chica*, which is a very pleasant beverage in those warm

climates. They also manufacture from the juice *Chaneaca*, a species of coarse unpurged sugar, and *Raspadura*, a close-grained, boiled sugar, which is put up in corn shucks.

The first sugarcane imported into Louisiana, was brought from St. Domingo.

HISTORICAL SKETCH OF THE INTRODUCTION OF SUGARCANE INTO LOUISIANA.

It was in 1751, whilst the Marquis de Vaudreuil was Governor of the Colony of Louisiana, that the sugarcane was first introduced into that province. On the 17th of April of that year, 200 troops were sent out from France to complete the forces of the colony. The transports touched at St. Domingo, when the Jesuits of Leogane in the bay of Port-au-Prince, obtained leave to send on board, for their branch establishment in New Orleans, a supply of cane and a few negroes used to its cultivation and the manufacture of sugar.

These canes were planted in the spacious gardens of the Reverent Fathers, where now stands the First District of New Orleans, just above the city, as it then existed. It was the Malabar, or Bengal variety.

During the first two years, the Jesuits attended only to increasing the plant; and their attempts for years afterwards to extract sugar were fruitless. They persevered nevertheless.

Although the growth of the cane was encouraging, it did not attain maturity on account of the severity of the climate; it was, as we have said, the Malabar variety, which has since been termed the *Creole* cane.

Thus, to the spirit of industry of the Jesuits, is due the naturalization of the sugarcane in Louisiana, which has been a source of much wealth to the State.

The Jesuits made some attempts to manufacture sugar in 1754, but with no success, and they attributed their failure to their works being put up on too small a scale. They nevertheless persisted.

From 1752 to 1758, several planters in the environs of New Orleans, having procured a few plants each from the Jesuits, cultivated them assiduously. At this time (1758) Dubreuil, who was a rich planter, attempted the experiment on a larger scale. He erected a sugar-house on his grounds, near the lower extremity of the town, where is now the Third District, or faubourg Marigny. Up to 1763 his attempts were discouraging and even fruitless, in the making of sugar; nor had the Jesuits been more successful.

In 1764, the Chevalier de Mazan, on the opposite side of the Mississippi, tried the experiment without better success; although several reports of that epoch compare that gentleman's sugar to the brown sugar of St. Domingo, which was done more to encourage him than because it was true. The brown

sugar of Louisiana never was and never will be equal to that made in the West or East Indies, although its color is sometimes preferable ; but that is owing to the age of the cane and the nature of its juice.

Notwithstanding all this, in 1765, several planters, and among them Destrehan, then Treasurer of the King of France in the Colony, put up works similar to those of Dubreuil, below the city, on the left bank of the river. The small quantity of bad sugar made by them and consumed in the country, looked exactly like marmalade or guava jelly. In the same year, a vessel which sailed for France, took out a number of barrels of the article to complete her cargo ; but it was so inferior that it all leaked out before reaching port. (In fact, even in our own time, such is the case, sometimes, with badly manufactured Louisiana sugar).

At that period the judicious use of lime was not known, nor the true striking point, two essential requisites. In one word, the failure had been general.

In 1769 the manufacture of sugar was totally abandoned in Louisiana. Those who had tried it were discouraged. The crops did not even cover the outlay.

The trade of New Orleans then consisted of lumber, indigo, peltries, tobacco, cotton, tar, rice and corn. Dubreuil was the richest planter in the colony. His slaves numbered five hundred ; he had a brick yard, an indigo plantation, a nursery for silk worms, and gathered eight or ten thousand pounds of vegetable wax yearly from the *Myrica Cerifera*, of which he had made large nurseries.

Nevertheless, some individuals, probably gardeners, continued planting canes in the neighborhood of New Orleans, selling them at retail in the market for the use of children. Others expressed the juice, made syrup of it, and sold it in bottles.

Thus, this new source of industry, springing up in 1765, contending against climate, unseasoned weather, etc., was given up in despair in 1769. More than twenty-five years elapsed before further experiments were made.

In 1790, about the only person who kept up the cultivation of the sugarcane was a Spaniard named Solis, who lived nine or ten miles below New Orleans, at Terre aux Bœufs ; and only did so to make *tafia* or rum of the cane juice. This was already an article which met with a ready sale. This man's attempts to make sugar had also proved abortive. His land, or a portion of it, now forms part of the Olivier plantation, and belonged some years ago to Pierre Reaud.

In 1791, A. Mendez, of New Orleans, bought Solis' apparatus, land, etc., firmly resolved to carry on this branch of industry and overcome all obstacles. He, therefore, employed a man named Morin, who had attained practical experience in St. Domingo in cultivating cane and making sugar.

But owing to want of means, or fear of failure, Mendez could only succeed in making a few barrels of sugar in 1791; he even tried to refine it, for he presented, in 1792, to Don Rendon, then Spanish Intendant of Louisiana, a few small loaves of white sugar, one of which was about enough to sweeten two cups of coffee.

At a grand dinner which he gave to the New Orleans authorities that year, the Intendant, at the dessert, called attention to these loaves as a production of Louisiana, manufactured by Mendez. Thus, up to that time sugar was made only in small quantities, and exhibited as a curiosity.

In 1792, Etienne Bore, a planter, a few miles above the city, finding his indigo crops fail, conceived the idea of mending his broken fortunes by making sugar. His project was looked upon as chimerical, and every endeavor was made by friends and relatives to deter him. But Bore was a man of enterprise and perseverance. He bought canes of Mendez, and made a plantation, for that time, of considerable extent. He employed Morin, of whom we have already spoken, to build sugar works similar to those in St. Domingo, and to put them in operation, at a salary of \$1,500 per annum. Two years were consumed in planting and building. At length, in the third year, (1795) their expectations began to be realized, and 1796 proved a triumph to Bore; his difficulties were overcome and his crop brought \$12,000—a most gratifying result. This powerful incentive roused him to further efforts, and this branch of industry was thenceforth firmly established in Louisiana.

Many planters, elated by his success, followed his example, and immediately began to erect the necessary apparatus. Among the first were the Piseros, the Cabarets, the Reggios, and Macartys; the numbers continued swelling and all proved eminently successful.

At that time, viz: 1797, there were but two varieties of sugarcane in Louisiana, the Malabar or Bengal, and the Otaheite; these have disappeared, or nearly so, having given place to the purple or red ribbon cane of Java or Batavia. The latter produces two varieties, one good the other worthless, which we shall describe elsewhere.

It is not known at what time the Otaheitan variety was first brought to Louisiana; but it was doubtless brought from the West Indies, probably from St. Domingo, towards 1796 or 1797.

The red or purple ribbon cane, as we have said, is a native of Java, and probably of some other parts of India. The Dutch had already met with it in Batavia, in a state of cultivation. They introduced it about the middle of the last century to St. Eustatius, Curaçoa, Guiana and Surinam. It thence was spread over all the West Indian Islands and part of the American continent.

In 1814, or thereabouts, an American schooner from St. Eustatius, a Dutch colony, imported a few bundles of this cane into Savannah, Georgia. They were planted by a Mr. King, not far from the mouth of the Savannah River, on St. Simon's Island. They grew well, and Mr. King began the manufacture of sugar.

In 1817, a dozen or so of the plants were brought to New Orleans by John Jos. Coiron, who planted them in his garden at Terre aux Bœufs. Having succeeded admirably in these, Mr. Coiron, in 1825, imported a sloop load from Savannah, which he planted on his estate, known as the St. Sophie Plantation, about thirty-six miles below New Orleans. This property has since belonged to Laurent Millaudon. Thence originated the ribbon cane, or Javanese, which is the one most generally grown in Louisiana.

The red or purple ribbon cane and violet (which is a degenerate species) are the two best varieties ever cultivated in Louisiana. They are hardy and are not injured by a cold of two or three degrees of the Centigrade thermometer. They are, however, not worth the Otaheitan or the Salangor in tropical regions. They are less juicy than the Malabar, Bengal, Tanna or Otaheitan; and although their juice is a little impure, it possesses excellent manufacturing qualities when mature. These varieties have made the fortunes of the planters of Louisiana. They only have stood the severity of the seasons; the other kinds are not suitable to the climate of Louisiana. The planters of this State owe to John Jos. Coiron a debt which should be recognized and paid by a statue or some public monument equally lasting and conspicuous. He died about twenty-five years ago, without having lived to realize or anticipate the extent of the benefits and wealth he had conferred on Louisiana."—*Louisiana Sugar Bowl.*

SUGAR MAKING IN KANSAS.

The process of transforming sorghum cane into sugar is being conducted on a large scale in Kansas, and the developments of this season's work will demonstrate the success or failure of the present methods. Should the result be unfavorable to the present process, the introduction of some other methods will result; but there is hardly a probability of a failure this year.

The mills that are ready to work up this season's crop are constructed in the most approved style with all modern appliances, and they will succeed.

The newest and best of the plants is that constructed this year at Attica, by the Kansas State Sugar Company. This es-

establishment began to work its crop of cane on the 19th August, and before these lines are in the hands of our readers all the other mills will be in operation.

The mill of the Topeka Sugar Company, which was totally destroyed by fire on the night of the 5th inst., was the largest establishment in the State. The mill was of stone, 182x58 feet inside, with walls twenty-eight feet high and metal roof; and it was supplied with valuable and abundant machinery. Separate boiler house of stone 83x44 feet, and other needed buildings were provided. The misfortune of fire that swept the mill and machinery away in a midnight blaze, was a calamity to the State which cannot be remedied this year. The crop of 1.650 acres of cane of excellent quality, was just ready to be worked, and it is impracticable to take care of it this year.

The nine plants that are left to operate in Kansas this year, except that at Fort Scott and the new mill at Ness City, are all in the south tier of counties in the State, and well distributed towards the western line.

The Ness City Mill is in the fourth tier of counties from the south line, and the fourth tier from the west line of the State, thus giving it a central-western position.

The Topeka mill was in northern Kansas, and well towards the eastern end of the State. Geographically there was a good distribution, so that any climatic advantages could be noted. Now, whatever is done this year, will be done in the southern part of the State.

The remaining mills are located as follows: Fort Scott, Attica, Conway Springs, Medicine Lodge, Kingman, Ness City, Meade Center, Arkalon and Liberal, and are all under patronage of and inspection by the U. S. Government, through agents appointed to conduct certain experiments.

These nine mills ought to produce 3,000,000 pounds of sugar, at a low estimate. The result, it will be seen, is likely to produce an appreciable effect on the sugar industry of the United States, and the reasonable success of these Kansas mills will induce large investments in this industry in Kansas during the year 1890.—*Manhattan (Kan.) Homestead.*

ABOUT LOGWOOD—ONE OF THE MOST IMPORTANT BRANCHES OF THE WEST INDIA TRADE.

The trim little Yankee brigantine Edith, of Boston, Captain W. G. Foster, master, was lying discharging logwood from Jamaica, at Providence, R. I., when the *Providence Journal's* marine reporter strolled on board in search of an item. Having gained the information desired, he approached the mate for something more in detail of the brig's movements. The

first officer, though not a very old salt, yet had been bronzed by many tropic suns and knew the way of the West Indiamen, and so the two sat down together in the little cabin with the tar scented atmosphere and a suggestion of the aroma of Jamaica, where she had last been, and the mate told his story: "This brig is a reg'lar West Indiaman; that's what she was built for. She has carried many cargoes of sugar, molasses and melado—melado, yes, melado is a combination of sugar and molasses, much like what we call molasses-sugar." Melado, when refined, produces various grades of sugars and syrups.

But the logwood carrying trade is another branch of the business, carried on mostly from the islands of Hispanola and Jamaica. Hayti and Santa Domingo are the French and Spanish, as well as the western and eastern halves of the island. The population of Hayti once was almost all French, but is now mostly negroes; the Frenchmen "disappeared." The natives at one end speak Spanish; at the other a sort of French, from their nationality or proximity to nationality.

The negroes are largely voodoo or serpent worshippers. Logwood, the sap or juice of which is extracted very largely for purposes of dyeing in different colors, grows in swampy places on low lands. The trees are somewhat shaped like elm trees, with large branches, but these are more tortuous and kinky, much more clumsy looking, in fact. The leaves of the foliage do not grow with any luxuriance, but are dwarfed and grow close to the limb; they are slimmer and longer. The natives, in securing the wood, cut down the trees with huge, heavy-headed axes, like beetles, and cut off the bark and sap wood with these and with machetes, long, scimitar or cutlass-like knives. The heavy heads of the axes assist them in breaking off the limbs when nearly severed, and they proceed to cut these into convenient lengths. The heart wood, which is red (the sap wood is yellow), is used for dyeing, and is filed up and carted down to the shore or quay, where it is piled up by the natives. The carts are of very rude construction, with clumsy, ungainly wheels made by the natives. If the ship is to be loaded lying off the harbor the logwood is loaded in canoes carrying two negroes, who handle the wood from the canoes to the ship. The canoes are "dug-outs," cut from the trunk of the cottonwood tree. The natives have cut down all the trees near the shore, and now have to go from three or four to even ten miles inland to find good wood. The older growth is the best.

The Haytian negroes are said to be a lazy, shiftless set, and addicted to drinking cana, or sugarcane rum (pronounced canya), and fond of voodoo worship. Human sacrifices of infants even are said to be a part of their weird religion.