

THE
PLANTERS' MONTHLY,

PUBLISHED BY THE

Planters' Labor and Supply Company,

OF THE HAWAIIAN ISLANDS.

VOL. IV.] HONOLULU, OCTOBER, 1885. [NO. 7.

PLANTERS' LABOR AND SUPPLY COMPANY.

INCORPORATED MARCH, 1882.

OFFICE—HONOLULU, HAWAIIAN ISLANDS.

ANNUAL MEETING IN OCTOBER OF EACH YEAR.

OFFICERS ELECTED OCTOBER 12, 1885.

S. B. DOLE.....	President	L. A. THURSTON.....	Secretary
H. P. BALDWIN.....	Vice-President	J. B. ATHERTON.....	Auditor
P. C. JONES.....	Treasurer		

TRUSTEES ELECTED OCTOBER 12, 1885.

DOLE, S. B.	BALDWIN, H. P.	ROWELL, W. E.	WILCOX, G. N.
HALSTEAD, R.	GLADE, H. F.	MACFIE, R. A.	ATHERTON, J. B.
JONES, P. C.	THURSTON, L. A.	HORNER, W. Y.	HORNER, J. M.
CASTLE, W. R.			

COMMITTEES OF THE PLANTERS' LABOR AND SUPPLY CO.

APPOINTED OCTOBER 13, 1885.

LABOR.				
W. H. Bailey,	E. M. Walsh,	J. K. Smith,	R. R. Hind,	S. L. Austin.
CULTIVATION.				
G. H. Dole,	C. Koelling,	A. Lidgate,	W. H. Rickard,	G. N. Wilcox
MACHINERY.				
James Renton,	C. F. Hart,	T. H. Davies,	W. Y. Horner,	J. Ross.
LEGISLATION.				
J. B. Atherton,	L. A. Thurston,	T. R. Walker,	W. R. Castle.	D. H. Hitchcock.
RECIPROCITY.				
P. C. Jones,	F. A. Schaefer,	W. W. Hall,	C. R. Bishop,	R. Halstead.
TRANSPORTATION.				
R. A. Macfie, Jr.,	J. M. Horner,	J. N. Wright,	Chas. Notley,	G. H. Dole
MANUFACTURE OF SUGAR.				
J. M. Lydgate,	Jos. Marsden,	C. C. Kennedy,	A. Haneberg	A. Dreier
LIVE STOCK.				
J. H. Paty	Z. S. Spalding,	A. S. Wilcox,	A Dreier,	B. F. Dillingham.
FORESTRY.				
H. M. Whitney,	E. G. Hitchcock,	C. R. Bishop,	J. Alexander,	W. H. Purvis.
FERTILIZERS AND SEED CANE.				
H. P. Baldwin,	E. C. Bond,	E. H. Bailey,	R. Halstead,	A. Faye.
VARIETIES OF CANE.				
A. H. Smith,	E. G. Hitchcock,	W. H. Purvis,	G. C. Williams,	G. F. Holmes.
STATISTICS.				
B. F. Dillingham,	W. F. Allen,	C. S. Kinnersley,	H. W. Mist,	C. M. Cooke.
FRUIT CULTURE.				
E. Lycan,	Jonathan Austin,	C. Koelling,	W. P. A. Brower,	E. H. Bailey,

THE ANNUAL MEETING OF THE P. L. & S. CO.

Another annual meeting of the Planters' Labor and Supply Company has come and after a successful session of four days has been brought to a close. The meetings were well attended, and the reports show careful work.

The report on live stock is the result of lengthy research and is especially valuable on account of its being the first and only complete compilation and analysis of the live stock importation and resources of the Kingdom. It will be of great assistance to stock raisers in giving them a basis from which to estimate the future prospects of the stock business.

The report on sugar manufacture will also be found most instructive and valuable to practical planters and managers who are progressively inclined.

The outlines of the proceedings are shown in the minutes printed herewith, and the various reports show the results of the work done by the committees, but the exceedingly interesting and instructive discussions which are carried on at length can not be given owing to lack of space. It is this feature of the meetings which is of the greatest value to planters. Hearing the experiences of other planters, talking over methods and comparing views is of more practical benefit than reading half a dozen reports. It is a noticeable fact that those planters who have attended one annual meeting are almost all found present at the next.

No diminution of energy, in the quality of the reports or in the satisfactory nature of the meetings was shown, and the Company has entered on a new year of its life with a brighter prospect for its continued usefulness than ever before.

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*MINUTES OF THE ANNUAL MEETING OF THE PLANTERS'
LABOR AND SUPPLY COMPANY, HELD OCTOBER
10, 1885, AT 10 O'CLOCK A. M.*

First Day, October 10th, 1885.

The meeting was called to order by President Austin.

The Secretary called the roll of stockholders, and 9,143 shares out of 15,195 were found to be represented; 7,597 being necessary to a quorum, a quorum was present.

The minutes of the last annual meeting were taken as read, having been printed in the *PLANTERS' MONTHLY*.

The Secretary's report was read by L. A. Thurston, accepted and ordered printed in the *PLANTERS' MONTHLY*.

Mr. P. C. Jones, Treasurer, presented and read his report, which was accepted and referred to the Auditor.

The nomination and election of Trustees for the coming year came next in order

Nominations were made of different names. The President suggested that more from Honolulu be elected, so that more might be at the quarterly meetings.

Mr. Baldwin and Mr. Bailey complained that they had not been notified of the quarterly meetings.

The President stated that the failure to notify grew out of the confusion in the change of secretaries.

Messrs. Dole and Rowell were appointed Tellers and balloting was proceeded with.

Upon return of the tellers at 11:30 the meeting adjourned till 1:30.

At 1:30 the meeting came to order and the Secretary announced the election of Trustees as follows:

S. B. Dole, 9,160; H. P. Baldwin, 9,155; W. E. Rowell, 8,445; G. N. Wilcox, 8,440; R. Halstead, 8,440; H. F. Glade, 8,150; R. A. Macfie, 7,575; J. B. Atherton, 6,950; P. C. Jones, 6,950; L. A. Thurston, 6,945; W. Y. Horner, 6,880; J. M. Horner, 6,365; W. R. Castle, 6,230.

Mr. Lycan, on behalf of the Hawaiian Ramie Company stated that the company now owned the Coleman Ramie Machine, which had been much improved. He wished that a committee could be appointed to inspect it.

On motion of Mr. Smith, the President appointed the following Committee for that purpose: W. E. Rowell, W. Y. Horner, H. P. Baldwin, J. B. Atherton, J. M. Lidgate and A. H. Smith. It was inspected by the Committee at the shop of Robert More & Co., King street, on Oct. 10th.

The report on Cultivation was presented and read by Mr. J. M. Horner, Chairman of the Committee. It was accepted and ordered printed in the *PLANTERS' MONTHLY*.

Mr. Dillingham presented and read the report on Live Stock. It was accepted and ordered printed in the *PLANTERS' MONTHLY*.

Mr. Dole presented the report on Fruit Culture, signed by J. M. Alexander, Chairman. A communication from D. H. Hitchcock on the same subject was also presented. They were accepted and ordered printed in the *PLANTERS' MONTHLY*.

Mr. Lycan stated that he had raspberries from Guatemala which had borne finely this year. He has about 100 varieties of fruit trees.

DISCUSSION ON LABOR.

Mr. J. M. Horner wanted to know how they stood about labor. He would like to hear some of the members on the subject, and have them state how they got along with the Japanese.

Mr. Bailey said he had been very fortunate in his experience with Japanese, probably because he had some old men among them. They had confidence in him, and in the evening would come to him with their fancied ailments. He dosed them, and the next morning they appeared at work all right. As irrigators they could not be beaten, and they were steady and honest. Leave them alone and they work just the same as if watched. They are a little obstinate in being moved from one work to another.

Mr. Lidgate said he did not want any of them. His brother had fifteen, and on a plantation close by there were seventy, and there was not any satisfaction from them. On one plantation he knew they were put to the same work as the women and children, not being fit for anything else. No more Japanese were required in his neighborhood.

Mr. Smith said he had got along very well with his Japanese. There was less trouble on plantations where they work in small numbers.

The President stated that the experience with the Japanese was varied.

Mr. Baily said he had had a visit from Inspectors, but he told them he did not consider they had anything to do with the regulations of his plantation; they made no objection.

Mr. Baldwin thought that Portuguese immigration should be en-

couraged that he had found them the most satisfactory of any laborers. He did not find that they stopped work when their contracts expired. Those who left were more than made up for by those who came from other plantations.

Mr. Lidgate said that he had proposed to his Portuguese to plant on shares, but the proposition seemed to stagger them; he thought that it took more head and calculation than the ordinary Portuguese had to work on this plan; he had four different lots of Chinese planting on shares, and they and he found it remunerative.

Mr. Thurston, speaking of Japanese, thought the trouble was largely in the different sets of men employed. While on Maui, recently, he had a conversation with Captain Clark, of Kipahulu. The latter stated that out of sixteen Japanese on his plantation ten were professional wrestlers. They wanted to give performances and collect money. One of them was an ex-bank cashier, a defaulter, who had to leave his country. He could do nothing with him—he would not work. Several had old chronic complaints, and had been sent to the hospital at his expense at a cost of about \$50 each, and were now no better than before. The Japanese Commissioner admitted that ten out of fifteen men with Mr. Lidgate were bad. Mr. Thurston also met Mr. Kennedy, of Waiakea, who said that he never had better men than the Japanese. Mr. Irwin, the Japanese Agent, had not exercised care in his selection of the men.

Mr. Bailey did not like the way the immigrants were selected. Among his Portuguese he had one with a broken leg, another a hunchback, an idiot, and one a very old man. Many of them were no good. The men had been sent simply to fill up the ships. Every planter on his contract ought to specify the kind of men wanted, accept them and none others.

Mr. Horner said the matter of selecting was one of great importance. Among his men he had two with chronic diseases. That was not the kind wanted. Orders should be given for the class of men wanted. His son at Kukuihaele had twenty Japanese who were unequalled at feeding the flumes. There were four or five gamblers among them. After they had been in the islands a few weeks they sent money home to Japan. This was a matter of surprise, but not so when it was learned they spent their evenings in gambling. The gambling was stopped.

There being no further business before the meeting, it adjourned till 10 o'clock next day.

Second Day, October 12th.

Meeting called to order by President Austin and minutes of previous meeting read and approved.

Mr. Macfie asked to withdraw from position of Trustee, to which he had been elected. Request not granted.

The Auditor presented the Treasurer's report, which he had audited and found correct. Report accepted, and ordered to be printed in the PLANTERS' MONTHLY.

Mr. R. Halstead presented and read the report on Machinery. Accepted and ordered printed in the PLANTERS' MONTHLY.

Mr. Davies presented the report of the Committee on Legislation. Accepted and ordered printed in the PLANTERS' MONTHLY.

J. M. Horner moved that a resolution be drawn up to embody the spirit of the report just read. Carried.

Mr. Rowell stated that the report on Transportation was not ready; that he had been unable to get time to finish it. Mr. Atherton moved that it be finished, and printed in the PLANTERS' MONTHLY. Carried.

H. P. Baldwin presented the report on Manufacture of Sugar. Accepted and ordered printed in the PLANTERS' MONTHLY.

J. M. Lidgate presented a supplementary report. Accepted and ordered printed in the PLANTERS' MONTHLY.

Vote of thanks passed to Messrs. Baldwin and Lidgate for their able reports.

J. M. Horner said that different departments had to be confided to subordinates. It was strange how much was trusted to sugar-boilers; most sugar-boilers were selfish and close and would not tell what they knew; that those who best knew said that 10 to 15 per cent. of sugar was lost, but that most sugar-boilers would not learn. One sugar-boiler had made sugar polarizing 99 2-10 and claimed that he could make 99 every time. Hoped he would be allowed to test his statements before those who knew.

Mr. Bailey said that managers were at disadvantage by not being practical chemists, and did not know what instruments were needed or how to apply them; that if Mr. Lidgate or some other person would make it his business to make known what were needed, planters would get them. That last year he had been at the Alvarado Sugar Works in California, and examined their works. At short intervals the chemist analyzed the juice and ascertained the amount of sugar in it; that the sugar-boiler was held responsible for the amount of sugar or it was deducted from his wages or he had to show some cause for any loss.

Mr. Baldwin said that he thought one of our great faults was in leaving the work entirely to sugar-boilers; that no matter how careful they might work, owners and managers must undertake to supervise the work, and study it scientifically or it would not be done.

Mr. Lidgate said he was no more a chemist than any one present; that the question of chemical knowledge was made a bugbear unnecessarily; that very little knowledge and some half dozen chemicals was all that was necessary.

Mr. G. H. Dole presented the report on Fertilizers and Seed Cane. Accepted and ordered printed in the PLANTERS' MONTHLY.

The meeting then adjourned till 2 o'clock p. m.

At 2 o'clock the meeting was called to order.

The Secretary announced the election of officers by the Trustees, as follows:—President, S. B. Dole; Vice-President, H. P. Baldwin; Secretary, L. A. Thurston; Treasurer, P. C. Jones; Auditor, J. B. Atherton.

Mr. Berger sent a statement to the Company that he would have the band play for the planters at such time and place as they might wish.

The Honolulu members of the Company invited the out-of-town members to lunch at the Hotel at 1 o'clock the following day, and requested Mr. Berger to play at that time.

Mr. Austin made some retiring remarks, as follows:

“The attendance of so goodly a number at this annual meeting is a matter for mutual congratulation; it is indicative of the feelings of planters, and it is pleasant to know that the efforts which this Company has made to promote a more general and comprehensive interchange of thoughts and experience relating to our great special industry, and also to kindred topics, have been effective, and that, in consequence of them, we are becoming in a measure cosmopolitan. The principal matters of interest to planters which have been under consideration by the Trustees since our last annual meeting are brought to your attention in the report of the Secretary. In addition to such matters, many subjects of im-

portance have received careful attention from individual members, and it is hoped that several valuable papers will be read before the close of the meeting in addition to the reports of the regular committees. At each annual meeting heretofore, a considerable number of the members have felt that they must leave for home by the Tuesday steamers, and it has been difficult to maintain a quorum during the closing days. For that reason it was deemed advisable to make an innovation upon the custom of meeting on Monday, and this meeting was called for Saturday in the hope that an additional day would afford more time for the consideration of business by the majority of the members. It is hoped that nearly all will remain long enough for full opportunity to discuss the many interesting subjects which demand our attention. Upon retiring from the office with which you have honored me, I desire to express my thanks for the confidence shown to me by the Company, and for the intelligent coöperation of my associates in the Board of Trustees."

Mr. Davies on behalf of the Company thanked Mr. Austin for his prompt and efficient service during the past year.

Mr. Jones stated that he had no written report on Reciprocity, but that there was no prospect of any immediate change; that no action had been taken by the Company during the past year, and that about all there was to be said on the subject was contained in the Secretary's reports.

Mr. A. H. Smith presented the report on labor, and also a comparative table, made by Mr. Macfie, as to value and amount of work done by different nationalities. Accepted, and ordered to be printed in the **PLANTERS' MONTHLY**.

Mr. Whitney presented report on varieties of cane. Received, and ordered to be printed in the **PLANTERS' MONTHLY**.

An article from F. H. Austin on method of cultivation was read by the Secretary. Accepted, and ordered to be printed in the **PLANTERS' MONTHLY**.

Mr. J. M. Horner moved that a statement from Mr. Walsh on the subject of cane culture be printed in the **PLANTERS' MONTHLY**. Passed.

Mr. J. M. Horner introduced a resolution relative to the introduction of labor, commending the action taken by the Government in introducing labor, and urging that free labor be allowed to come from all countries.

Mr. A. H. Smith and Mr. J. M. Lidgate thought it best to leave the subject to the Trustees.

Mr. Baldwin thought we had better give the preference to Portuguese.

Mr. Thurston thought the Company should not commit itself to the policy of allowing free immigration of Chinese.

Mr. Lidgate moved that the subject be postponed till next day, and that the resolution be printed.

Mr. Smith said we ought to look to the future, and get the class of labor that would prove the best laborers without contract. The Portuguese were most faithful, and less liable to strike than any other nationality. On motion, the discussion was deferred until next day.

Mr. Atherton presented a statement from Dr. G. Martin concerning molasses as a fertilizer

On motion it was ordered printed in the **PLANTERS' MONTHLY**.

Mr. Macfie asked if Mr. Horner had succeeded in covering trash in the fields.

Mr. Horner said he had; he ran a furrow between the furrows and pulled the trash in and covered it.

Mr. Lidgate said he had not burned trash for two years—buried it all;

that this could be done only on unirrigated cane; that they thought it necessary to keep the trash for a fertilizer.

Mr. Baldwin said that there seemed to be a misapprehension on the part of some planters as to what constitutes good seed cane. They seem to regard the stalk itself as the seed and select for their seed fine, large plant cane, simply because it is fine looking. This is absurd, as the eye of such cane may be small, defective, and not germinate properly. One planter says he will plant nothing but plant cane, and another says he will plant nothing but ratoons. We can lay down no such positive rule as that.

The question is, what are the essential features that constitute good seed cane

1st.—I consider the first and most important feature, a good and healthy eye.

2nd.—A good and healthy stalk.

The eye is, properly speaking, the seed, and may be compared, to a certain extent, to the seed of a fruit.

You don't necessarily select the seed of an orange tree because it comes from a fine large healthy tree, or because the fruit is fine and large—the seed may be so defective that it will not germinate properly. You must have a good and healthy looking seed, and if you can get this seed from a fine orange growing in a good tree, you have all the conditions for a good growth combined.

I don't mean to say that the seed of a fruit bears the same close relationship to the trees, as the eye does to the sugar-cane stalk—but it will serve as a comparison. In seed cane then, you must have, first a good eye, and secondly a good healthy stalk. You may find these essential features combined best in plant cane, or you may find them combined best in ratoons, as the case may be. Generally speaking ratoons have the best eye, and I prefer good healthy ratoons for a seed as a rule. It does not necessarily follow that cane that has grown rapidly makes better seed than cane that has grown slowly—short jointed cane often makes excellent seed, but it must be healthy. It is not wise to plant scrubby volunteer ratoons, as they are apt to be infected with insects or some cane disease. Concerning cultivation with the cultivator which Mr. Horner had laid such stress upon, I somewhat doubt its feasibility; on irrigated land it would fill up the furrows and would not reach the furrows where most of the weeds grew. It would apply perhaps to unirrigated land.

Mr. Lidgate thought Mr. Baldwin's theory as to seed was correct; that they did not inquire whether seed was plant or ratoon, but looked to the eyes; the largest plumpest eye was the best seed.

Mr. Horner and Mr. Baldwin both said that soaking the seed in water helped it.

Mr. Macfie said that even if the cane did not draw so much on the seed for nourishment, he thought it drew moisture through the seed from the soil. Concerning borers:—In May, 1884, he planted fifteen acres of cane on new land, with tops only, without any borers in them, and when cut it had more borers than any cane he had ever seen. It seemed almost useless to attempt to prevent the borer from getting in; that they came any way.

Mr. Baldwin said that the trouble in Mr. Macfie's case was that the borer was in the tops; that the borer laid its eggs in the top; that the eggs were laid between the leaves near the top, or in a little hole in the cane; that they were so small that they were not discovered except by the closest observation.

S. B. Dole said concerning Mr. Baldwin's theory that the bud was not so much a seed as a slip; that the cane grown therefrom would partake of the nature of the seed cane, and therefore the nature of the seed cane irrespective of the size of bud was of consequence.

A. H. Smith said he had tried planting plant and ratoons in alternate *ainas*, and that the plant came up a little quicker, while the ratoons came thicker; but that in a few months no difference could be distinguished.

G. H. Dole said in good soil the character of seed made little difference, but in poor land plant cane was best; he had planted a field partly with plant and partly ratoon; at first ratoon looked best, but that finally the plant was the best, sending out many more suckers.

Mr. Baldwin said he agreed with Mr. G. H. Dole, that in good soil the nature of the seed made little difference, but in poor soil it needed good healthy seed, and usually plant cane was the most healthy, as ratoons were likely to be diseased and to be infected with insects. Last year he had planted a rich field with as scrubby ratoons as could be found, but having big eyes; the other half was planted with plant cane but the scrubby ratoon made the heaviest cane.

The meeting then adjourned till next day, October 13th, at 10 a. m.

Third Day, October 13th.

Meeting called to order by Vice-President Baldwin.

Secretary's minutes read and with an amendment accepted.

The discussion of Mr. Horner's resolution came next in order.

Mr. Horner stated that there was no doubt that we paid more for our labor than any where else; that the Government had done what we had requested during the past twelve months, and this resolution looked towards a continuance of this policy. The papers objected to bringing Chinese here on moral grounds, but if we weighed Chinese and Japanese against renegade men from Christian nations it would result in favor of the former influx of free labor. This means Chinese. Are we prepared to say we have enough of them? they create three-fourths of the business of the country. You say they will drive us all out of business in time. I say if we can't compete with them we had better go to the wall. It's skill, intelligence and ingenuity that controls the world.

Mr. Theo. H. Davies would like to move an amendment to Mr. Horner's resolution. We are always at issue with the Government in regard to labor; he thought that the Planters' Association had been placed in a false position in regard to the free influx of Chinese; they had placed themselves on record in regard to the same.

The following is the amended Resolution:

Inasmuch as the producers of these islands are compelled to compete in the markets of the world for the sale of their products, and also compelled to use labor at much higher rates than is elsewhere used either in Europe, Africa, or the Islands of the Seas, for producing sugar, thus placing upon us burdens that are hard to bear; therefore,

Be it Resolved, That we heartily approve the acts of our Government, and what they have accomplished since our last annual meeting, in bringing and permitting laborers to come to these islands; and that we urge upon our Government by this resolution and otherwise that they put forth like exertions for supplying laborers the coming twelve months—not only in bringing in Portuguese and Japanese as heretofore, but by permitting the influx of free labor from all countries, so far as it can be done without injury to our national interests.

Mr. Macfie, said : Mr. Davies in making an amendment had stricken out the last part of the resolution "referring to the modification of existing contracts." This he thought was an important matter. There were points in the Japanese contracts which needed to be modified and unless they were he would not like to take further Japanese.

Mr. Davies said he left it out because he did not know just what it meant.

Mr. Schaefer thought that the striking out of the clause alluded to was well.

Mr. Baldwin thought that the modification of contracts should be left to the agents in conference with the Government.

Resolution passed as amended.

Mr. Davies moved and Mr. Horner seconded that the Secretary be requested to send a copy of these resolutions to the President of the Board of Immigration.

Mr. Davies said that he wished to present a resolution at this time which he thought would meet with the approbation of every member of the Association present. He said that at every previous annual meeting of the Association, the late Mr. Unna, an old and valued friend and planter, had been present and had given us the benefit of his experience which had been varied and of long continuance.

Resolved, That this Association desires to express its sense of the loss it has sustained by the death of MR. A. UNNA, whose integrity, intelligence and stability of character have been always of great value to the Association and have always been placed ungrudgingly at our disposal.

The Secretary was instructed to send a copy of the resolution to Mrs. Unna.

Mr. Horner asked if the committee had been appointed to carry out the resolution given yesterday in regard to the report of Mr. T. H. Davies.

Resolution of yesterday read.

Mr. Horner spoke upon the resolution, saying that he found there was some opposition to it. He thought that if there was anything wrong, it should be looked into.

Mr. Davies spoke upon the resolution and alluded to the statement made in the morning paper and also to the action of this Government in regard to the Japanese Government.

On motion of Mr. Horner passed as amended, as follows :

Resolved, That the Trustees be and they are hereby requested to prepare and present a suitable petition to His Majesty to appoint a Royal Commission to investigate the present status of Police and District Courts and report thereon to the next Legislative Assembly.

Mr. Baldwin desired to speak upon the subject of transportation. He desired to know what those who were using railways thought of them as compared with other means of transportation ; he had not had much experience with railroads but was going to try it ; the great question was the gauge ; most railroads on Maui were 24in.

Mr. Davies said 36in. was used at Waiakea, and worked like a charm.

Mr. Unna said for about two years he had been using narrow gauge and he was satisfied that it was the best way of transportation, even on descents of 100 ft. to the mile ; narrow gauge was best, both on account of facility in handling and turning sharp corners ; that it cost only \$5 a ton of sugar for labor in cutting, loading and carting.

Mr. Lidgate had made a good deal of inquiry and wide gauge was preferable ; those at Hamakua were dissatisfied with narrow gauge and

would put in wide if they had it to do over again ; he thought Waiakea was the most successful plantation railroad he had seen ; they also made a great saving of men by bundling the cane and having the cars run right along side of the carrier and four men pulled it off with hooks.

Mr. Macfie said one difficulty that he had experienced was too few permanent lines ; permanent lines should have heavier rails so that they could run a heavier locomotive.

J. M. Horner had been taking off crop from Kukaiau, a new plantation having steep hills. They had a wagon made with 4in. tires in front and 6in. behind ; put on a rack and laid cane straight across. It took about sixty men as cutters, drivers, etc., to make 30 to 35 clarifiers per day ; eight men at cane-carrier ; mules were unhitched at cane-carrier and took empty wagon back ; each cart made one clarifier ; four animals to one cart ; distance from field three-quarters of a mile ; will eventually have a railroad for drawing from a distance ; the wagons to run on the track ; only required ten wagons ; cost \$230 each in San Francisco ; will cost \$275 hereafter as he got them extra cheap.

Mr. Purvis said that in England he had seen flanged rails used on the ground and ordinary carts for work on the ground were used on the track also.

A. H. Smith said at Koloa they used grappling-irons for putting cane on carrier.

Mr. Dreier said it had been thrown out as it killed too many men ; it worked well in a straight line but not otherwise.

H. P. Baldwin said he thought compressed air engines were a locomotive power worth looking into ; he had sent for circulars upon the subject.

The Secretary read a communication from Mr. Marsden upon the subject of rum manufacture in Jamaica, showing that the exportation of rum made from molasses and refuse equalled the export of sugar from Jamaica and urging that a distillery be started here.

Mr. Lidgate said that the conditions were entirely different here from what they were in the West Indies, that apparently their object was more rum than sugar ; that there were many things which would make rum better than molasses, but we did not want to make rum.

Mr. Lidgate asked why the Machinery Report said that the double effect was better than triple effect ?

Mr. Halstead said his statement was based on the statement of the sugar boiler at Waianae, and on general statements which he had heard.

Mr. Lidgate said triple effect was much better than double effect ; he had made a double effect of their triple effect by cutting off one pan, and found a great difference in favor of triple effect ; much exhaust steam with triple effect, while there was none, and much hard work, with double effect.

Mr. Goodale said that, from his experience at Naalehu, Hilea, and Kapapala, the triple effects were much superior to the double.

Mr. Baldwin said double and triple effects were new here ; he had advocated double effects more on theoretical than practical grounds. The main point was the greatest result from exhaust steam. The only triple effect on Maui were at Spreckelsville, and they used direct steam on the first pan.

Mr. Lidgate said cleaning juice was the most important process in the making of sugar ; one method was cleaning before boiling, and then cleaning again, and he was going to try it.

Mr. G. H. Dole said they had followed this course at Kealia for several years, and liked it, and would continue it ; the juice was cleaned both

before and after going into the double effect. Their sugar always polarized high.

Mr. Baldwin said, at Spreckelsville they take juice direct from the mill, and clarified and cleaned it in one operation; he thought it best to use as little steam as possible until the dirt was out of the juice.

Mr. Halstead said he had made sugar polarizing at 97 per cent. by clarifying and precipitating only.

Mr. Bailey's experience was the same as Mr. Halstead's, and the sugar polarized high—97 to 99.

Mr. J. M. Lidgate said that the Company ought to get a pyrometer to ascertain the amount of heat lost—that it was very great; he thought heat in chimneys generally stood as high as 800 or 900 degrees.

The President announced the committees for the ensuing year, as follows:

LABOR.—W. H. Bailey, E. M. Walsh, J. K. Smith, R. R. Hind, S. L. Austin.

CULTIVATION.—G. H. Dole, C. Koelling, A. Lidgate, W. H. Rickard, G. N. Wilcox.

MACHINEERY.—James Renton, C. F. Hart, T. H. Davies, W. Y. Horner, J. Ross.

LEGISLATION.—J. B. Atherton, L. A. Thurston, T. R. Walker, W. R. Castle, D. H. Hitchcock.

RECIPROCITY.—P. C. Jones, F. A. Schaefer, W. W. Hall, C. R. Bishop, R. Halstead.

TRANSPORTATION.—R. A. Macfie, Jr., J. M. Horner, J. N. Wright, Charles Notley, G. H. Dole.

MANUFACTURE OF SUGAR.—J. M. Lydgate, Jos. Marsden, C. C. Kennedy, A. Haneberg, A. Dreier.

LIVE STOCK.—J. H. Paty, Z. S. Spalding, A. S. Wilcox, A. Dreier, B. F. Dillingham.

FORESTRY.—H. M. Whitney, E. G. Hitchcock, C. R. Bishop, J. Alexander, W. H. Purvis.

FERTILIZERS AND SEED CANE.—H. P. Baldwin, E. C. Bond, E. H. Bailey, R. Halstead, A. Faye.

VARIETIES OF CANE.—A. H. Smith, E. G. Hitchcock, W. H. Purvis, G. C. Williams, G. F. Holmes.

STATISTICS.—B. F. Dillingham, W. F. Allen, C. S. Kinnersley, H. W. Mist, C. M. Cooke.

FRUIT CULTURE.—E. Lycan, Jonathan Austin, C. Koelling, W. P. A. Brewer, E. H. Bailey.

Adjourned till 10 A. M. next day, the 14th.

Fourth Day, October 14th.

Vice-President Baldwin in the chair.

Minutes of the last meeting read and approved.

J. M. Horner said that the intention of the Government in the matter of the immigration circular was good; that whether the commissioners carried out the intention so well was not so clear.

Mr. Bailey said that his experience as to courtesy of commissioners was the same as Mr. Horner's. That they behaved well.

Mr. Baldwin said that the Commissioner who was on Maui did not seem to care to settle difficulties; that he did more harm than good; that the head commissioner was better.

Mr. Bailey moved that the Trustees be instructed to draw a blank form of contract to send to planters for their approval, and consult with the Government so that a uniformity of contract could be secured.

Hon. H. M. Whitney introduced Hon. J. M. Putnam, American Consul General who, after introductory remarks presented a list of questions furnished by the American Government, relative to Sugar Production.

Mr. Putnam also presented and read an official communication from himself to the Planters' Labor and Supply Co.

The Chairman thanked Mr. Putnam for the interest taken and promised that the matter should receive attention.

Mr. Bailey moved that the papers be referred to the Trustees of the Association for the purpose of answering.

Mr. J. M. Horner seconded with amendment that Trustees be authorized to obtain all necessary assistance and go to any reasonable expense in obtaining answers.

The motion was carried.

Mr. J. M. Horner made some remarks upon the advisability of planters continuing their orders for laborers in advance to fill up losses in the available material occurring through death, sickness, change of business and causes other than mere departures.

Discussion on the subject was also engaged in by Hon. H. M. Whitney, Messrs. J. M. Horner, A. H. Smith, W. H. Bailey and H. P. Baldwin.

Mr. A. H. Smith moved that the Trustees be instructed to ascertain information relative to the statement that \$100 was to be paid to Mr. Jaeger of the Royal Hawaiian Agricultural Society for expenses connected with the collection of seeds. Carried.

Mr. A. H. Smith moved that the Committee on Ramie Machine be granted further time in which to present their report and that when made it would be printed in the PLANTERS' MONTHLY. Carried.

Mr. Purvis regretted the small attendance as he desired to bring to the notice of planters a Patent Automatic Feed Indicator. Mr. Young of the Honolulu Iron Works has a model and he suggested that planters pay the machine a visit.

Mr. J. M. Horner moved, at 11:57 a. m. an adjournment *sine die*. Carried.

ANNUAL REPORTS.

SECRETARY'S ANNUAL REPORT.

To the President and Stockholders of the Planters' Labor and Supply Co.

GENTLEMEN :—The following is respectfully submitted as the Secretary's Report for the past year.

At its last annual meeting, held October 21st, 1884, the Company elected the following named gentlemen as Trustees :

W. O. Smith ; W. H. Bailéy ; Jona. Austin ; J. L. Richardson ; J. M. Horner ; R. Halstead ; W. H. Rickard ; G. N. Wilcox ; R. R. Hind ; S. B. Dole ; P. C. Jones ; H. P. Baldwin ; J. B. Atherton.

At a meeting of the Trustees held the same day, the following gentlemen were elected officers :

President.....	Jonathan Austin.
Vice-President.....	S. B. Dole.
Treasurer.....	P. C. Jones.
Secretary	W. O. Smith.
Auditor.....	J. B. Atherton.

During the year the Trustees have held seventeen meetings at the Company's room. On April 17th, Mr. W. O. Smith, Secretary, tendered his resignation as Secretary and Editor of the *Planters' Monthly* on the ground that he was about to leave the Kingdom. His resignation was not accepted, but Mr. L. A. Thurston was appointed Secretary *pro tem.* and Editor of the *Planters' Monthly*, and he has since served in that capacity.

THE TREATY.

Last year much time and energy were spent in disseminating correct information in the United States concerning the Islands and the working of the Treaty. Strong efforts were made by the enemies of the Treaty to secure its abrogation, but owing partly to the better knowledge of the effect of the Treaty which was brought home to the powers that be at Washington by statistics and explanations ; by the almost unanimous memorial of the leading merchants of San Francisco to Congress, showing at length and with great clearness the advantages derived by the Pacific Coast from the Treaty ; also in consequence of the complete refutation of the charges of fraud made by the Congressional Committee of Investigation against the Islands ; owing partly to the change of Administration in the States and the distraction of the public attention from the subject, and to the fact also that Congress has been but little in session during the last year, the Company have not deemed it necessary to make special effort in this direction and but little has been done on account thereof. The present Administration at Washington has so far been favorable to the Treaty, but there is no doubt that upon the assembling of Congress this winter renewed efforts will be made by treaty opponents looking towards its abrogation, and the planters should be prepared to meet the old round of perversion and mis-statement. Nearly the whole of the Pacific press is now in favor of the Treaty, a fact which will tell in its favor when the question again comes before Congress.

IMMIGRATION AND LABOR.

The condition of the labor market and the action taken in the matter by the Government, have rendered it unnecessary for the Company to undertake the management of bringing laborers into the country, and no immigration has taken place under control of the Company.

The South Seas seem to be no longer available as a source of labor supply, so few laborers being obtained by the last vessel sent that the expense came to a higher figure than can be profitably paid.

The prohibition of more than 25 Chinese coming upon any one vessel, does not seem to have prevented their coming. But a short time ago Chinese laborers could be obtained only by special permission of their Government, and at heavy expense to planters. Now the only requisite is to grant them permission, and they come without expense to the planter. The change is undoubtedly owing to the universally fair and just treatment which laborers receive under the administration of our labor law. This has become known to the Chinese authorities, and they no longer confuse the Islands with Peru and Mexico, whose treatment of coolie laborers has become a by-word. China may therefore be considered as a sure source of labor in the future, if it is thought best to make it available. One of the gravest of national questions is involved however in the policy of continued Chinese Immigration. The effects of the great and constantly increasing proportion of Chinese inhabitants are so important that they deserve the most careful consideration at the hands of the planters.

The following is a statement of arrivals of immigrants since the last Annual Meeting :

PORTUGUESE.

Bark *Dacca*, Jan. 19th, 1885: men, 63; women, 50; children, 165.
Total, 278.

JAPANESE.

By *City of Tokio*, February 8th, 1885; men, 676, women, 162, children, 108.

By *Yamashiro Maru*, released from Quarantine, July 18th, 1885; men, 922; women, 34.

Total, Japanese men, 1598; women, 196; children, 108. Total Japanese 1902.

SOUTH SEA ISLANDERS.

By brig *Hazard*, October, 1884: men, 73; women 6.

CHINESE.

There have been no Chinese immigrants brought to the country by the government or the company, but a large number have come at their own expense. Since the first of January there have been an excess of arrivals over departures of 2006.

As the subject of Japanese labor is one which has attracted much attention, and which has been the cause of a radical change in the manner of dealing with disagreements between employers and employed the following remarks are respectfully submitted :

So far as time has been given to judge of their qualities it would seem that they are not generally considered physically equal to Natives, Portuguese or Chinese, but that they have some qualities which are desirable and which to a degree compensate for any lack of physical ability.

They are so entirely a different civilization from any with which we have had dealings that the assimilation of them with other laborers is slow, they are not quick to comprehend our ways, and are quite sensitive to any appearance of injustice, though none may in fact be intended or exist; yet, so far as information has reached us they have proved fairly satisfactory on a majority of the estates where they have been sent. That the Government should have thought it necessary to remove them from one plantation is to be regretted.

In relation to the circular issued by the Bureau of Immigration instituting a number of commissions of inspection, a committee of the Trustees called upon the Minister of the Interior, who is President of the Board of Immigration, and requested him to give them any information which he could about the circular, at the same time informing him that if it was a necessity and advisable they would recommend that the planters be advised to co-operate with the Government to render the change as little burdensome as possible, and prevent friction.

The Minister in an informal manner stated that the circular was the result of pressure on the part of the Japanese Government and that it was the outcome of a give and take arrangement between the two Governments. That the Japanese Government had made no threats, but had insisted that something of this kind be done. The Minister further stated that the proposed commissions were to be advisory only, for the purpose of attempting to compromise disputes without recourse to the Courts. That every effort would be made by the Government to prevent hardship in carrying out the arrangements; that it was the expectation of the Government that the inspectors would act as interpreters, and that sufficient numbers of them would be placed as fast as possible and so located as to be able to avoid great delays. The Minister requested that the questions should be submitted in writing and promised to make categorical answers to them. In compliance with that request a letter of which the following is a copy was written and transmitted to the Minister.

Instead of the categorical answers promised, a letter of which the following is a copy was received.

DEPARTMENT OF INTERIOR, BUREAU OF IMMIGRATION,
Honolulu, August 26, 1885.

TO MESSRS. JONA. AUSTIN. }
S. B. DOLE, } *Committee Planter's Labor and Supply*
W. R. CASTLE. } *Company, Honolulu, H. I.*

GENTLEMEN : In reply to queries in an undated communication received from you yesterday, I have the honor to say, that your series of questions conveys the impression of a grave misunderstanding on your part of the character and scope of the circular of the 10th inst., addressed by me to Planters.

The purpose of the Board of Immigration as set forth in the circular was to establish agencies of inspection and interpretation, to obtain information, to create a better understanding and by proper inquiry and discussion to harmonize the relations between the planter and the ignorant immigrant laborer. This action of the Board was dictated by a clear and settled policy of His Majesty's Government. The object of the Government as set forth in the language of the circular was to obviate as much as possible any recourse to diplomatic intervention, and to avoid an appeal to the Courts of law, without however any limitation of the rights of litigation. This statement of the aim of the Government as set forth in the circular will be a sufficient answer to your queries from 1 to 7 inclusive.

In question No. 8, you suppose a case of delay, and of deferred adjustment which might arise under any circumstances whether depending upon the action of a court of law or a commission of inspection and enquiry.

You make further enquiries as to whether the duties of inspector and interpreter, may or may not be united, in respect to the organization of the work of inspection and as to numbers, instructions and location of inspectors, which are matters of detail in the action of the Board of Immigration that do not call for mention at this time.

Gentlemen, I trust that you will appreciate that the Government, in respect to the matter in question, has only one object in view—that is—to increase the Nation by a voluntary immigration, of a friendly people, who, coming to labor in these Islands with a view to better their condition, will be enabled to do so through the enlightened and humane policy of the Government and the Planters.

I have the honor to be, Gentlemen,
Your Obedient Servant,

CHAS. T. GULICK, *Minister of Interior.*

President of the Board of Immigration.

Regretting my inability to place before you more detailed information on this subject, I lay before you all of the facts which are in the possession of the Trustees of the Company.

AN AGRICULTURAL CHEMIST.

This is a subject which has frequently been under consideration by the Company. The services of Prof. L. L. Vanslyke, lately Professor of Chemistry at Ann Arbor, Michigan, have been secured by Punahou College to take charge of the department of chemistry at Punahou. Prof. Vanslyke's services will be available to planters for the purpose of analyzing soils and other matters of like nature.

Dr. G. Martin, lately acting as chemist at Spreckelsville, has also established himself in Honolulu, and offers his services to the public.

THE NEW ORLEANS EXPOSITION.

The Hamakua Planters' Association having commissioned Mr. J. W. Marsden to visit Jamaica for the purpose of obtaining mongoose, at their suggestion the Company appointed him as its representative at the New Orleans Exposition, Dec. 22, 1884.

Mr. Marsden's mission was in every way a success, he having obtained all the mongoose required, and also a large number of valuable seeds and plants, an enumeration of which, and also his report upon the Exposition has been published in the *Planters' Monthly*. He has also handed in a valuation upon his observations in Jamaica which was too late for the last *Monthly* but will be published at an early date. He has also in course of preparation an article upon rum manufacture in Jamaica.

LIQUOR LICENSES.

It having come to the knowledge of the Trustees that the Government contemplated issuing licenses for the sale of liquor in the out districts of the country, a meeting of the Trustees and of such members of the Company as were in town was called March 23rd.

The unanimously expressed opinion was that the sale of liquor in the vicinity of plantations would prove detrimental to efficiency and discipline. It was not considered that a protest against issuing licenses would be of any avail as the government is not in the habit of shaping its action by the wishes of the governed; but it was thought best to place the Company

on record as wholly opposed to the traffic, and in accordance therewith a protest was addressed to the Minister of the Interior, requesting that no further licenses be issued for reasons therein given, which was published in the *Planters' Monthly*.

CO-OPERATIVE LABOR.

On the 18th of November, 1884, M. Canavarro, Portuguese Consul, addressed a letter to the Company, stating that he had many applications from immigrants for information as to the possibility of obtaining lands which they could cultivate on shares, and asking what the views of planters were on the subject.

A circular letter was addressed to planters inquiring as to their opinion upon the subject. Replies were received from only four planters, three being adverse, and one, Dr. Thompson, of Kohala, was favorable.

The subject is one that deserves more consideration than it has received. The Portuguese have been brought here at heavy expense to the planters. They are an industrious people anxious to better their condition, and to make more than day wages. Unless they can do so there is danger they will go elsewhere. This would result in a renewed expense in bringing new laborers to take their places. It would be better to spend some money to keep men who are familiar with the climate and work than to spend it for bringing green hands into the country.

THE PLANTER'S MONTHLY.

The *Planter's Monthly* has been published each month during the year; the day of publication having been changed however from the 1st to the 15th, owing to the difficulty occasioned by the number of publications appearing on the first. The planters have contributed more liberally to its columns than in any previous year of its publication, with corresponding benefit to its readers. As a medium of exchange of opinion and views between planters, the Monthly is accomplishing its purpose.

LIST OF STOCKHOLDERS.

A few of the Stockholders have withdrawn from the Company during the year. The following is a list of the present stockholders, showing the number of shares held by each.

Alexander & Baldwin.....	600	Cooke, C. M.....	5
Austin, S. L. & Co.....	500	Cartwright, A. J.....	5
Austin, Jonathan & Co.....	250	Cummings, W. H.....	5
Alexander, S. T.....	5	Dillingham, B. F.....	3
Afong, C.....	300	Dole, S. B.....	5
Atherton, J. B.....	5	Eleele Plantation Co.....	500
Adams, E. P.....	5	East Maui Plantation Co.....	250
Atkins, R. H.....	5	Glade, J. C.....	5
Atwater, W. O.....	5	Goodale, Warren.....	5
Baldwin, H. P.....	5	Grant & Brigstock.....	100
Bailey, Wm. H.....	5	Grove Ranch.....	250
Bailey, Ed. H.....	5	Gurney, Jos. F.....	5
Bailey, E.....	5	Hawaiian Agricultural Co.....	1000
Beecroft Plantation.....	100	Hitchcock & Co.....	400
Bishop, C. R. Hon.....	5	Halstead, R.....	200
Bond, E. C.....	5	Honomu Plantation.....	150
Brewer, W. P. A.....	5	Hind, Robt. R.....	450
Castle, S. N. Hon.....	5	Hall, W. W.....	5
Castle, W. R.....	5	Hartwell A. S.....	5

Honokaa Sugar Co.....	400	Princeville Plantation.....	500
Hobron, Thos. H.....	5	Parke, W. C.....	5
Horner, J. M.....	5	Paty, John A.....	5
Horner, W. Y.....	5	Pacific Sugar Co.....	300
Hanneberg, A.....	5	Purvis, W. H. & Co.....	100
Holmes, G. F.....	190	Rickard, W. H.....	100
Hart, Chas. F.....	100	Rowell, W. E.....	5
Hana Plantation.....	500	Richardson, J. L.....	5
Haiku Sugar Co.....	1000	Renton, Jas.....	5
Hamakua Mills.....	150	Ross, John.....	5
Hoffschlaeger & Co.....	5	Smith, A. H. & Co.....	100
Isenberg, Paul, Hoh.....	1000	Smith, J. K. Dr.....	2
Jones, P. C.....	5	Smith, W. O.....	5
Kay, T. S.....	5	Smith, W. E.....	5
Kaneohe Plantation.....	125	Smith, A. H.....	5
Kennedy, C.C.....	5	Spalding, Z. S.....	500
Kilauea Sugar Co.....	500	Schaefer, F. A.....	5
Kohala Sugar Co.....	600	Spencer, Jas. G.....	2
Kinnersley, C. S.....	200	Soper, Wright & Co.....	125
Kipahulu Mill.....	50	Union Mill Co.....	5
Kipahulu Plantation.....	200	Wilcox, G. N.....	350
Koelling, Chas.....	3	Wilcox, A. S.....	250
Lidgate, W. & Co.....	300	Wright, John N.....	5
Lycan, E.....	5	Whitney, H. M.....	5
Makee Sugar Co.....	500	Wailuku Sugar Co.....	1000
Macfie, R. A. Jr.....	5	Waiakea Mill Co.....	200
Marsden, Jos.....	50	Willfong, G. W. & Co.....	95
Mist, H. W.....	5	Williams, G. C.....	5
Notley, Chas.....	200	Walker, T. R.....	5
Ookala Sugar Co.....	300	Welch, And.....	5

DISPOSITION OF THE SUGAR CROP.

The new contract by which the bulk of the crop has been sold to the new Refinery instead of to Mr. Spreckels, although not negotiated by the Company involves the interest of most of the stockholders. It is a most important measure, and it is hoped that it will be of benefit to the planters.

Respectfully submitted,

L. A. THURSTON, *Secretary, pro. tem.*

REPORT OF THE COMMITTEE ON LIVE STOCK.

HONOLULU, OCT. 5TH, 1885.

To the President and Members of the Planters' Labor and Supply Co.

GENTLEMEN,—Your Committee on Live Stock beg to refer you, and all the readers of the PLANTERS' MONTHLY who take an interest in stock raising, to the very full, able and instructive reports made at the annual meeting of this Company in 1882, 1883 and 1884. Though they may have been read by many if not all of our people, who are specially interested in this laudable and profitable industry, yet they contain *so much* valuable information, bearing upon the introduction of horses and cattle into these islands; the course of improvement of the stock, through the importation and infusion of new blood, from selected strains of well bred animals; valuable suggestions about feeding; raising improved fodder; treatment of diseases; importance of guarding against contagious diseases, by the enforcement of the quarantine laws; it seems to be our duty quite as much to refer you to what has *already* been written as to attempt to make additions thereto. We wish to call special attention to the Appendix to the report of 1883, copied from the Wyoming Statutes, which laws were made for the protection of stock growers in that territory.

It may be seen from the statistics gathered from our Custom House records, covering a period of nine years and nine months, ending October 1st, 1885, that an effort has been made during these years to improve our stock.

From January 1st, 1876, to December 31st, 1880, twelve stallions were imported at invoice cost of \$6,050, an average of say \$500 each. During the same period 62 bulls were imported at an average cost of say \$119 each. From January 1st, 1881, to October 1st, 1885, a term of four years and nine months, 19 stallions were imported at an average cost of say \$663 each, and between the same dates 106 bulls were landed here at an average cost of \$137 each. The invoice value of the stallions ranged from \$150 to \$2,000. Bulls were entered at from \$50 to \$619.

The invoice value of all live stock imported into this Kingdom during the five years ending December 31st, 1880, is shown to be \$203,193.48 and for four years and nine months ending October 1st, 1885, \$391,912.05 making a total of \$595,105.53. The importation of 1797 mules at an invoice value of \$210,634, and 1,029 horses and mares at a cost of \$194,276, making a total value for these two classes of useful animals of \$404,910, to supply our necessities during a term of less than ten years, suggests possibilities which ought to encourage and stimulate stock raising to an extent, at least commensurate with the demand of our home market. It will doubtless be a matter of interest to our stock raisers to know that an offer was received by a gentleman in this city, from responsible men in San Francisco, to purchase 400 carcasses of beef and 1000 carcasses of sheep per month; the meat to be shipped by steamer in refrigerator rooms, one half the quantity to be sent by each bi-monthly steamer. The price offered is said to be more favorable than is realized in the home market. Our stock of beef and mutton not being sufficient to supply such a demand outside of our own market, the offer was not accepted.

Table of Imports of Live Stock made up from Custom House Records for
 nine years and nine months.

	1876.		1877.		1878.		1879.		1880.		Total No. Head.	Total Value.
	No. Head.	Value.	No. Head.	Value.	No. Head.	Value.	No. Head.	Value.	No. Head.	Value.		
Horses and Mares.....	1	\$ 250 00	22	\$ 6,615 00	31	\$ 6,593 55	44	\$11,718 20	148	\$19,930 70	246	\$ 45,107 45
Stallions.....	2	1,283 57	1	500 00	5	1,567 00	2	1,400 00	2	1,300 00	12	6,050 57
Mules.....					127	8,387 68	485	41,095 87	384	37,454 34	996	86,987 89
Cows and Calves.....					29	2,500 00	161	14,368 00	123	7,234 71	313	24,102 71
Bulls.....	1	619 62	5	1,215 00	2	350 00	11	873 00	43	4,317 85	62	7,375 47
Hogs.....			5	10 40			328	3,886 52	980	7,362 81	1313	11,259 73
Sheep.....			1020	1,530 00	9	450 00					1029	1,980 00
Goats.....			7	1,050 00	3	375 00	2	204 20			12	1,629 20
Rams.....	102	7,782 20	99	4,247 70	19	850 00			46	1,650 00	266	14,529 90
Jacks and Jennys.....			5	1,780 56			5	2,440 00			10	4,220 56
Total.....		\$ 9,935 39		\$16,948 66		\$21,073 23		\$75,985 79		\$79,250 41		\$203,193 48

From January 1st, 1881, to October 1st, 1885,—4 years and 9 months.

	1881.		1882.		1883.		1884.		1885.		Total No. Head.	Total Value.
	No. Head.	Value.	No. Head.	Value.	No. Head.	Value.	No. Head.	Value.	No. Head.	Value.		
Horses and Mares.....	137	\$21,566 19	187	\$39,006 00	263	\$48,430 00	165	\$34,150 00	31	\$ 6,017 00	783	\$149,169 19
Stallions.....	4	2,250 00	7	3,800 00	2	1,500 00	6	5,050 00			19	12,600 00
Mules.....	275	38,996 90	96	13,924 00	236	38,104 50	153	26,926 00	41	5,745 00	801	123,696 40
Cows and Calves.....	144	8,809 73	136	8,002 50	114	6,142 00	72	6,060 00	14	1,304 00	480	30,318 23
Bulls.....	19	4,585 00	30	1,855 00	23	2,565 00	24	5,015 00	5	525 00	106	14,545 00
Hogs.....	882	7,080 08	534	4,501 91	990	9,862 22	1587	13,064 00	2112	17,232 60	6105	51,740 81
Sheep.....	12	300 00	24	810 00	93	1,208 00	70	349 50			199	2,667 50
Rams.....	20	1,500 00	32	958 92	20	712 00	16	530 00			88	3,700 92
Goats.....	36	252 00	4	122 00	2	100 00					42	474 00
Jacks and Jennys.....					3	800 00	3	2,200 00			6	3,000 00
Total.....		\$85,339 90		\$72,980 33		109,423 72		\$93,344 50		\$30,823 60		\$391,912 05

Your committee have made an effort to ascertain the annual consumption of beef and mutton on each of the four largest Islands of this Kingdom, and the following is the result, which we believe is a close approximation to the exact amount :

Hawaii	Beef,	say	4,000	Carcases
"	Mutton	"	1,000	"
Maui	Beef	"	3,500	"
"	Mutton	"	2,000	"
Oahu	Beef, Veal	"	6,500	"
"	Mutton	"	8,500	"
Kauai	Beef	"	2,000	"
"	Mutton	"	200	"

Making a total of 16,000 carcasses of beef and 11,700 carcasses of sheep.

The average number of cattle hides exported during ten years ending October 1, 1885 are 23,000 per annum. If we allow 4,000 head of cattle more per annum for consumption than have been reported to us, making the total number killed for beef 20,000 head per annum; the export of hides show that 3,000 head are killed annually for their hides and tallow. We make the following estimate of the value of beef and mutton consumed annually in the Kingdom.

Say 20,000 head of cattle @ \$25.00.....	\$500,000 00
" 15,000 " " sheep @ 3.50.....	52,500 00
Value of cattle hides exported annually 23,000 @ \$4.00.	92,000 00
" " goat skins " " 32,342 .55.	17,788 10

From a careful examination of the tax returns we are able to make the following report of the number of head and average value of various classes of live stock as returned for taxation for the years of 1879 and 1884.

TABLE SHOWING THE NUMBER AND VALUE OF VARIOUS CLASSES OF LIVE STOCK IN THE KINGDOM, AS RETURNED FOR TAXATION, FOR THE YEARS 1879 AND 1884.

The Planter's Monthly.

	OAHU.		KAHOOLAWE & MAUI		MOLOKAI.		LANAI.		HAWAII.		KAUAI.		NIIHAU.		TOTAL VALUE	
	NO.	VALUE.	NO.	VALUE.	NO.	VALUE.	NO.	VALUE.	NO.	VALUE.	N O.	VALUE.	NO.	VALUE.	NO.	VALUE.
1879.																
Horses.....	6464	\$ 646,400	6340	\$ 190,200	1146	\$ 28,650	145	\$ 3,625	12259	\$ 307,770	.....	.....	.....	.....	26354	\$ 1,176,645
Cattle	15261	228,915	14353	148,530	2455	24,550	100	1,000	47870	478,700	.....	.....	.....	.....	79539	871,695
Mules.....	58	5,800	82	8,200	.....	.....	.....	.....	826	62,025	.....	.....	.....	.....	966	76,025
Sheep.....	3000	3,000	8556	6,417	13500	10,125	12600	9,450	36070	27,052	.....	.....	.....	.....	73726	56,044
Goats.....	.....	.....	620	310	.....	.....	200	100	32000	16,000	.....	.....	.....	.....	32820	16,410
Jackasses	1	75	.....	.....	.....	.....	.....	.....	108	5,400	.....	.....	.....	.....	109	5,475
															213514	\$ 2,202,294
1884.																
Horses.....	4597	\$ 574,625	5339	\$ 213,560	942	\$ 37,680	164	\$ 6,560	15,670	\$ 783,500	3812	\$190,600	116	\$5,800	30140	\$ 1,812,325
Cattle.....	26841	805,230	18647	341,647	5393	107,860	60	1,200	51,831	1,554,930	19625	588,750	216	6,480	117613	3,406,097
Mules	237	29,625	516	51,600	14	1,050	.....	.....	1,973	197,300	202	15,150	.....	.....	2942	294,725
Sheep.....	102	153	5702	5,702	16600	16,600	30000	30,000	27,230	27,230	3549	3,549	33500	38,500	121683	121,734
Goats.....	400	400	3000	1,500	200	100	1000	500	17,240	8,620	20	10	.....	.....	21860	11,130
Jackasses	1	50	1	50	1	50	.....	.....	275	13,750	.....	.....	.....	.....	278	13,900
															294516	\$ 5,659,911

It has been suggested that 25 per cent. would not be too much to add to the returns to show the true number and value of the stock. But the returns for goats for 1884 for the Kingdom with 25 per cent. added, would show 23,325. By reference to Custom House returns of exports we find the average annual export of goat skins for say 10 years ending October 1st, 1885, to have been 32,343. We are informed that the *breed* of these animals has been greatly improved, which perhaps accounts for the large shipment of skins it has been possible to make from these few goats.

If the effort made to improve the other classes of stock has resulted as favorably, stock raising bids fair to eclipse every other known industry. After the exhibition of goat farming we conclude not to add or subtract any thing from the returns, as made and sworn to.

The following is the increase and decrease in the number of heads of stock on the Islands during the past five years : Horses, increase, 3,786. Cattle, increase, 18,074. Mules, increase, 1,976. Sheep, increase, 47,957. Goats, decrease, 10,960. Jackasses, increase, 169. (These figures do not include the Islands of Kauai and Niihau as the returns from these two Islands for the years previous to 1884 were not obtainable in time for the preparation of this paper. The actual number of head of stock in those two Islands, reported in 1884, was as follows: Horses, 3,928. Cattle 19,841. Mules, 202. Sheep, 42,049. Goats, 20).

During the five years including 1884 there was imported into the Kingdom 921 horses, 744 cattle, 1,144 mules, 1,313 sheep, and 42 goats. These numbers subtracted from the increase given above reduce the domestic increase to the following figures : Horses, 2,865. Cattle, 17,330. Mules, 832. Sheep, 46,644. Jackasses, 169. Total value, \$440,338.86.

The increase in the value of the live stock on the Islands, (excepting Kauai and Niihau) is	\$2,608,778 00
From which if we deduct (value of imported stock).....	440,338 86

We have left the sum of\$2,168,439 14
 Representing the increased value of our domestic stock during the past five years. The increase in the value is more largely due to the enhanced value of the stock than to the increase in numbers as will appear.

At the request of your Committee Dr. James Brodie has favored us with the following report upon the disease which has destroyed a very large number of horses and mules, resulting in a loss to this country of probably not less than \$75,000.

GLANDERS.

A few remarks with reference to the disease "Glanders" in horses, and also to what has been accomplished within the past year in this kingdom may be instructive and of interest to your readers. It would occupy entirely too much time and space in this article to enter fully into all the various forms, symptoms, &c., of this disease, but I want to correct the one prevailing erroneous idea which I find to be so prevalent, and which may be said to be the principal cause of the propagation and spread of the disease, and its attendant loss. It appears to be the general opinion that a horse affected with "glanders" must necessarily become very badly diseased in a very short time and die; whereas, on the contrary, in horses the disease almost always assumes the chronic form and they may live for years, looking in fair condition, eating well, and if properly cared for may do considerable work, and yet at the same time be a source of danger, and the means of spreading and propagating the disease from which they

never recover. Horses suffering from chronic glanders of course are liable at any time and in fact they all do finally, if not otherwise destroyed, take the disease in an acute form, from which they may recover again and assume the chronic form or else die.

In this chronic form the animal is generally said to have, only a cold or oozena, catarrh, or nasal gleet, but the greatest caution should be exercised in having anything to do with an animal effected in such a way, and especially when we know that glanders exists in a community or district, also such cases should be isolated until it is proved satisfactorily that it is not glanders. A form of glanders which is even more difficult to detect than this is the Pulmonary form in which the disease is confined exclusively to the lungs, the affected animal showing no other symptom than a chronic cough, and yet the animal sooner or later will break out in an acute form from the nostrils, and would require immediate isolation from healthy stock.

In this way we can account for the sudden outbreak of the disease, when it was supposed to be extinct, and when some would say that it had originated spontaneously; but by having a correct knowledge of the subtle nature of the disease, and a close supervision kept on all horses and the immediate isolation on the first appearance of suspicious symptoms it is only a matter of time before the disease will become extinct. The characteristic symptom of glanders and the one by which we can distinguish the disease without doubt from others which closely resemble it, especially in an acute form, is the appearance of chancres or ulcers on the membrane covering the inside of the nostrils. But even these may be situated so far up the nostrils, that they cannot be seen. In these cases, investigation into the origin of the suspicious symptoms, and as to whether or not the animal had been in contact with affected ones, sometimes is sufficient to lead to a correct diagnosis, otherwise we have to isolate the animal and await further developments.

Mules invariably take the disease in an acute form and die in from four to fifteen days, from the appearance of the first symptoms; and if horses would only become affected in the same form, and no other, it would be comparatively easy to stamp out the malady.

In Honolulu and vicinity, since December of 1884 up to date 97 horses and 3 mules were condemned and destroyed being glandered. Previous to this date as near as could be estimated about 40 horses had died or were destroyed with this malady. Within the last three months the number destroyed was comparatively very small as compared with the preceding month.

On the various plantations and stock ranches of the Islands the loss from glanders has been small as compared with Honolulu. This is principally owing to the fact that on a plantation, an individual or company generally owned a large number of animals and if an outbreak occurred separation and isolation of affected animals was resorted to at an early date, and the malady stamped out, whereas here, a great many, owned perhaps only one or two animals and if they became affected, they had nothing more to lose, and kept on working the diseased animal, and at the same time spreading the disease.

As to the value of a glandered horse, when we consider the contagious nature of the disease not only to healthy horses but to mankind, and its utter incurability they must be considered worse than valueless in fact absolutely dangerous and expensive property to possess. If it should become necessary to destroy healthy animals, which had been in contact with diseased ones, as is done in certain other diseases of animals; to ar-

rest the spread of the disease their compensation should be resorted to, I sincerely trust that all interested parties in this Kingdom will render every assistance possible in helping to stamp out this disease, and it is in proportion to the prevention and precautionary measures that are adopted in isolating all suspicious cases, until they either recover or are destroyed that the desired result will be obtained.

JAMES BRODIE, V. S.

The experience we have had with glanders, and the price paid for the knowledge we now possess relating to that scourge, ought to teach us to guard against a possible recurrence of that disease, or the introduction of any other of the many terrible diseases which prevail among stock in other countries. Contagious Pleuro Pneumonia of cattle if once introduced here, would be as *sure* destruction to our thriving herds, as the Asiatic cholera would be to our people if brought among them. We have been "*forewarned*" let us in the future see to it that we are "*forearmed*." Complaints are made of the cruel treatment which the laboring class of our valuable stock, receive at the hands of teamsters and others who work cattle, horses and mules upon some of the plantations. The day has passed when *any man*, in *any community* worthy to be called *civilized*, can maltreat or misuse a dumb brute even though *he* be the boastful owner, without violating a law which ought to be strict to mark and swift to punish. More will be said upon the subject in the future.

In closing your committee wish to express their sense of gratitude to the Collector General of Customs and the Registrar of Public Accounts, for their kindness in furnishing statistics used in this report.

Respectfully submitted,

B. F. DILLINGHAM,

Chairman of Committee on Live Stock.

REPORT OF THE COMMITTEE ON CULTIVATION.

To the President and Stockholders of the Planters' Labor and Supply Co.

This subject may well engage our attention, as it is the point upon which mainly turns the profit or loss in sugar production.

The raising of better crops with the same labor, or the same crops with less labor, is a thing worth striving for.

It is well known that there have been great strides made in the perfection of mill machinery, for cheapening the manufacture of sugar the past few years, while but little, if any in the cultivation of cane. The same stubborn facts still confront the planters. The soil yields no better, but rather wants feeding; the weeds grow with the same vigor; work animals sicken and die; tools wear out and break; rats, borers and other pests are on the increase to destroy crops; awkward and shirking help is still costly and annoying; a ton of cane is just as heavy to transport to the mill now, as it was years ago, and sugar brings a less price. So persistent labor, constant vigilance and the "git up and git" principle has to be exercised on the plantations early and late, all the year round, otherwise the planter will find himself coming out of the "little end of the horn." Your committee are not able to report any new mode of cultivation. If they could, no plan would be applicable to all localities, or acceptable to all planters. Hence we will not attempt any elaborate report, but confine ourselves to a few details which we think would be advantageous to some planters if adopted. And we will urge a more thorough use of well-known advantages which some planters now neglect, and attribute their want of thrift and slovenly cultivation, to "shortness of help," "bad luck," "poor seed,"

“poor land,” in fact charge their failure to one or many causes, rather than to their own mismanagement, which may be the true cause.

PREPARATION OF SOIL.

All planters admit the wisdom of a thorough and timely preparation of the soil before planting, if the best results are to be expected.

We consider twice plowing and twice harrowing, IF WELL DONE, a sufficient preparation for the furrow plow to follow.

If however a grass sod or trash is turned under at the first plowing, a sufficient time should elapse to allow the trash to decay, before the second plowing should be done.

The second plowing should be done just before the planting, so as to have no weeds growing while the planting is being done. All admit the advantage or utility of the furrow plow, in making seed furrows and ditches, rendering great assistance by enabling the planter to put in his seed in the bottom of a deep furrow, which we think essential to insure good results.

There is some difference of opinion as regards the distance cane rows should be apart, and different soils and different elevations seem to justify such differences. The distance most favored is from 5 to 6 feet from centre to centre.

If they are less than 5 feet there is scant room for advantageous cultivation and otherwise caring for the cane, particularly if ratoons are raised as they spread early, which makes it difficult to get the cultivator through, or to keep open ditches where irrigation is required.

If the rows are more than 6 feet apart there seems to be a waste of land—too much space for weeds, and if the furrow plow varies the spaces between the rows, as is most likely, twice passing through with the cultivator will not cover all the land, and the more expensive hoe has to complete the work. In making the seed furrow different modes are practiced. Most planters proceed with a heavy team and make the furrow at one operation. This has the advantage of expedition, but the disadvantage of leaving clods and sods that are thrown out by the plow along the edges of the furrow, which tumble back upon the cane, filling the ditch, and must be removed by hand if at all.

For reasons given below, we prefer to first make a furrow with a 12 inch plow, then enter this furrow with a peculiarly constructed double V scraper and with it push the sides of the furrow right and left, mashing the clods and sods or crowding them into the centre between the rows, smoothing the land and covering all small weeds that may have escaped destruction up to this time, thus saving perhaps a first hoeing. Then enter with the double furrow plow drawn by 5 horses or mules hitched abreast, which makes an ample ditch or furrow leaving the land between the furrows quite level and in good condition for a cultivator to follow, without filling the furrow.

Some plant the seed without further preparation than is made by the double furrow plow, but we have found it advantageous to first run a 1 horse subsoil plow in the bottom of the furrow just ahead of the planters, loosening the soil from 2 to 6 inches, which makes a nice fresh seed bed and enables the cane to be planted not in, but under the bottom of the furrow, in mellow soil.

SEED.

“Your land sow with the best of seed.” And plenty of it, is about all we feel competent to recommend under this head. If any planter knows which or what is the *best* cane seed, we would be pleased to take a lesson.

We have used one year old plant cane, first and second ratoons, tops from old cane and lalas, and all did well with slight exceptions. No doubt had we known which was the *best seed* and always planted it, the results would have been still better. From some recent observations we prefer tops from old cane, for the reason they are *sure* to grow and borers are not likely to be planted with the seed in the new field. We would like to know how to improve cane seed as well as how to select the best. If any of the members will be kind enough to instruct us we will be thankful. If it was the seed of corn or potatoes or wheat or even the improvement of live stock we would not plead ignorance.

The Germans, we understand, by a wise and persistent selection of the best sugar-producing beets for seed, have increased their yield of sugar from 7 per cent. Baume to 15 per cent. Such improvement is wonderful to think of. But the improvement being in the beet, it is not much comfort to us here, except by way of encouraging us to strive also to improve; no doubt if we could once *get a start*, it would be done. Can't some one tell us how to start?

TIME OF PLANTING.

We once questioned the late Mr. Unna of Haña. "Which month do you find the best for planting?" He answered, "May, June, July, August, September, and *especially July*, emphasizing the last two words. This answer was from a gentleman of some 20 years experience in cane planting, and we see no way to improve this answer, only to qualify it, by saying, that planting to be done below 700 feet elevation, should be done in July if possible. August and September planting may be good, but will not equal that of July, and cane planted in October will fall short in its yield sufficient to pay the expense of raising a July crop. But as elevation increases we would prefer planting before July, and at an elevation of 1200 or more feet, we would think May none too soon.

It is presumed every planter does his best to put in his crop in the most thorough manner, in preparation of soil, selection of seed and time of planting. Now comes the question of

AFTER CULTIVATION.

And here we think there is more disagreement, blundering, labor and money unnecessarily wasted than there is in any other department upon the plantation.

We think *better* and *cheaper* crops could be raised if a different course of after cultivation was more thoroughly and persistently pursued. We believe the hoe is used too much and the cultivator too little. On some plantations it is hoe, hoe, hoe; we say cultivate, cultivate, weeds or no weeds, ditches or no ditches, cultivate, and only use the hoe where the cultivator can't reach. If hoeing was as cheap as cultivating, the cultivator should still be used, from the fact that it loosens up the soil as well as kills the weeds, a thing quite essential to assist the growing cane. The finely pulverized soil serves as a mulch to the roots and prevents a too rapid evaporation of the moisture, hence a better crop of cane can be raised where the cultivator is liberally used, than where the land is only scraped over with the hoe. And *we* think a man that uses a hoe when he could use the cultivator, is on the foggy list and wants civilizing, and the man that will consent to do the work of *one* man with the hoe, when he could do the work of ten men with a cultivator wants "reconstructing." One says, "I can't cultivate, it will spoil my ditches." You can, emphatically *you can* and to a great advantage to both your crops and pockets. It is known to many that the most difficult system of ditches

for the use of the cultivator, was adopted at Spreckelsville when raising its first crops, notwithstanding which we used a cultivator to good advantage, as we loosened up the soil, killed the weeds and scraped out all the ditches at an expense of \$5 per acre, while our neighbor paid \$20 per acre to have his scraped over with a hoe, and didn't get the work done until the weeds blossomed and his cane stunted; and with no other difference than the cultivator, our cane yielded one ton of sugar more per acre. When called to account as to why he had let the weeds get the control, he said, "I hadn't men enough, I told them long ago I wanted 100 more." Our opinion then was and is now, that with less men and a few cultivators he could have cleaned his cane in good season and as cheaply as we did ours which would have resulted in another ton of sugar to the acre for him. No one among the truck gardens of New Jersey that supplies New York and Philadelphia with fruits, berries and vegetables would think of holding his own among his fellows if the cultivator should be denied him. His corn, potatoes, beans, berries and almost everything is planted in long straight rows, convenient for cultivating without the use of the hoe. No laborer would be considered first class there that could not put in the crop and keep the land in good order and free from weeds without the use of the hoe. A weed may occasionally want pulling.

We would commend the Jerseyman's way of planting with cultivation in view, to every planter. Never let weeds grow large; put your cultivator through as soon as the cane begins to make its appearance above the ground. Large weeds though dead are a discredit, and live ones a disgrace to a superintendent. Killing weeds when small is a "stitch in time." Keeping the soil loose and fine on top by cultivation is in a measure both food and water for the crop. It is "covering the cistern to save the water." As there will be less evaporation from the soil, hence more water is left for the use of the cane. Aside from what we have seen and what we know about the benefit of thorough and timely cultivation, we will cite one case out of many that have come to our notice.

Mr. Shinn, a prominent nurseryman of California, was visited by a friend in the fall, after a long dry summer, who in looking around saw a number of orchards, in all stages of unthrift and also some well appearing and one *very fine*, and he asked Mr. Shinn, "Why the orchard over there looked so much better than any of the rest." Mr. Shinn said, "That is a mystery; I sold Mr. Nicholas those trees and they were no better than those of his neighbors, and his land is no better; I attribute the thrift of his orchards to his cultivator, for to my certain knowledge, he has gone through those trees with his cultivator once every week all summer." Mr. Nicholas cultivated to benefit his crop, not alone to kill the weeds. Such confidence have we in the benefit of cultivation that the old saying seems quite true, viz: "Growing crops like the smell of freshly stirred soil." In Java we understand laborers' wages are 10 cents per day and board themselves, and yet it costs \$100 to produce an acre of cane. Can this be accounted for in any other way than by attributing it to their old foggy, primitive way of working. They must work with but little intelligence, no skill or scientific tools, irrigate their cane with water dipped up with buckets, etc., so the account reads.

The best and most economical way that we have found to care for cane the first six months after planting, is, to commence cultivating when the young cane first begins to come up, and about the time it is all up go over it again with the cultivator, going around each row and each time roll down a *little* fresh soil around the cane and so continue until the cane

is too large to allow of any further cultivation. One cultivator is ample for 60 acres, rows $5\frac{1}{2}$ feet apart. During the season, the soil thrown out from the seed furrow will work back leaving the land about level, at the end of the season, and the soil will be loose and freed from weeds with a very little hoeing. (The filling up of the furrows is only applicable to rainy regions.)

This course has been pursued this past year at Kukaiuu with gratifying results. The cane appeared so tickled with its treatment that it seemed to laugh with satisfaction, judging from its appearance and growth all through the year, and the superintendent was so well pleased with its behavior and the small expense incurred in its care the first six months of its growth, that he has pursued the same course with this year's plant, and with promise of like success.

As the infant delights in the nourishment, caresses and loving hugs from its mother, so young cane enjoys the close contact and gentle pressure of loose, freshly stirred soil and in no stage of its growth does it object to quit a hill above its roots. What it does resent is to have all loose soil scraped clean from around the hill, or to be choked with weeds.

The difference in labor alone, between cultivating and hoeing is very marked—five men to one acre, or one man to four acres is such a difference, as no planter is justified in slighting, and then, if, as we claim, the cane is much benefitted by liberal cultivation, the advantage is hard to estimate.

J. M. HORNBER,
Chairman of Committee.

SUPPLEMENTAL REPORT ON CULTIVATION.

Since sending our Report to the Secretary, a few thoughts have suggested themselves as appropriate to accompany the Report.

It will be observed that the report urges quite strongly cultivation after planting.

But in order to realize the full advantages claimed, two things are essential to success, namely, a good cultivator, and its skillful use.

"Never shave with a dull razor" is applicable to all tools; the best should be selected, and the best of its class is the cheapest. The cultivator should be strong, screwed tight, and sharp. A poor tool in bad condition, and in the hands of an unskilled man, will do poor work. We know of no cultivator on sale in these islands that we consider 1st-class for use in our cane-fields. The cultivator called the "Horse Hoe," with some changes that are easily made, we consider the best. The necessary change is to substitute the V tooth in place of the plows and diamond teeth. This change makes it a very effectual tool, both to loosen the soil and cut the weeds.

Mr. Frank Austin has lately invented a cultivator which combines, in a measure, the advantages of this changed "horse hoe;" and for cutting large weeds, or for use where ditches or furrows are to be kept open, it is its superior, we think; of this, however, we can only speak theoretically, not having had any large weeds to destroy, or furrows to be kept open since receiving the cultivator on trial.

SKILLFUL USE.

The skillful use of a tool is quite as important as the tool itself. We have seen planters set the cultivator at work without any apparent regard as to whether the cultivator was adapted to its work, or the workman understanding its use, or how to keep it in order; and the workman not

knowing what cultivation meant. His ambition seemed to be to please his employer by getting over as much ground as possible, having no thought of loosening the soil or killing weeds. One Portuguese man, after starting his mule in at the end of the row, was seen to hang the lines upon the cultivator and follow behind some ten or more feet, crack his whip, hal- lowing at his beast, righting up his cultivator if it fell over, and turning the rig at the end of the rows. He was apparently enjoying and no doubt congratulating himself on his skill in having taught both mule and cultivator to "go it alone." The mule moved steadily, but the cultivator bobbed and pitched along like a ship at sea, doing but little good.

We have seen a planter cultivate and *cultivate* until his land got so hard and weedy that *his* cultivator would do no good, and the plow had to loosen up the soil; after which the same worthless cultivator and im- perfect cultivation was continued as before, and with the same results, for when the cane got too large for further cultivation the soil had got again packed with the mules' tramping, and weeds were blossoming be- tween the rows. This kind of work is humbuggery; it is cultivation aimed at, but never performed; it increases labor and a demand for laborers, and injures the cane. Two men, two mules, and two cultivators at least, were required when one of each would have been ample—if the cultivator had been adapted to its work, and then skillfully handled.

Imperfect cultivation not only requires more men and mules, but extra hoers also, to complete the work. We think an employer does wrong to himself and other employers to allow his work to be done slovenly when it could be done more thoroughly with less labor if more painstaking and skill were used.

It may be thought nobody's business if one employs a surplus of labor; but we think, in the present state of the labor supply, it is every em- ployer's business, as it tends to make laborers scarce, and wages high. Since commencing this paragraph, our Chinaman have demanded two dollars per month more wages, as one plantation to the east and one to the west of us have offered them that much advance upon their present wages. Now, as harvesting and planting is over for the season, it must be *weeds* mostly that is troubling those plantations, and we venture to say that both are afflicted with poor cultivators, and still poorer cultivation.

We consider cultivation well done when the soil is loosened from one to three inches deep, and all weeds rooted up from row to row.

JOHN M. HORNER, Chairman of Committee.

J. M. Horner, Esq., Chairman Committee on Cultivation:

DEAR SIR,—In reply to your communication, I would say that as my experience of cane cultivation has been limited mostly to the Makawao district it would be well, perhaps, to simply give you our method of cul- tivation on the Paia Plantation, together with my observations on other plantations in the district, and deductions therefrom.

First. We plow the ground well when possible, and, in furtherance of this object, the Haiku and Paia plantations have joined in getting a steam plow, which has been used with satisfaction on the former plantation during the past season, although time enough has not yet elapsed to judge of its results in comparison with other plowing.

Our method of cultivation is by irrigation, hence our furrows must be comparatively level. So we have a man lay off level lines across the field from 30 to 60 feet apart, which are marked out with a one-horse plow.

These lines serve as guides to the furrowing plows, which come after

and cut the furrows from $4\frac{1}{2}$ to $5\frac{1}{2}$ feet apart, according to the nature and richness of the soil.

These furrows are deepened with a double mold-board plow, and care must be taken that the furrows are well made in order that there be no trouble with the watering afterwards, as any inequalities will cause "dry spots" to appear in the field later on if not attended to at the time of planting.

We make our water ditches through the field from 25 to 30 feet apart, according to the nature of the land, hill-sides requiring ditches nearer together than a gentler slope. This might seem a waste of ground, but our experience is that if they are wider than 30 feet we have trouble in getting the water evenly distributed, for as the cane matures it falls down, almost filling the furrows with stalks and leaves, thus retarding the flow of water in a long furrow, soaking the end next the ditch too much (which causes a waste of water—a serious matter to us, as our water supply is limited), and oftentimes not reaching the other end at all. Again, if the row is long, and the cane hard to walk through, the irrigator will often not take the trouble to see that the water reaches the other end, hence we have another cause of "dry spots," a source of annoyance to all managers of irrigated cane-fields.

The selection of good seed I consider as very important. And although the practice has prevailed, to a certain extent, on the islands of using volunteer or poor ratoons, furnishing but one or two cuttings for seed, yet it is being abandoned in this district, and the best cane used for that purpose, thus conforming with nature's teaching, which is that, other things being equal, the best and most vigorous seed will reproduce the best and most vigorous plant.

Locke, Wigner & Harland, in their "Sugar and Refining" say, p. 61, "None but the healthiest and most vigorous canes should be selected. Neglect of this point will result in disease and deterioration."

The sugar beet planters are alive to this subject, and by systematic selection have so improved the sugar beet that the best varieties yield juice equal to cane-juice, standing at a density of 10 Baume. On page 309 of the same authority, we see that "Experience has shown that roots rich in sugar transmit their richness to the next generation, whilst seed from light, ill-shaped roots poor in sugar, produce similar inferior roots."

Scrubby ratoons have been used for seed from motives of economy, but in fact they are dearer than good plant-cane, if one takes into consideration their impoverishment of the soil; loss of the land for pasturage during their growth; the number of extra men required to cut a given amount of seed from them; and more than all, the deterioration of the next crop on account of the poor seed.

And although such seed, if planted on rich land, and given good care, will produce a heavy yield, yet, I think that better seed with like conditions would produce a better crop.

If the best cane is used it does not take many acres to furnish seed for an ordinary plantation, as the ratio is only about one acre to twenty in cane yielding five tons per acre.

We endeavor to water the cane the same day that it is planted, and continue to irrigate it at least once every three days until it is well up, after which we water it once a week; then irrigate it on an average of about once in ten days throughout the season.

Of fertilizers, I would say that we have found bone-meal worthless. Experiments, however, are being tried on Grove Ranch Plantation with other fertilizers; but it is too soon, as yet, to judge of the results.

Our weeding is done with hand-hoes. We tried horse-cultivating, but gave it up, as it filled the furrows too much, causing a waste of water in irrigating.

The cane should be well stripped of dead leaves, and the authority quoted above says, p. 66, that this "cannot be too strongly insisted upon, as it admits to the plants that abundance of light and air which is absolutely essential to the production of a heavy crop of sugar." And realizing the importance of this, we endeavor to strip the cane before it lies down; but this is not always practicable. We strip the cane at least once, however, and although a second stripping would be beneficial, yet, considering the high cost of labor and the low price of sugar, we think that the sugar gained by the extra stripping in this district would not pay for the extra labor.

We stop irrigating about November 1st of the following year after planting, and grind from December to July.

In this district we have about given up raising ratoons, as we find that after harvesting our cane the nature of the soil is such that, with the irrigating, it packs hard, so that ratoons would not do well unless the ground should be loosened, which, if done, would destroy the symmetry of the furrows; and as the old roots protrude from the ground, it would take more water to irrigate a given number of acres of ratoons than it would take to irrigate the same number of acres of plant-cane—an object to us, for, as I have before said, our water supply is limited.

There are exceptions to the above, however, and we raise ratoons on our lower fields, where the nature of the soil is different, being of a black, sandy loam, which does not pack hard, as is the case with our red soils.

Yours truly,

E. M. WALSH.

Paia, October 9, 1885.

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REPORT OF THE COMMITTEE ON LEGISLATION.

HONOLULU, October 9, 1885.

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

SIR,—We have the honor to make the following report as a Committee on Legislation in connection with the requirements of the planting interest.

In considering this subject, we have endeavored to avoid all questions that do not clearly affect the said planting interest, as it is not our province to suggest any general legislation, nor such as would be in the special interest of commerce.

We are aware that frequent or unnecessary changes in the laws affecting commerce and agriculture are inconvenient and undesirable; and it is of far greater importance that the existing laws should be well understood, and well executed by those by whom and for whom they are administered, than that they should be made the subject of continual amendment and discussion by the Legislature.

Acting upon this principal, we are not prepared to advocate any fresh legislation upon the subject now under review; but we wish to bring very emphatically before the association the importance of seeing that the existing laws, and especially those in connection with the laborers, shall be carried out so well that they shall be held in respect by planters, by laborers, and by those nations and Governments upon whose good-will we so largely depend for our labor and supply.

We believe that the present laws are generally satisfactory, or we

should long ago have had remonstrances or refusals of immigration from some of those nations which have hitherto favored immigration to this kingdom.

We cannot, however, close our eyes to the fact that grave complaints have arisen, and have influenced other Governments adversely to our interests; and that, whereas, they were once disposed to encourage immigration, they are now inclined to look with suspicion upon the mode in which the immigrants are treated or neglected here.

It has long been the boast of this Kingdom that special confidence was reposed by the Great Powers in the administration of justice in our Courts; whilst many nations, far superior to this in size, population, and in antiquity of civilization, have had to submit to the establishment of Consular Courts, and other forms of foreign interference.

A few years ago a great cry arose against the importation of East Indian Coolies because it was alleged that Great Britain would demand the enactment of a law providing for the appointment of a British subject as protector of such immigrants, and upon that ground the scheme was cried down. Other Governments assented to their subjects coming here without enacting any fresh enactments; but, for some reason, steps are now being taken for the appointment of foreigners as protectors of immigrants, without even the formality of asking that laws be introduced to authorize such appointments.

Such a demand can only be regarded as a reproach to the nation, and the compliance with the demand as an act of humiliation. It is a virtual assurance that our reputation for the administration of justice in the local Courts is not as good as it was. We do not say that the Administration itself has deteriorated, but that it is clearly unequal to the demands now made upon it. And, as a matter of fact, we know that the construction of the Police and District Courts does not possess the confidence of those upon whose good report the judicial reputation so largely depends. And here we touch the point of legislation. The comparatively recent Act, which placed the appointment of magistrates within the possibility of corrupt nominations has inevitably lowered the standard of public confidence in the magistrates so appointed. The administration of law must be absolutely pure, and any attempt to bring the Courts of the Kingdom within the reach of political influences will necessarily dim the lustre and lower the standard of Hawaiian judicial purity. Neither Sovereign nor Minister, nor legislator can prevent this result, and therefore we earnestly protest against any tampering, however well intended, however apparently trivial, with the nomination of magistrates, or procedure of the Courts of Law.

We believe that a resolute attempt to retrieve and improve our damaged reputation, would yet be successful; but it must be resolute, and free from partisan strife. We recommend that a Royal Commission be appointed, to take into consideration the present status of the police and district courts, and to make such recommendations as shall seem best for the establishment of the said Courts on a basis that will give confidence to all classes in the Kingdom as well as to all other nations with whom we may come into contact.

Such a Commission should be composed of the ablest men that can be found without regard to party or politics, and if the Hawaiian Nation can continue to escape from the demand for the establishment of Consular Courts, such as have been imposed upon China, Japan, Turkey, Egypt, and other nations, and yet maintain the increased intercourse with foreign Governments and subjects that every year develops, it will be an

immense addition to the prestige which Hawaii has hitherto enjoyed, by international consent.

It is impossible to regard the recent action of the Japanese Government, however it may be softened and smothered by verbal explanations, as other than an indignity to the Hawaiian Nation; and compliance with the Japanese requisition is undoubtedly an admission on the Hawaiian side, of wrong and neglect. It may be to our interest and convenience to submit, but the demand and the submission do not redound to our national credit; and in the patriotic desire to see the National reputation placed beyond suspicion, we recommend that steps be taken to ask for the appointment of the aforesaid Royal Commission.

We have the honor to remain Sir,
Your obedient Servants,

THEO. H. DAVIES,
S. B. DOLE,

Committee on Legislation.

O

REPORT ON SUGAR MANUFACTURE.

To the Planters' Labor and Supply Company:

There are very few lines of business where such a large amount of capital is invested that have made as slow progress towards perfection as the sugar-cane business. This is due partly to the fact that the cane-growing regions are located mostly in tropical and semi-enlightened countries; and although the sugar business in these countries is carried on mostly by men from thoroughly progressive countries, where they become separated from the thrift, drive, and inventive genius of their mother countries, they are too apt to fall in with the thriftless ways of their adopted country.

This is as true of this country as it is of other tropical sugar countries.

We have, however, under the stimulus and impetus given the sugar business here by the Treaty, made rapid progress, and greatly improved our sugar machinery, and methods of manufacturing sugar. Still we have much yet to learn, and the science of raising and manufacturing sugar from the sugar-cane is still in its infancy.

The diffusion process was invented more than forty-two years ago, still it is not a settled question to-day whether it can be applied economically and successfully to cane.

The maceration process was invented and adopted years ago, and although several of the planters here are thoroughly satisfied that double crushing will pay, and are adding two-roller mills to their three-roller mills, still it has not, as yet, been demonstrated to their satisfaction that it will pay for them to adopt the maceration process—that is, the use of water to saturate the begasse in its passage from the three-roller to the two-roller mill.

We find, however, that even in countries where maceration mills have been used for years that there is a difference of opinion on this subject.

The increase in the consumption of sugar in the United Kingdom from 15.2 per cent. in 1840 to 71.7 per cent. in 1883 means that the use of sugar has gradually passed from being a luxury to that of a necessity of life, and, as with all necessities of life, competition in this business has become sharp and brisk, and profits are cut down to a fine figure.

It behoves us, therefore, to study carefully into all the new methods

and improvements, and aim at thorough economy in all the branches of this business.

The maceration and diffusion processes are now receiving a thorough scientific investigation—more especially diffusion; and it does seem as though we would soon have this problem solved.

The United States Government has taken the matter in hand, and careful experiments will be made in regard to diffusion next grinding season in Louisiana.

Dr. Smith writes that three diffusion batteries are being put up in Louisiana by the Government, but adds, "I have made up my mind that we are a long way from success in applying diffusion to sugar canes;" also, that "diffusion is not popular here at present." The theory is accepted as a good one, but there is no faith in its economical adoption as a cane process. The objections to this system as applied to cane are:

1. The reduction in the density of the juice from 1° to $1\frac{1}{2}^{\circ}$ B.; as from 16 to 20 per cent. of water is added to the juice; this necessitates more lime, long boiling, and subjection to heat, which converts crystalizable sugar into invert sugar.

2. The loss of the begasse as fuel, although it has not, as yet, been fully demonstrated to our satisfaction that it might not be made of some use as fuel.

On the other hand, the advantages of diffusion are—the extraction of within 4 or 5 per cent. of the actual amount of saccharine juice in the cane; within 1 or $\frac{1}{2}$ per cent. of the whole amount could be extracted, but sugar authorities seem to agree that it does not pay to extract that amount. Again, the diffusion juice comes from the battery clear and transparent, consequently there is no loss in skimmings as there is when the cane is crushed in a mill.

Experiments have been made with diffusing the begasse. Judge Hart, of Kohala, who has been studying up the subject, feels sanguine that the begasse from our mills can be successfully diffused, and then by passing it through another mill be sufficiently dried to be used as fuel. He intends to make experiments with a diffusion battery on his plantation, we understand.

Professor Wiley speaks favorably of the large percentage of juice to be obtained by this method; but he also says that the begasse must be cut up into small pieces before it is subjected to diffusion. If so, it is a question whether it will be of much value as fuel after passing through this process.

It is out of the question for us to put the begasse, after it has been subjected to diffusion, into trash-houses, soaked with water, to cure—it will never cure. Nor will it ever be of much use to put into the rind ground in that condition to be dried, as all practical planters know. It can certainly be passed through a mill, and be used as fuel; and this would seem to be the only practicable way that the water could be extracted so as to render it of use for fuel. The question is, will it be of sufficient value as fuel to warrant the expense of an extra mill, and the extra fuel necessary to run it? This seems doubtful.

Until it can be shown that the begasse can be used for fuel, and to advantage, after it has passed through the diffusion process, Hawaiian planters can do no better than adopt the maceration process, or at least double crushing. This we can easily demonstrate. Double crushing on these islands has obtained from 75 to 77 per cent. of the total juice in ripe cane, and Dr. Martin has ascertained by analysis that at Waiakea, Hilo, they have obtained by maceration as high as 82 per cent. But taking

the amount obtained by double crushing, 77 per cent.; and even this is within 8 per cent. of all it would pay to extract by diffusion. Our experience is that, without the use of trash, a ton of coal will manufacture a ton of sugar. This coal is worth from \$10 to \$12 delivered on our plantations, and with the extra amount which would be necessary in diffusion to manufacture a ton of sugar, which would be about 320 lbs., the cost of fuel per ton of sugar would be a little over \$12.

Now, with sugar worth \$100 per ton in the bin, the 8 per cent. increase by diffusion, which is 9.4 per cent. more juice actually obtained, would be worth \$9.40; in other words, the loss by fuel would be more than the gain in sugar.

H. W. Wiley, United States Government Chemist, in his report on diffusion, says: "The experiments in diffusion, I freely admit, are far from being satisfactory;" he hopes, however, to follow out the interesting problem to success.

One thing is certain, Hawaiian planters can well afford to let Louisiana planters, who have to pay only \$4 per ton for coal, aided by the United States Government, experiment with diffusion, and we can profit by their experience.

With the Double or Triple Effect, and the other improvements of the present day in boiling-house machinery, diffusion has a better opportunity of a fair test than formerly, when evaporation was done in open pans.

The five-roller mill, with patent automatic trash-feeder, as constructed by the Honolulu Iron Works, does excellent work.

The question whether it will pay to use maceration in connection with double grinding is the important one. Data, so far as we have obtained it, seems to show that it certainly will under certain circumstances.

Mr. Lidgate made careful experiments with double crushing at Laupahoehoe with two three-roller mills, published in the *PLANTERS' MONTHLY* of January, 1885, the results of which were 77 per cent. with the use of water, and about the same without the use of water. The cane was soft and juicy, and not very ripe.

We not long ago collected at the Waiakea mill, Hilo, three lots of trash, one after it had passed through the three-roller mill, one after it had passed through the two-roller mill with the use of water, and one after it had passed through the two-roller mill without water. The samples were thoroughly dried, with the following results: Trash from three-roller mill weighed 17½ lbs., dried it weighed 8½ lbs.; from two-roller mill wet grinding weighed 14 lbs., dried it weighed 8 lbs.; from two-roller mill dry grinding weighed 15½ lbs., dried it weighed 8½ lbs. This shows that the trash from the three-rolls dried out of its own weight 52.8 per cent. Trash from the two-roller mills, wet grinding, dried out 42.8 per cent. Trash from two-roller mill, dry grinding, dried out 45.1 per cent. Approximately, the gain by wet grinding was 2 per cent. in amount of juice. They say they usually obtain from 3 to 4 per cent. more by maceration than by dry grinding at the Waiakea mill; and when the cane is hard the gain reaches as high as 8 per cent.

The double mill at the Kohala plantation, lately erected, has commenced grinding on dry, hard ratoons. The juice extracted by the two-roller mill is astonishing. Their three-roller mill, however, does not grind very well, leaving more for the two-roller mill to do. Their figures show that the two-roller mill extracts from 23 to 26 per cent. additional juice by maceration, and from 17 to 17¾ per cent. with dry grinding, the

difference between maceration and dry grinding being from 6 to 9 per cent. in favor of maceration.

It would appear from the above statements that the gain from maceration differs according to the nature of the cane, the use of water to saturate the trash being of more benefit when the cane is hard than when it is soft. This is quite natural. Hence the value of maceration will undoubtedly vary in different localities, and with different kinds of cane, and according to whether the trash furnished by the mill is sufficient to do all the work without the use of coal. Each mill-owner will have to decide the problem for himself.

The figures furnished us by the Waiakea mill appear to show that there has been no loss by converting crystalizable into invert sugar, from the use of water in the trash.

The results of grinding in 1884, before the maceration mill was erected, and of 1885 with maceration, stand as follows: Crop 1884, juice $10\frac{1}{4}^{\circ}$ B., 1000.2 lbs. to the clarifier, dry grinding; actual sugar in juice of above density, 1113 lbs. Crop 1885, juice $8\frac{1}{4}^{\circ}$ B., 864 lbs. to clarifier, maceration; actual sugar in juice of that density, 935 lbs.

The Newell cane-shredder, erected last year on General Warmouth's plantation, Louisiana, is attracting some attention. On this plantation they have obtained as high as 82 per cent. of juice with the use of the shredder, and General Warmouth says it will give the best mills an increased extraction of 12 per cent.

The idea is not new. Bonefin, of Mauritius, invented a machine in 1877 for shredding cane before it passed through the mill; and years before that, others had invented machines for the same purpose. The Newell shredder may, however, be an improvement.

In regard to clarifying juice, we strongly recommend the use of round bottom clarifiers or defecators as they are commonly called. In these defecators the juice is not skimmed, and the meltings are brought down to a small compass in the oval shaped bottom, in drawing them off. When the juice has been entirely drawn off, a cock is opened that lets the settlings out readily, it does not have to be scraped out, as is the case with our square bottomed clarifiers. These defecators are heated either by a steam jacket or steam coil. They are erected largely in Louisiana and other sugar countries, and it is strange that they have not been adopted here.

The use of salicylic acid to prevent the fermentation of juice has been tried on several plantations here, but with indifferent results. This acid, which requires a large amount of water to dissolve it properly, should be dissolved in alcohol. Thus dissolved its use will be more potent.

The iron mud presses made at the Honolulu Iron works, and also imported from Europe, are more substantial than the wooden presses, and are much more easily and quickly handled. We do not see any special benefit to be derived from the use of carbonic acid gas in connection with the mud press—in fact its use has been discontinued on a great many plantations. In cleaning the juice, Hawaiian planters are certainly behind other progressive sugar countries. This is due partly to the fact that our sugar is not allowed to go into the United States duty free above No. 16 D. S., moreover, all our product goes to the refineries, and we do not aim at a light quality of sugar. Still sugar polarizes lighter for being properly cleaned, and we should take more pains and improve in this direction. One part foreign substance destroys two parts crystalizable sugar. We think it has been clearly demonstrated, that juice cleans much better after it has been reduced in the double effect to 25° B., or more, than

immediately after the clarifier. Col. Spalding has adopted this method with good results. He cleans his juice both before and after it has been reduced to syrup, and although his sugars could not be called light in color, they polarize from 1 to $1\frac{1}{2}$ per cent. higher when cleaned in this way. We have adopted this method at Hamakuapoko, Maui, and although we have not as yet given it a thorough trial, the results are good. For the benefit of those who have not looked into the matter, we would say that after the juice has been reduced to syrup, the foreign substances, which then are lighter than the syrup, rise more readily to the surface on the application of heat, than when the juice is light, and before it is reduced down.

MOLASSES.

It is an undoubted fact that the molasses now run to waste contains a very large proportion of sugar, generally from 30 to 50 per cent. In the ordinary practice of manufacture there is from every ton of sugar a residue of from 12 to 20 gallons of waste molasses weighing from 150 to 220 pounds and containing from 50 to 125 pounds of sugar, aggregating say from 25 to 65 tons of sugar on a crop of 1,100 tons.

The question arises, can we prevent this loss? It is doubtful whether we can entirely prevent it but we may do so partially.

Ordinary waste molasses consists approximately of cane sugar, 40 per cent.; water, 25 per cent.; invert sugar, 15 per cent.; ash organic matter, etc., 20 per cent. The reason we do not obtain the 40 per cent. of cane sugar is that the invert sugar, ash and organic matter prevent crystallization, and until we succeed in withdrawing some of this invert sugar and foreign matter, we shall not be able to secure this crystallizable sugar. For this purpose various methods have been suggested and used. Only one of which, that known as the Osmose process strikes us as being available for our needs and circumstances.

Imagine the ordinary filter press so constructed that the alternate chambers may contain, the one water and the other molasses, with a single sheet of parchment paper between and you have the essential idea of the Osmose press. The theory is simply that of diffusion, the parchment paper constitutes the cell wall through which the soluble impurities pass into the water with greater facility than the sugar thus leaving the molasses comparatively purified and ready for recrystallization. A number of these cells, 50 or 100, placed side by side constitute a press, and are so arranged that the molasses enters at one end and the water at the other and travel side by side in opposite directions to the outlet.

With such a press it is asserted that all the sugar may be obtained from the molasses, but as in diffusion of cane there is a point of practical extraction beyond which it does not pay to go. We understand that this press is in continual use in Germany on beet molasses which is said to be much more difficult to handle than cane molasses and we think it would be advisable to make a trial of the process on these Islands, especially as the press is inexpensive, simple and easily worked.

As it is by experiments and comparing results that we gain information, we will for the benefit of those it may interest, give the result of a few boiling house experiments:

In the PLANTERS' MONTHLY of January, 1884, C. Moller, in an article entitled "Different Methods in Sugar Boiling," advocated "one grade boiling"—that is, boiling the molasses in with the juice and making one grade of sugar, instead of three or four grades. Mr. Moller's experiment showed a gain of 32 cents per clarifier, in the net returns from San Francisco in favor of one grade boilings.

At Hamakuapoko, Maui, a careful experiment of this was made last February. The result was as follows: 590 clarifiers; juice 10° B.; yield 748 lbs. to clarifier; net return \$37.45 per clarifier. 340 clarifiers; juice 10.2° B.; yield 758 lbs. to clarifier; net return S. F. \$37.28 per clarifier. 260½ clarifiers; juice 10.5° B.; yield 772.6 lbs. to clarifier; net return S. F. \$37.98 per clarifier. Clarifiers contained 480 imperial gallons. The above is a little in favor of three grade boilings but the result is very close. When the sugar-boiler understands one grade boiling thoroughly, the result will be fully as good and better than in three grade boiling, but it takes more steam, as the pan has more granulating work.

Another experiment at Hamakuapoko was to ascertain the best time to grind cane after it had tasseled. The question arose whether there was not ordinarily as much sugar in the cane two months after it had tasseled as there was at a later period in this region. 2,000 lbs. cane were ground Feb. 6, 1885, three months after it had tasseled, when the cane was still rather green, and 2,000 lbs. were ground from the same piece again on July 9, 1885, when the cane was quite ripe, with the following results: It would be right to say that the yield per clarifier was not obtained from the 2,000 lbs. only, but from several days work at that time. Feb. 6, 1885, ground 2,000 lbs. cane, 10° B., juice extracted 71.9 per cent.; the green trash weighed 562 lbs.; the trash dried weighed 251 lbs.; yield per clarifier of 480 imp. galls., 799 lbs. July 9, 1885, 2,000 lbs. cane ground, 10.75° B., juice extracted 70.4 per cent.; the green trash weighed 592 lbs.; the trash dried weighed 306 lbs. The above showed a gain in the yield per clarifier July 9, of 45.32 lbs. But there was a loss July 9, of 1½ per cent. of the whole weight of cane in juice, or 2 per cent. loss of the amount of juice, which would give..... 22.20 lbs. sugar

Deducting this we have actual gain July 9..... 23.12

In submitting this report, we would express our regrets that we have not been able to obtain more facts and material for making up a report from other plantations. Several planters have been written to, but none have responded.

Respectfully Yours,

H. P. BALDWIN, Chairman.

J. M. LYDGATE.

REPORT OF COMMITTEE ON VARIETIES OF CANE.

To the President and Stockholders of the Planters' Labor and Supply Co. :

SIRS:—The object for which this committee was appointed is to gather all the information obtainable about varieties of sugar cane, particularly new varieties, imported with a view of testing their value for cultivation on these islands. For this purpose, the best imported canes should be carefully cultivated on each of our islands, and if possible, by every planter, to test their adoption to each locality. I cannot better emphasize this point than by quoting the words of Mr. Davies, in his last year's report, as chairman of this committee: "I therefore believe that every planter should prepare himself for any emergency, by having a few acres of some other well selected varieties planted every year to serve for seed in the event of failure of the Lahaina cane from the sudden development of some new borer or blight."

With a view of obtaining only reliable information to lay before you, circulars have been sent to several planters, who were known as having taken an interest in the canes imported by Mr. Theo. H. Davies, the

original plants of which are now in the Government Nursery, in charge of Mr. Jaeger, who has shown much interest in the cultivation and distribution of them over this group, and which are certainly worth a visit from every planter.

In response to those circulars, several replies have been received. Mr. R. A. Macfie, Manager of the Kilauea Plantation, Kauai, writes:—"In 1882, we obtained from Australia some seeds of the varieties known there as the Black Java, Meera, and Oboe. Since that date, I have grown these varieties alongside the Lahaina cane, both on poor soil with bone meal, and on good soil without manure. On poor soil none of the varieties have grown as well as the Lahaina cane, but on the good soil they have done better, and equal Lahaina in number of stalks per stool, and in length of joints; the stalks, however, are smaller than those of the Lahaina. I am sorry that I cannot give any comparison of density or polarization of juice which would be of value. Nor can I pronounce a decided opinion as to which of these varieties has done best; but perhaps the Meera stools have done better than the others. We have not had any 'Elephant' cane growing here."

Mr. Edward Hoffmann, Manager of East Maui Plantation, located at Makawao, some 1,500 feet above the sea, writes under date of September 29th:—"In answer to your question regarding my experience with the Queensland canes planted by me, I will state, that of the fourteen different varieties planted here, I can only mention three that I consider worth trying on uplands, and these are the Elephant, Black Java, and 'red striped cane'. The latter resembles very much in growth and color the 'Tahiti cane.' Up here the 'Elephant' cane seems to do the best of all, and by irrigating it once a month, I found this cane to out-grow all others. At a growth of seventeen months, I have had a stalk of it that weighed 15½ pounds, without the top, and that measured over thirteen feet of grinding cane. I doubt very much whether the juice is equal in quality to that of the Lahaina, and am inclined to believe it comes nearer to that of the Kokea which, as is well known, stands lower in density, under ordinary circumstances."

Regarding the "Red Lahaina cane," referred to in last year's report of the Committee on Varieties of Cane, and which was discovered as a new variety by the chairman of this committee while residing at Keaiwa, Kau, in 1879, nothing farther has been ascertained as to its value as a profitable cane for cultivation, excepting that it still gives promise of being one of the best for upland cultivation. Mr. D. Foster, manager of the Pahala Plantation, has now several acres of it planted at an elevation of between 1600 and 1800 feet above the sea, near the Lyman homestead; and in reply to late inquiries made by your committee, speaks very favorably regarding its appearance and growth as an upland cane. About April of 1886 he expects to grind the first crop from it, when an opportunity will be afforded to ascertain its value as compared with Lahaina cane, from which it is believed to have originated, and very closely resembles in growth and quality of juice. This cane has been distributed during the present year on two plantations in Hamakua, Hawaii, and one on Maui. As an example of its prolificness, it may be stated that from six hills of the red Lahaina 224 stalks of first ratoons, five months old, and from six to seven feet long, were cut for seed, filling fifteen sacks. Another year will probably enable us to report more fully on this new variety.

Under date of September 13th, Mr. C. H. Spencer, of Hilea, Kau, Hawaii, sends us the following communication and list of canes cultivated on his place, which will be valuable information for every planter:

"I send you herewith a list of the different varieties of cane grown on this plantation. Those from Queensland deserve special mention. The "Big Elephant and Otaneate, I believe, will prove as great a blessing on our high lands as the Lahaina has on our low lands. They average respectively 38 4-10 sticks to the hill. Both varieties have long joints and large sticks. It is the finest cane I have ever seen. I got the seed from Mr. W. G. Irwin in July, 1884, and it was planted on the 20th. The seed being dry, it was a long time before it sprouted. I cut it (for seed) on the 8th instant, and the average length of the sticks was nearly eight feet. We have now about three acres planted with these canes, and, if nothing happens, it will be a field that will cheer one's soul in a year hence to gaze upon."

LIST OF DIFFERENT VARIETIES OF SUGAR CANE GROWN IN HILEA SUGAR PLANTATION, KAU, HAWAII.

1. * *Uala-lehu*.—This cane grows well on uplands, Reddish green with a bloom on the joints.
2. * *Uala-maoli*.—This cane grows well on uplands. Reddish green with a bloom on the joints.
3. *Palani*. Grows large with but few sticks in the hill. Striped, known in Mauritius as Bourbon cane.
4. *Honucaula*.—Fair Red (dark.)
5. * *Laukona*.—A good eating cane and that is all. White with green stripes.
6. *Kanio*.—Hardy cane. Dark red with green stripes.
7. *Lahaina*. This cane was taken to Lahaina by Capt. Pardon Edwards from the Marquesas Islands in a whaleship.
8. *Ko-kea*. This cane is awaiting the burial service. White. The Lahaina cane has driven this one off the track.
9. *Mikioi*. A good cane. Light red and green stripes.
10. *Hou*. A good cane. Light red and yellow stripes.
11. *Ainakea-hailli*.—One of our best canes. Dark red and green stripes. Meat white.
12. *Ainakea-maoli*.—One of our best canes. Light and and green stripes. Meat white.
13. * *Pupa*. Of little account. Dark red—short jointed.
14. *Manulele*. Fair quality. Purple and brown stripes.
15. *Apeape*. Fair quantity. Light green with dark green stripes.
16. *Puaole*.—A poor cane with us. Dull red and purple stripes.
17. *Ohia*.—A good cane, dark red, the meat inside is white.
18. *Irwini*.—A hardy cane. Like the Hou, but has larger joints and darker leaves.
19. *China or Cuban*.—Yields well on rich moist land. White—came from Tahiti.

We have also seventeen varieties of cane from Mauritius, but as the labels got mixed we are unable to give them their proper names. Three of these canes, viz. : two white and one striped grow well and ratoon well.

Rose Bamboo.—From Queensland. Rose color, with joints from 6 to 8 inches long.

Big Elephant.—From Queensland. Dark red with light green joints.

Otaneate.—From Queensland. This cane is blood red, and white on the inside, with long joints.

Green Caledonia.—From Queensland. White.

All the canes from Queensland are growing here exceedingly well.

Canes in the list marked with a * are indigenous to these islands.

Your committee are satisfied that the subject referred to in their report is one which will, each year, not only possess increasing interest and importance, but one also which every planter who rightly estimates the value of having under cultivation the best varieties of cane suited to his locality and surroundings, will assist in studying and in communicating the results of his experience for the benefit of others. If we succeed in developing even one variety as well adapted to our high lands as the Lahaina cane is to our low lands, the present sugar product of Hawaii may in time be doubled. Let our efforts be continued in this line of search, zealously and perseveringly, and though we ourselves may derive no benefit from the discovery, our successors may reap the reward of our labors.

In closing this report, it gives us pleasure to refer to the greatly improved cultivation of our cane fields noticeable everywhere the present year. Those of us who can recall their appearance twenty years ago, when bare spots and small cane were seen in almost every cane field, and now witness the evenness of the growing cane, and the absence of barren spots and yellow stunted cane, will not wonder at the large returns which will swell our total outcome for 1885 to over 80,000 tons of sugar. When the late Ezra Cornell (the founder of Cornell University in New York State), was asked, on his return from a visit to England, what he considered the secret of the success of the English farmers, he answered: "The thoroughness of their cultivation and the evenness of their crops." So long as our planters adhere to this rule of thorough work, they may expect and will meet success.

The increase in our sugar crop for 1885 is not due so much to increased area of land planted, as to greater care in cultivation, which results in more abundant crops and a heavier yield.

H. M. WHITNEY, *Chairman,*
H. P. BALDWIN.

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REPORT OF COMMITTEE ON MACHINERY.

HONOLULU, October, 1885

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

Your Committee on Machinery are unable to present many new features, although the past year has been remarkable for the steady introduction of improved machinery into a great number of our sugar houses.

THE FURNACES.

Jarvis and others which a year ago were reported with varied and somewhat doubtful success are now on the whole regarded as economic improvements, although in some locations the application of the Jarvis principle is regarded as doubtful probably in consequence of the chimney being placed near tout-jutting spurs of hill-sides and creating a complication of upper air currents and seriously interfering with what would be under other circumstances a good draft; this may account for their being reported a success one day and a failure the next day.

THE SMOKE CONSUMERS OR HOT AIR PIPES

Introduced into the brick work of an ordinary steam boiler is in our opinion more to be commended than the Jarvis Furnace, because but little alteration is necessary, and but little cost incurred in their introduction. That they are effective is beyond a doubt as trash brought direct from the rollers is burned on common grate bars generating an abundance of steam

and consuming its own smoke. This alone will commend its use by all users of steam, laying aside the comparative cost between the two classes of furnaces.

THE MACERATION OR DOUBLE CRUSHING PROCESS.

Perhaps the most striking advance made during the past year is the double crushing or five roller mill. The first three of these rollers are constructed in the ordinary manner and the second pair placed far enough away so as to admit of a bath or spray of hot water on the trash previous to entering the final crushing, but if desired the bath or spray can be dispensed with.

Mr. C. C. Kennedy, the manager of the Waiakea Mill of Hilo, writes as follows: "The automatic feed for the two roller mill is the secret of success with the double crushing," and says further, "that after the first mill's good grinding, he can get with hot water from the second mill 16 to 18 per cent. additional juice," and without water and grinding the best he could do with the three roller mill, he gets from 13 to 15 per cent. additional, with the juice $\frac{1}{2}$ to 1 degree higher density than what the juice stands at from the first mill. In speaking of the trash, Mr. Kennedy says, "as it leaves the second mill it is dry and looks like chips and sawdust from a planing mill." The performance of the above mill has been witnessed by a great number of our members and the verdict is unanimous in its favor. It is further attested to by the fact that the Honolulu Iron Works is working its fullest capacity manufacturing these double crushers.

THE DOUBLE EFFECT.

As an evaporating agent this apparatus is becoming very popular and seems to be preferred to the tripple effect by most practical sugar-boilers. Its value as an economic agent consists in the fact of its using up and utilizing exhaust and other steam that only a few years ago was wasted in the air and unfortunately in too many places is done so to this day, but when we fully realize the gain on the coal bills, the slight but increased amount of manufactured sugar, and the enhanced polarization of our various grades, then we predict for the double and tripple effects a place in all well organized sugar estates. That the gain is being realized is undoubted judging from the number of alterations during the past year and in which this apparatus has been introduced.

DIFFUSION

Will most probably be our next step forward and when the time comes as we think it surely will, we must be prepared to fall in lined. Distant though we are from the great centres of trade we cannot afford to be left behind in the march of progress. We see that little by little the difficulties are being overcome and that sugar cane can be and is to-day successfully converted into sugar by the process of diffusion. The question of its adaptability has given place to one of fuel, which to us on these Islands is one of serious importance, but which will not, we believe, be fatal to the ultimate introduction into this Kingdom of the Diffusion Battery.

Respectfully Submitted,

ROBT. HALSTEAD, Chairman.
W. E. ROWELL.

REPORT OF THE COMMITTEE ON FRUIT CULTURE.

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

The promotion of fruit culture engages our attention as a means not only of making our Islands the delightful Edens they are calculated to become, but also of opening new avenues of wealth. The fact that in California this industry has lately begun to rival those of mining and of the culture of cereals, and that already on only one of our islands the culture of bananas has become next to that of sugar cane, our most profitable agricultural industry, and that many of our fruits might be cultivated by the square mile where now they are barely cultivated at all, indicate that much may be done to make the raising of tropical fruits profitable here.

Your committee have chiefly inquired what can be done in the way of introducing new varieties of fruits; and what can be done in exporting such fruits as we can successfully cultivate.

The introduction of foreign fruits has been so largely accomplished through private enterprise, and notably through the former efforts of Dr. Hillebrand under Government patronage, as to assure us that nearly everything grown in the tropics can be made to thrive in our Islands. Much may be done in obtaining better varieties of the fruits already introduced. It has been remarked that grafts of foreign varieties of oranges and lemons can be introduced to advantage, bearing early and appearing as hardy as the native stock, and that probably Chinese orange seedlings budded from those varieties would also do well. There is little doubt but that better varieties of mangos than those common here could be easily introduced. A variety from Manila has already been started in Honolulu, and several trees have begun to bear. Some of the 75 varieties of bananas said to grow in Cuba, and of the immense number of varieties found by Stanley on the Congo, and of the varieties in the Micronesian Islands, would be interesting additions to our Musae.

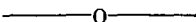
A large number also of fruits not yet known in our islands might be obtained by exchanges with the managers of Botanical Gardens. Some fruits that will not thrive in one locality might thrive in another in the various conditions of climate, soil, and altitude above the sea.

It is probable that the Mangosteen and the strange fruit called the Durion, described by the distinguished Wallace as "The King of Fruits," might be made to thrive in the rich soil and hot and sheltered regions of Kona, Hawaii.

The cultivation of fruits of the temperate zone has not yet been fairly tested. These fruits are chiefly Rosaceae, as those of the tropics are chiefly Myrtaceae. They were originally introduced into Europe from the mild climate of Armenia, Asia; and after centuries acclimated. About four years ago some of the leading varieties of these fruits were planted at Olinda, Maui, at an elevation of 4,000 feet above the sea. They have made a healthy, though slow growth. Blackberries there have grown as well and borne as abundantly as in California. Raspberries have lately been planted and are growing well. The English Walnut and the Japanese Chestnut grow remarkably well, and probably might be profitably raised in the upper parts of our forests and on the high plains of Hawaii. Apple trees are said to bear abundantly at Ulupalakua, Maui. It seems probable that here on the borders of the tropical and temperate zones we may at different altitudes above the sea successfully cultivate both the Rose and Myrtle fruits.

The chief requisite for the promotion of our fruit culture is a facility for marketing. It should engage our attention to further the drying of fruit by the Alden process, the canning of fruit by the most economical methods, and also the exporting of fruit by the vessels plying between our ports and America. If instead of the small fleet of two masted vessels carrying sugar there were a few steamers to add to their cargoes bananas, pineapples, avocados, and other fruits to be gathered from all our Islands, and to take the more perishable fruits by large refrigerators our fruit culture might become a very important industry.

J. M. ALEXANDER.



TREASURER'S ANNUAL REPORT.

Planters' Labor and Supply Company in account current with P. C. Jones

Amount for Travelling Expenses, services, &c., &c.....	\$ 2,035 00
“ per Secretary's order, 96.....	\$ 10 00
“ “ “ 97.....	300 00
“ “ “ 98.....	200 00
“ “ “ 99.....	3 00
“ “ “ 100.....	12 15
“ “ “ 101.....	199 00
“ “ “ 102.....	300 00
“ “ “ 103.....	38 50
“ “ “ 104.....	2 00
“ “ “ 105.....	1 20
“ “ “ 106.....	101 50
“ “ “ 107.....	106 90
“ “ “ 108.....	300 00
	\$1,574 25
“ 1 year office rent to April, 1885.....	150 00
“ S. B. Dole, legal services.....	50 00
	\$ 3,809 25
Balance cash on hand.....	924 30
	<u>\$ 4,733 55</u>

CREDIT.

Received Assessments in Stock.....	\$ 3,213 00
“ Rent from Stock Board.....	120 00
“ From Office Table Sold.....	30 00
	\$ 3,363 00
Balance on hand old account Oct. 20th, 1884.....	1,370 55
	<u>\$ 4,733 55</u>
Balance from Old account cash in hand.....	\$ 924 30

E. & O. E.

P. C. JONES, *Treasurer.*

Audited and found correct, Oct. 9th, 1885.

J. B. ATHERTON,
Auditor.

LETTER FROM TRUSTEES P. L. and S. Co.

REFERRED TO IN SECRETARYS REPORT.

TO HIS EXCELLENCY CHARLES T. GULICK, *Minister of the Interior and President Board of Immigration, &c., &c., &c.*

SIR,—The undersigned having been appointed by the Trustees of the Planters' Labor and Supply Company, a committee to wait upon you for information regarding your Honorable Board as to Commissioners of Inspection, recently put forth in the Circular of August 10, 1885, hereto append certain questions in the hope that the answers thereto will furnish full, complete, and specific information.

We desire to assure your Excellency that the Planters' Labor and Supply Company desire nothing more than the introduction into the country of a good class of immigrants, whose residence here shall be of permanent and lasting benefit for the country as well as to the immigrants. For this object they are ready to cooperate cordially in all measures tending to that end, where such measures are legal, where not calculated to produce complications with foreign powers, and where they clearly tend to promote the amicable settlement of such disputes and differences as inevitably arise between employers and employed, particularly between divers races.

Especially would we deprecate the establishment of any tribunal resembling the Consular Courts of some countries, or any court subject in any manner to the control or influence of any foreign power.

We have the honor to be,

Most respectfully yours,

(Signed) JONA. AUSTIN,
W. R. CASTLE.

Committee of the Planters' Labor and Supply Co.

Questions addressed to the Minister of the Interior and President of the Board of Immigration by the Planters' Labor and Supply Company on the Circular of August 10, 1885, regarding a Commission of Inspection of Japanese Laborers, &c.

1st.—Is it necessary or advisable at this time to depart from the custom of referring complaints of either the employed or the employer to the Court of Law? If so, what are the reasons which make it necessary or advisable?

2nd.—What will be the powers of the proposed inspectors?

3rd.—Is it proposed to invest the Commissioners of Inspection with any judicial authority?

4th.—Is it intended to limit the right of immigrant contract laborers and of such laborers themselves, to refer matters of difference between them to the Courts?

5th.—In the Circular under discussion it is stated that under this arrangement the Government will be able to place Inspectors and Interpreters on the principal islands. Is it intended that there shall be an Inspector and also an Interpreter, or will the two offices be combined in one person?

6th.—If employers or laborers should ignore the inspectors and make their complaints to the court in the first instance, how would such actions be regarded by the Board of Immigration?

7th.—Is it intended that the decision of the Inspector in each instance

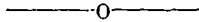
shall be submitted to the Inspector General, and by him to the Board for approval ?

8th.—In case of a disagreement between the employer and the laborer, in the absence of the Inspector, or when the Inspector is at an inconvenient distance, is it intended that the parties shall wait until the arrival of the Inspector or, that they shall go to the expense, including loss of time, of following him to whenever he may be ? In such a case, if for instance a number of laborers should refuse to work, are they to be permitted to remain idle until the matter can be adjudicated by the Commissioner, and if so who is to board them and their families pending the decision ? If in such a case the decision should be that the laborers were not justified in their refusal to work and if serious pecuniary loss had resulted to the employer, by the loss of cane cut, the stoppage of the works, or otherwise, in what manner would the employer be compensated for such loss ?

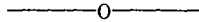
9th.—In case of a decision by the Commission that the laborers were not justified in bringing their complaint, and the dissatisfaction of the laborers with such decision and a continued refusal to work, what means of remedying that difficulty is contemplated by the Board ?

10th.—What number of Inspectors is contemplated by the Board, and where will they be located ?

11th.—What instructions have been or will be given to the Inspector.



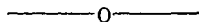
The *Monthly* is somewhat late this month, having been detained in order to obtain some of the reports which were not handed in to the secretary at the time of the meeting. Several reports have not yet been handed in, and some articles have been held over for lack of space.



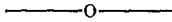
The weather in all parts of the Islands still continues favorable to crops. A little more rain would be appreciated in some localities, but there is no serious complaint as yet.

Everything still bids fair for the largest crop by far that the islands have ever produced.

This is owing not to increased area of cultivation, but to the exceptionally rainy spring and summer, to the increased attention which is paid to thorough cultivation and fertilizers and the introduction on nearly all the the plantations of improved apparatus.

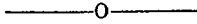


The Lahaina Plantation has changed hands since our last issue. It is now owned by James Campbell and Paul Isenberg. Mr. Campbell will assume the management of the mill and transportation. Mr. W. Y. Horner will continue to do all the planting under a contract made with the former owner, Mr. H. Turton.

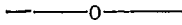


The new arrangement by which the Australian steamers will make this their terminus, is likely to prove of the highest advantage to the islands. It will, besides the incidental expenditures made by the steamers during their prolonged stay, prove a great inducement to travellers to stay over for a couple of weeks, and visit the volcano which they will be enabled to do. Travellers are almost invariably free with their money, and a large harvest will be gathered in by the inter-island steamers and others who

have to deal directly with travellers, besides the indirect advantage to the community at large, by having a large amount of money put in circulation.



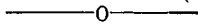
DISCOVERY IN SUGAR-MAKING.—Mr. G. C. Craig, editor of the *Queensland Review*, telegraphs from Brisbane:—"Mr. Bonnefin, of Paris, reports having completed the discovery of the art of extracting the juice from the sugarcane by which he can manufacture white sugar in two hours, and place colonial sugars in Melbourne at £8 per ton. The invention destroys the beet industry, and settles the labor question to a great extent. Mr. Bonnefin refers to the Society of Arts, Paris. He will visit Australia if encouraged.



CHIMNEYS.

A soundly-built chimney vibrates, or swings from side to side, as a whole, under sudden and violent shocks of wind, and is in reality safer when it does so than when it stands in sullen and unmoved resistance. The vibration indicates that the several constituent parts of the structure are firmly compacted into one coherent, continuous, and, as it were, homogeneous mass, which can sway from side to side like a steel rod or spring, without any tendency to dissolve its continuity and break assunder at some intermediate point.

The absence of vibration, on the other hand, means that there is not this integrity of coherence, and that there are, so to speak, fissures of substantial continuity in the structure, at which disruptive strains are unavoidably developed. Sudden shocks of wind bursting upon lofty columns of brick-work in such circumstances tend to break them across at the joints where the interruption of continuity occurs. The movements of vibration are there absorbed, and converted into the less desirable condition of molecular strain.



HOMESTEADS AND LABOR IN QUEENSLAND.

The following from the *Brisbane Courier* of late date is on subjects interesting to planters here:

"Mr. James Campbell, M. L. A., addressed the Aubigny electors at Crosshill on Thursday. Speaking upon the new Land Act, he said that something must be wrong when the land offered for selection was refused by selectors. He had written to the Minister for Lands, strongly recommending that the land be again offered in smaller areas as homesteads. He said he regretted that he had voted against selection before survey, as there were not half enough surveyors in the colony to survey the land as fast as it was required. Speaking on the black labor question, Mr. Campbell said he approved of all the Government had done with regard to kidnapping, but he thought they were doing injustice to the sugar planters in not providing white labor for the plantations. He was afraid that if the Government did not bestir themselves two-thirds of the sugar industry would be lost. He thought the Government should send agents to the North to see what labor was required, and then try all in their power to obtain it. A vote of confidence in Mr. Campbell was carried unanimously.