

THE

PLANTERS' MONTHLY,

PUBLISHED BY THE

Planters' Labor and Supply Company,

OF THE HAWAIIAN ISLANDS.

VOL. III]

HONOLULU, JULY, 1884.

[NO. 4

PLANTERS' LABOR AND SUPPLY COMPANY.

INCORPORATED MARCH, 1882

OFFICE—HONOLULU, HAWAIIAN ISLANDS.

ANNUAL MEETING IN OCTOBER OF EACH YEAR.

OFFICERS ELECTED OCTOBER 16, 1883.

Z. S. SPALDING.....President	W. O. SMITH.....Secretary
S. B. DOLE.....Vice-President	J. B. ATHERTON.....Auditor
P. C. JONES, JR.....Treasurer	

TRUSTEES ELECTED OCTOBER 16, 1883.

ATHERTON, J. B.	BAILEY, W. H.	BALDWIN, H. P.	HARTWELL, A. S.
JONES, P. C.	SMITH, W. O.	SOPER, J. H.	DOLE, S. B.
GLADE, H. F.	HALSTEAD, R.	SPALDING, Z. S.	UNNA, A.
WILCOX, G. N.			

COMMITTEES OF THE PLANTERS' LABOR AND SUPPLY CO.

APPOINTED OCTOBER 18, 1883.

LABOR.				
Jonathan Austin,	W. O. Smith,	G. N. Wilcox,	J. M. Horner,	James Woods.
CULTIVATION.				
Geo. C. Williams,	Wm. Lydgate,	A. H. Smith,	Chas. Notley,	J. H. Soper.
MACHINERY.				
Wm. E. Rowell,	W. H. Rickard,	R. R. Hinds,	Jas. Renton,	H. F. Glade.
LEGISLATION.				
W. R. Castle,	W. W. Hall,	J. H. Paty,	J. B. Atherton,	P. C. Jones, Jr.
RECIPROCIITY.				
E. P. Adams,	F. A. Schaefer,	H. M. Whitney,	H. P. Baldwin,	H. W. Mist.
TRANSPORTATION.				
H. P. Baldwin,	S. L. Austin,	Z. S. Spalding,	C. F. Hart,	H. Turton.
MANUFACTURE OF SUGAR.				
R. A. Macfie, Jr.,	A. Hanneberg,	C. Koelling,	H. P. Baldwin,	E. C. Bond.
LIVE STOCK.				
W. H. Bailey,	J. L. Richardson,	J. N. Wright,	W. H. Cornwell,	B. F. Dillingham.
FORESTRY.				
C. R. Bishop,	W. H. Purvis,	C. F. Hart,	E. Bailey,	J. K. Smith,
Chas. Notley,	R. Halstead,	S. B. Dole.		
FERTILIZERS AND SEED CANE.				
G. N. Wilcox,	G. H. Dole,	R. Halstead,	T. J. Hayselden,	S. L. Austin.
VARIETIES OF CANE.				
T. H. Davies,	C. S. Kinnersley,	A. Unna,	A. S. Wilcox,	W. H. Bailey.
STATISTICS.				
W. O. Smith,	P. C. Jones, Jr.,	T. H. Davies,	C. M. Cooke,	H. F. Glade, J. B. Atherton.

EDITORIAL AND GENERAL.

THE POLITICAL SITUATION.

Every planter and every other intelligent citizen of these Islands has been watching with solicitude the course of the Government during the past two years. The public administration has been in the hands of men in whom the country has had no confidence. Recent developments have only deepened the anxiety which all have felt since the accession of this administration to office.

Words of warning have not been withheld. Earnest and manly admonition and protest was made by the planters in October, 1882, after the adjournment of the last legislature, and shortly after the government was placed under the control of Walter Murray Gibson.

The memorial presented to His Majesty on that occasion will go down to history as a solemn protest of loyal men; men who sought no special privileges nor class benefits. That protest was published in the *PLANTERS' MONTHLY* for November, 1882, and we now republish it to show how correct were the views then entertained, and as a warning for the future:

MEMORIAL TO HIS MAJESTY THE KING.

HONOLULU, October 18, 1882.

TO HIS MAJESTY KALAKAUA.

YOUR MAJESTY:—At the annual meeting of the incorporated Planters' Labor and Supply Company, held in Honolulu upon Monday, the 16th inst., the Company took under its consideration the position of this country with reference to the United States Reciprocity Treaty, and the course of administration of the affairs of this Kingdom as affecting our staple products and great industries. A Report of the Trustees of the Company was presented and read and was unanimously adopted by the Company. The names of the persons and Planting Corporations present, or represented at this meeting, are as follows: viz:

Alexander & Baldwin,	Wailuku Sugar Co.,	Julius L. Richardson,
S. L. Austin & Co.,	G. C. Williams,	W. H. Bailey,
S. T. Alexander,	C. C. Kennedy,	Beecroft Plantation,
J. M. Alexander,	E. Bailey,	S. B. Dole,
Jona. Austin & Co.,	H. P. Baldwin,	East Maui Plantation,
E. P. Adams,	C. A. Bailey,	Hitchcock & Co.,
Burchardt Bros.,	W. R. Castle,	Honomu Plantation,
E. H. Bailey,	Eleele Plantation Co.,	A. S. Hartwell,
F. Bindt,	Grove Ranch Co.,	A. Haneberg,
T. H. Davies,	Haw. Agricultural Co.,	Hilea Plantation,
W. F. Grant,	W. W. Hall,	Haiku Sugar Co.,
R. Halstead,	T. H. Hobron,	P. Isenberg,
R. R. Hind,	Hutchinson Plantation,	Kaneohe Plantation,
Honokaa Sugar Co.,	Hana Plantation,	Kekaha Mill,
T. J. Hayselden,	Hoffschlaeger & Co.,	C. Koelling,
Hakalau Plantation,	P. C. Jones, Jr.,	R. A. Macfie, Jr.,
Hamakua Mill,	Kilauea Sugar Co.,	C. Notley,

W. G. Irwin,	Kipahulu Plantation,	J. H. Paty,
Koloa Sugar Co.,	Makee Sugar Co.,	W. H. Purvis & Co.,
C. S. Kinnerley,	H. W. Mist,	C. E. Richardson & Co.,
W. Lidgate & Co.,	Princeville Plant. Co.,	J. D. Spreckels,
Jos. Marsden,	Pacific Sugar Co.,	J. G. Spencer,
Ookala Sugar Co.,	W. E. Rowell,	A. H. Smith & Co.,
Paauhau Plantation,	Z. S. Spaulding,	G. N. Wilcox,
A. H. Smith & Co.,	W. O. Smith,	Jas. Woods,
J. K. Smith,	Thompson Bros.,	G. W. Wilfong & Co.,
Star Mill,	Waikapu Plantation	C. R. Bishop,
H. Turton,	H. A. Widemann,	J. C. Bailoy.
Waianae Sugar Co.,	T. R. Walker,	

[A copy of this Report is enclosed herewith.]

At an adjourned meeting of the Company held upon Tuesday, the 17th inst. the following resolution was unanimously adopted:

"That a Committee of Nine be appointed to communicate to His Majesty the sentiments of this organization in relation to matters concerning the interests of the industry which we represent."

Pursuant to this resolution, and fully recognizing that the Constitutional Right of Petition to the Sovereign, including as it does the Right of Remonstrance against whatsoever may be deemed to be injurious to the public interests, ought always to be exercised within all proper and usual limits of official courtesy, the undersigned respectfully beg to assure Your Majesty that the entire planting community of this Kingdom, without exception as far as is made known, are of the opinion that the course of Your Majesty's present Ministry is not conducive to the public interests, nor the interests of Your Majesty which are coincident with, and depend upon the public interests. The only public exponent of the views of the present Ministry has advocated the view that the Sovereign of this constitutional government may lawfully and properly take a personal part in influencing the elections of the elective members of the Legislature, and in influencing and controlling the votes of the Legislative Assembly. It is believed by the planters of this country that such a view is opposed to all correct theory and practice of any constitutional monarchy and tends to the manifest injury of every member of the body politic.

The undersigned are aware that it is Your Majesty's wish to be well informed concerning the views and wishes of the Planters' Company, and, as has been intimated by the public organ of the Ministry, that a temperate expression of such views and wishes will receive your unqualified support. In this assurance the undersigned beg to assure Your Majesty that if, after that consideration which is due to such important affairs, it shall please you to call to your cabinet men in whom the monied classes and other classes have confidence, and to impose upon and leave to such men the responsibility as well as the authority to administer the government strictly according to the spirit of the Hawaiian Constitution, which makes its Ministers responsible, your government will receive a kind and amount of public support which cannot be given to its present administration.

It is not the object of the planters, or of their committee to propose for Ministers any individuals or to express preference for any nationality or clique over any others, but with all due respect, and with the utmost regard for the welfare and happiness of all the people of these Islands, to express, as we do now express, an earnest hope and belief that the views and wishes of the planters will receive Your Majesty's careful consideration and meet with the response which is due to the large interests which we represent.

We have the honor to remain, very respectfully, your obedient servants.

(Signed) Z. S. SPALDING, Chairman.

JONA. AUSTIN,	WM. H. BAILEY,
ROBT. R. HINDS,	ROBT. HALSTEAD,
ADOLF HANEBERG,	E. P. ADAMS.
ALFRED S. HARTWELL,	H. P. BALDWIN.

The only response made, received from the self-styled "Premier," was the following:

DEPARTMENT OF FOREIGN AFFAIRS, }
HONOLULU, October 20, 1882. }

To Messrs. Z. S. Spalding and others, Committee of the Planters' Labor and Supply Company:

GENTLEMEN:—By command of the King, the undersigned has the honor to respond to your memorial address to His Majesty.

You, as a Committee of the Planters' Labor and Supply Company, have been authorized "to communicate to His Majesty the sentiments of this organization in relation to matters concerning the interests of the industry we (you) represent." You have not thought proper, however to communicate for His Majesty's information any views in relation to immigration, cultivation, or other matter pertaining to the interests of your company as an industrial organization; but have instead presented for His Majesty's consideration your dissatisfaction with the Advisers of the Crown, and with the opinions of a journal that is not an organ of ministerial opinion, and has no connection whatever with the position or prerogative of the Sovereign.

I and my colleagues fully recognize the privilege of any and all subjects of the Kingdom to discuss the conduct of public officers, and to endeavor by constitutional means to bring about reformation of public administration.

Such a course is open to you, gentlemen, to seek "according to the spirit of the Hawaiian Constitution," the amelioration in the management of public affairs you deem necessary for the public welfare.

I have the honor to be,

Your most obedient servant,

(Signed) WALTER MURRAY GIBSON, Premier.

PLANTERS AND POLITICS.

A re-publication of a portion of the Report of the Trustees of the Planters' Company, made in October, 1882, after the Gibson Ministry came into power, will be instructive at this juncture :

* * * * *

The Ministerial organ, the *Advertiser*, if it may be dignified by the name, has charged an attempt on the part of the Trustees, or some of them, to use the Company for "political purposes;" by which may be inferred is meant *for purposes of hostility to the present Ministry*. While it is denied that the Board of Trustees have sought to use their official position for any private end or personal gratification, it is firmly believed that this organization, which is practically the only medium or mode of representation in the affairs of the Government which the Planters of this country now have, should not be silent or powerless on political questions really affecting their interests. It will not do for Government officials to say that they are to be the judges, *and the only judges*, in matters concerning the rights and privileges of every inhabitant of the country. Every man, woman and child within the boundaries of these fair isles, whether "to the manner born" or sojourning but for a day, is invested with certain inalienable rights which those in authority are bound to respect. Even the kingly office, is not to usurp, unnoticed and unopposed, powers and privileges not granted by the Constitution nor conceded by the people when they gave into the hands of his present Majesty the sacred trust he now holds; and those great and good friends of this little Island Kingdom, who have done so much to raise it from the depths of barbarism and to place it within the family of nations, will not now quietly and without rebuke look upon an assumption of autocratical powers which would soon result in a retrogression to the level from whence its people have been lifted.

It is a fallacy that should be promptly answered and exposed to say that the foreign population of these islands, because of their inability to control the ballot-box and overcome the majority created by the Royal favor and prerogative, have therefore no rights under the Constitution or by virtue of the common law of nations, save that of defraying the expenses of Government and supporting the pomp and pageantry of court, by the payment of taxes as they may be imposed by self-elected law-makers. The foreign element of the population of this country, although numerically small, always has been, is to-day, and always will be, the strongest if not the only safeguard the nation has. And whenever the native population, or the King, shall listen to the siren voices of false and deceitful advisers, who would fain make them believe that the men who have developed and built up this country, are its worst enemies, just so soon will the doom of the native be sealed and the beginning of the end appear! It behooves then, the representatives of the foreign element, in this society, who are here assembled to assert themselves in their proper character and demand

that recognition of their rights, as well as respect for their service, so justly due, but unfortunately of late so churlishly withheld by officials claiming to speak for His Majesty the King. It is not by the fawning manner of the cringing sycophant nor the honeyed words of the unscrupulous flatterer that the friends of Hawaii are to be recognized; and the time has come when the terms chicanery and patriotism should no longer be synonymous.

When the Board of Trustees first received the trust committed to their hands the country was upon the eve of the biennial session of the Legislature. Among the instructions given to the Board was an order to use the influence and moral support of Sugar Planters of the Islands, *as expressed by unanimous vote*, in favor of prohibition of alcoholic beverages. This question was brought before the Legislature, and the Trustees secured the services of a prominent lawyer to draft a prohibitory bill; but notwithstanding the unanimous support of the most intelligent members of the Legislature, and the moral effect of favorable petitions from all parts of the country, the matter was decided by the passage and approval of an act commonly known as the "Free Liquor Bill." What the effect of this Legislation will be upon the industry of the country remains for the future to disclose. Knowing the requirement of the native race for restraint against the temptation it is certainly an experiment fraught with great danger.

A time-honored law of the country required that the appointment of District Judges by the Governors of the different islands should be with the approval of the Judges of the Supreme Court. The Legislature saw fit to repeal this law, and do away with such approval. Does any one suppose that this centralization of power and authority will benefit the people at large, or that the character of the Magistrate, so important to the Planter, will be likely to be more suitable for the position from his having been selected solely for personal reasons? Is it not rather a straw showing the direction we are drifting?

It is only necessary to refer to the many foolish and extravagant acts of the majority of the late Legislature to show the utter indifference of that majority for the interests of the foreign and producing element of the country. Guided and directed, if not incited and urged on, by self-styled patriots, who having nothing to lose have everything to gain, they showed a disposition to waste the country's revenue and incur financial liabilities which would soon lead to a ruin as complete as that of Egypt. A loan of two millions of dollars for needed internal improvements, which would soon return both principal and interest and add to the wealth of the country, would meet with no opposition from sensible men; but to lay the foundation for future increase of taxation by borrowing such an amount upon the faith of the nation's credit, to be squandered in the payment of annuities and increased salaries for offices already sinecures, and the purchase of arms and munitions of war of no avail against the foes of the Government

from within and without, is but the entering wedge or the test of the diamond drill to see how far the people will submit without remonstrance or complaint. If the Sugar Planters of this country, as the tax-paying class most largely interested in this question, shall quietly assent to such measures and give no sign of their disapprobation for the Ministers who favored, and the Representatives who voted for such Acts, then indeed will the objects of this or any similar organization be never reached, but all efforts of individuals towards reform and good government prove futile and unavailing. There is no question as to the unfavorable disposition of a certain class among the native members of the late Legislature, as well as many Government officials, towards the foreign population, and particularly the Sugar Planters of these Islands. And it is patent to all that the influence of those old and oft tried friends of the Hawaiian race, whose voices have been heard in the councils of the nation for many years, has failed to check or in many instances to even lessen the unwise legislation which characterized the late session of the Legislature. How far designing men who have for the time, perhaps, the confidence of the King and the support of the natives, may be able to blind the one and mislead the others by the glitter and show of a ceremony in imitation of the courtly customs of old and wealthy monarchies, and throw off the scent from their own shortcomings by decrying all opposition to their plans as coming from "sore-heads," "disappointed office-seekers," "annexationists," and "white invaders," remains to be seen. Certain it is no honest man will be deterred from the performance of a duty he owes to himself, to his children, and to the country, through the fear of being so rated by a servile press.

The question now presents itself, "What of the future?" The Sugar Planters of these islands pay in *direct taxation*, in round numbers, \$120,000. They also pay taxes of laborers and employees, say \$75,000, and in profits upon merchandise and supplies, in commissions, freight, interest, insurance, &c., enabling others to pay to the Government taxes amounting to over \$50,000. In short the Sugar Planters, directly or indirectly, pay more than four-fifths of all the revenues of the Government from taxation! What do they ask in return? They ask that those taxes be used for the benefit of the people, and the whole people. That honesty and economy be required in all departments of the Government, and that sinecures be abolished and favoritism no longer known.

That the administration of the Government be carried on under the Constitution, and the Kingly office kept free from the taint of jobbing or undignified manœuvring to secure private and personal ends. That the Ministers be appointed for fitness for the office, and retained in office so long as they command the respect and confidence of the people. That internal improvements be fostered and encouraged so far as the ability of the Government may go, but that no waste or foolish expenditure of money be allowed for the mere sake of personal vanity. That Immigration be en-

couraged from all parts of the world, and especially from such nationalities as have proved to be valuable in furnishing suitable labor at reasonable rates, with the prospect of becoming permanent settlers and recuperating the wasting population of the islands.

That the vital and all important question of Reciprocity with the United States receive that attention from the Government which its value to this country warrants and requires; and that the friendly power who granted this and other priceless favors to this little Kingdom be recompensed so far as may be possible by seeing an administration favorable to the great principles she has herself so grandly shown to the world in her example of self government and liberty of thought and speech.

Is this demanding too much? And will you be content with less?

There is one more question to be considered. "What action can the Planters take to bring about a condition of affairs so heartily desired?"

First of all they must be united. The jealousies of nationality, of location, of different degrees of success in business, should all be sunk in the general desire for the welfare of the whole. And as it is not to be expected that all eyes will see alike, the majority should rule and the rest acquiesce in such a manner as to make the decision perfect.

The fact must be made known to the King and His Ministry, as well as to the people, that the Sugar Planters of this country are unanimous in their condemnation of the management of the present administration of the affairs of Government and earnest in their demand for a change. That they regard all proneness towards personal government and absolutism as contrary to the Constitution and in direct opposition to the spirit of the age and the tendencies of all modern Governments; and that while they will support with generous hand any schemes looking to the improvement of the country, or the benefit of the people, they will frown down and resist by all lawful means any encroachment upon their inherent rights as citizens.

The question of labor supply must have practical solution by such action as will insure the coming of immigrants in numbers sufficient for the needs of the country, and in default of the Government to carry out the intent of the Immigration Bill, the Planters must render such assistance as may be necessary to induce the same.

A full and fair exposition of the workings of the Treaty of Reciprocity should be laid before the proper Department of the United States Government, showing the effect of the Treaty upon the sugar interest of the Islands, and its consequent influence upon the whole country. What means to be employed in making such a statement, that would prove the best, must be determined by those most interested; but it will not do to leave a matter of such vital importance solely to the caprice of men who have failed in other matters to show a patriotism that could be depended upon.

Referring to the Reports of the various Committees for suggestions concerning the different subjects that will require attention, the Board of

Trustees express the hope that this meeting of the Planters will be harmonious and pleasant, and that the object which brought you together will be fully accomplished.

SAM'L. T. ALEXANDER, President.

W. G. IRWIN, Vice-President.

E. P. ADAMS, Secretary.

J. C. GLADE, Auditor.

ALFRED S. HARTWELL.

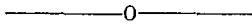
Z. S. SPALDING.

—O—

SMALL FARMS.

Two bills before the Legislative Assembly provide for substantially the same objects, that is for the sub-division of the remaining Government lands and their sale at a low rate to small farmers. The holdings may be very small indeed, not over five acres each in case of watered or kalo lands, and about ten acres each in case of dry or kula lands. There are two difficulties in the way of the accomplishment of much good by these measures. The lack of available land and the comparative absence of a suitable population. The last is the least, because that there is in fact some population here to-day who would profit by the passage of such a law, and if there were not the class of people who would be desirable, could be procured. The motives of both Mr. Kalua and Mr. Dole, the authors of the two bills, are praiseworthy, and wholly in accord with the views so earnestly advanced in this journal from time to time. Mr. Kalua no doubt, more than Mr. Dole, looks to the procuring of farms for the Hawaiians and it is the duty of every one, native or foreigner who has adopted this country, to try and secure the long life and best interests of this nation. To settle a people on land and put them at agricultural work is the best and surest method of securing such an object. Will the Hawaiian become a patient and industrious farmer? Will he survive the discouragement of frequent failure of crops? A negative answer will be promptly made by very many, and many have the right to make such an answer because of long continued experience with the Hawaiian. But after all the native is an agriculturist by nature, and many even of to-day are so by training as well. They have been turned from their old life by the introduction of civilization, for such has been the change and the freedom of the new life introduced with schools, the Bible, and representative government. Fifty years ago the idea that the American Indian would settle into farming communities and lead quiet and orderly lives, was laughed at, as the chimerical dream of enthusiasts, yet the realization even exceeds the theory. Why cannot the Hawaiian be led back to his old agricultural life? Or if not to that exactly, to a life of toil upon the soil. It probably can be done, and every incentive to such a life ought to be placed before them. It might be a wise provision for the Legislature to make provision by way of an appropriation to be placed at the disposal of the Minister of

the Interior for rewards or prizes for certain crops to be produced by natives. It is for the interest of every planter in the country to encourage the locating and occupying of these small farms and to see that they are cultivated with useful crops. Where are our patriotic landowners who shall take steps towards the accomplishment of a purpose so beneficial to the whole country? Where are our shrewd men, with landed estates, whose wisdom is so far seeing as to give away parcels of land for actual occupancy and cultivation, whereby their neighbouring lands are doubled in value? What are the lands on the southern and south-western slopes of the islands, with some exceptions, worth to-day? How much these lands would increase in value by the raising of crops of fruit, potatoes, oats, barley, or other feed? It is not wise to raise sugar or nothing in the country. Let us raise some of these crops which can easily be done, instead of importing them, and we not only increase the well-being of the country by keeping money in it, but distribute it among a larger number who thereby are made better citizens and safer voters. If anything is demonstrated by the character of the Legislatures which have made laws for us during the Reciprocity Treaty, it is the vital importance of increasing the number of good voters, and a good voter is one who adds to intelligence a certain amount of property requiring fostering care and protection. A large plantation or estate may add one or half a dozen to such voters, but cut the property into a hundred smaller holdings and the number is increased tenfold. There is political wisdom as well as commercial sagacity in promoting by every means, the number of small farmers with property and interest to protect.



THE QUARTERLY MEETING.

The Trustees of the Planters' Company held their quarterly meeting at the office of the company at Honolulu, July 1st. Trustees present were Messrs. Z. S. Spalding, P. C. Jones, A. Unna, H. P. Baldwin, W. H. Bailey, R. Halstead, G. N. Wilcox and W. O. Smith. The reports of the Secretary and Treasurer were presented and other business matters attended to.

Col. Spalding, President of the company gave an interesting statement of the work done in Washington in the interests of the Treaty, during the past winter. The work has been largely in disseminating correct knowledge in regard to these Islands, and correcting false impressions. While Col. Spalding sought to give to others the credit for most of the work accomplished, the company and the planting interests of these Islands are under great obligations to him, as well as to Hon. H. A. P. Carter and H. J. Mott Smith, for their earnest and faithful efforts. These gentlemen have rendered lasting service to this country. They have received no pay or compensation from the company or the planters, but have sought

in every legitimate way to foster and cement the friendly relations existing between the government of the United States and these Islands.

At present the sentiment of the United States government is most friendly toward us, notwithstanding the bitter attempts which have been made by interested parties to turn the government against us. The fierce hospitality manifested in Congress early in the present session, and during the previous session, has been so fully met by the indefatigable labors of these able men, in correcting misstatements, exposing falsehoods and maintaining the truth, that never before has that great government been so favorably disposed toward us as now.

The resolution of appreciation and thanks to these gentlemen adopted by the Trustees will meet with the hearty endorsement of every friend of Hawaii.

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JAPANESE IMMIGRATION.

The steps which have been taken by the government and the Planters to promote the immigration of Japanese farm laborers to these Islands promise to result in the introduction of a large number of these people. The Japanese who came to these Islands years ago were valuable laborers and good citizens.

The arrangement now made provides for the bringing of men with their families, and from the best classes of the agricultural districts. The details of the contracts have been fully considered so as to avoid subsequent misunderstandings, and all now promises a successful termination of the efforts towards Japanese immigration to this country.

We believe that the further introduction of Portuguese immigrants under the existing arrangements should be discontinued. This immigration has become too expensive.

—O—

THE HAWAIIAN AGRICULTURAL SOCIETY.

This society held its second annual fair in Honolulu during the past month. The exhibition was held at Kapiolani Park, instead of in town, and although the site possessed some advantages, upon the whole the selection was unfortunate. The distance from town not only prevented many from attending, but some who had desired making exhibits were deterred from so doing. A much more favorable place might have been found near town, accessible to all, and have permitted a show which would have been much more attractive. The display of live stock was excellent, but further than this the fair could hardly be called a success.

The lack of interest manifested by our planters and farmers is to be regretted, and we fear that if the location chosen this year is to be the permanent site, that the influence and value of the society will not grow as it might under more favorable circumstances. This is to be deplored,

for every effort should be made to gain the co-operation of all who could assist in adding to the value of these exhibitions.

That parties upon the other Islands should not take as active a part in the affairs of the society as those on Oahu, is to be expected, for the risk and expense of sending stock or products by sea is considerable. But we hope that the arrangements for the fair next year will tend to enlist greater sympathy and interest than has thus far been attained.

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BUREAU OF ANIMAL INDUSTRY.

From New York Observer.

A bill has passed Congress providing for the establishment of a bureau of animal industry and the extirpation of contagious cattle diseases. The bureau will be organized by the Commissioner of Agriculture, who will appoint as its chief a competent veterinary surgeon whose duty it will be to investigate and report the condition of the domestic animals of the United States and the causes of contagious, infectious and communicable diseases among them. He is also to collect such other information on those subjects as may be of value to the agricultural and commercial interests of the United States.

The Commissioner is to appoint competent agents, who shall be practical raisers of stock experienced in commercial transactions affecting live stock, who shall report the best manner of transporting and caring for animals and the means to be adopted to suppress and extirpate pleuropneumonia and other dangerous contagious or communicable diseases.

The Commissioner is to prepare as early as possible such rules and regulations as may be necessary to extirpate the diseases named and certify such rules, etc., to the executive authority in each State and Territory, and invite the co-operation of such executive authority in the execution of the act of Congress.

When the rules, etc., shall have been accepted by such executive authority the Commissioner may expend in the State so accepting so much money as may be necessary for the purpose of the investigations contemplated by the act, and for such disinfection and quarantine measures as may be necessary to prevent the spread of the disease from one State or Territory to another. In order to promote exportation of live stock special investigation shall be made as to the existence of contagious diseases along the dividing line between the United States and foreign countries, and along the transportation lines from all parts of the United States to ports from which cattle are exported and reports made to the Secretary of the Treasury, who shall co-operate with the State and municipal authority, corporations and persons engaged in transportation of neat cattle by land or water in establishing regulations for the safe conveyance of the cattle and preventing the spread of disease; and the Secretary of the Treasury is authorized to take such steps as may be necessary, not incon-

sistent with the act, to prevent the exportation of cattle affected with any contagious disease, especially pleuro-pneumonia.

Transportation companies are forbidden to transport cattle affected with any contagious or communicable diseases from one State or Territory to another, but the so-called splenetic or Texas fever is expected from the category of communicable diseases. So far as regards the transportation of cattle to market, violations of the act by railroad companies or vessels is declared a misdemeanor on the part of the manager or captain, punishable by fine not to exceed \$5,000, or imprisonment not to exceed one year, or by both. It is made the duty of the United States district attorneys to prosecute the cases.

The sum appropriated for the purposes of the act is \$150,000 (instead of \$250,000, as appropriated by the House of Representatives). The Commissioner of agriculture is required to report annually to Congress a full account of the operations of the bureau, a list of all persons employed, their compensation, etc.



BAGASSE PAPER.

Paper has been successfully made from sugar-cane fiber by the Louisiana Fiber Working Co. The *Louisiana Sugar Bowl*, of May 15th, was printed on such paper, and the quality seems excellent. We take the following from that page :r

“This issue of the *Sugar Bowl* is printed on paper manufactured from bagasse fiber made by the Louisiana Fiber Working Co.

“Although manufactured on a mill designed exclusively for the use of chemical wood pulp, it will be seen that it is a superior paper. The slight defects that appear will be thoroughly eliminated by a mill adapted to the use of this fiber. The manufacturer, a practical paper maker of 20 year's experience, certifies that it can be produced at less cost than chemical wood paper, and that it will “make a better sheet for the money than any paper mill in the United States.”

This fiber will also make superior qualities of book, writing, Manila, drawing and cotton sampling papers—also binders' board, ceiling boards, buckets, tubs, barrels, etc.

The Louisiana Fiber Working Co. owns and controls the only known process by which the bagasse can be readily and economically decorticated and prepared for the pulp mill. It has opened books of subscription, and will receive subscriptions to the amount of \$100,000 for the erection of a first-class pulp and paper mill, (capacity five tons of paper daily,) in such locality as shall be found most advantageous—no subscriptions binding until \$75,000 shall have been subscribed, after which they will be payable at the rate of 25 per cent. monthly. Conditional contract already made with a thorough paper manufacturer to construct and operate the works.

Apply to E. K. Converse, President, 97 Poydras street, or Louis Bush, Chairman, 31 Perdido street, New Orleans.

HAWAIIAN FORESTRY.

The Committee on Forestry, of the Planters' Company, have been giving much attention to their subject, and are collecting valuable information. The Chairman of the Committee, Hon. C. R. Bishop, has permitted us to publish the circular letter addressed by him to various parties on these Islands, also some of the replies received. All of these replies can not be published in this number, others will appear in our next.

HONOLULU, APRIL 10, 1884.

DEAR SIR: If you will, so far as practicable, answer the following questions, and give any other facts or suggestions bearing upon the subject of Forestry, on or before the first day of September next, you will greatly oblige the Committee on Forestry of the P. L. & S. Co.

And now that the Legislative Assembly will soon be in session, suggestions of such measures as you would recommend to be put into the form of law, should be made without delay.

What changes have taken place in the extent and character of the forest in your district during the last thirty years?

What has caused these changes? Is it from wood-cutting, animals, disease, drought, or fire?

What has been the effect upon the rain-fall, the springs and streams of water, the vegetation and climate?

What has been done or is being done to protect, renew or extend the forest?

What kinds of native trees do the best?

What kinds of foreign trees do the best?

What elevations are most suitable for the various kinds of trees?

In your opinion, what would be the most practicable plan to be adopted to protect the forests of these Islands, and to encourage tree planting?

There are old native or foreign residents in every district who can give valuable information upon some or all of the subjects of the above inquiries.

Very respectfully yours,

CHAS. R. BISHOP,

Chairman of Committee on Forestry, P. L. & S. Co.

NORTH KOHALA, May 5, 1884.

HON. C. R. BISHOP, Chairman of Committee, &c.

DEAR SIR: Your Circular of April 10th is at hand. In replying thereto, allow me to say—

Question 1. That the past thirty years have witnessed great changes in the condition, not only of the forests proper, but of our once extensive fern lands as well. These fern lands once occupied the western portion of the highlands of the district, and were very valuable as reservoirs for the slopes below. The ferns were large and covered the surface of the ground closely with their spreading fronds, so that for extensive areas the sun penetrated but imperfectly to the soil. As a consequence droughts were very rare. Indeed, on this northern slope, I do not recall any drought of serious inconvenience until since the denudation of these lands by cattle. Long since, this wide stretch of lands referred to has been as bare as the street, save in the matter of short grasses, and hence the droughts which are now serious, and looked for annually as a matter of course.

The forests proper, consisting very generally of *ohia lehua*, have been drawn upon largely for fuel, both for plantation and private use, till it fortunately became more economical to purchase coal for the use of our mills. In the last few years, however, very little fuel of any kind has been on our plantations beyond the rind supplied in grinding. Meantime,

our forests occupying the eastern portion of the highlands have receded gradually, till now firewood stands at the market value of \$20 per cord. The Chinese are large consumers of the article in their numerous restaurants, and these, together with the domestic demands of foreign families, create a steady though not very extensive draft upon the woodlands still accessible for the market.

Question 2. The reply to this inquiry has already been indicated. Within the period specified in your Circular, *fires* have not been among the agencies to which the destruction of our forests has been due, nor have *diseases*, so far as I am aware, nor has drought.

Before the passage of the first legal enactment forbidding the setting of fires in the woods, such fires were common, beginning usually in Hooleipalaoa, near the eastern border of this district, and burning on for a week or more, till reaching the heavy body of *pili* on the western slope, the vast ocean of fire swept to the sea on the coast line extending from Mahukona to Kawaihae, forming a magnificent spectacle, such as one rarely looks upon.

From indications noticeable forty years ago, it seemed to me evident that these fires had destroyed large extents of forest in former times on the western portion of the highlands, and extending far down on the western slope. This I have no doubt is the fact.

Within the time specified in your Circular, cattle and wood-cutting have been the sole agencies that have wrought destruction to our forests. Of these two agencies cattle are vastly more destructive, as no one will doubt who traverses the southern portion of the district as far as Kawaihae and Waimea. Those fine stretches of woodland which formerly constituted so pleasing a feature in the outlook, are largely among the things that were, and the work of denudation still goes steadily on. Koho, Opiho, Aaka, Mamane, and all the valuable growths of the land fall before the assaults of the cattle, until bare and unsightly hills alone remain.

Question 3. What has been the effect upon the rainfall, springs, streams, vegetation and climate? Just what one would naturally expect: A largely diminished rainfall—and the rains that fall are immediately sent down the gulches in floods, leaving no reserve, as formerly, for the gradual supply of the slopes between seasons. Hence the shorter supplies or total failure of the springs that in former times were regarded as perennial; and hence too the injury which nearly every year is suffered by our crops.

Question 4. What has been done and what is being done to protect, renew or extend the forests? Nothing at all, so far as I know. The few exotics planted by foreigners in their private yards are not of sufficient extent to form an exception to this statement.

Question 5. What kind of native trees do the best? There is no indigenous tree that pays for the labor and expense of cultivation in this proverbially windy district. I speak of trees useful or ornamental, or both.

Question 6. What foreign trees do best? Experiments in arboriculture have been too limited to afford any valuable results in this line. In private grounds and on the roadside, as noticed on the lands of the Kohala Sugar Company, the Ironwood and Eucalyptus endure best the incessant action of our winds. The Wattle is a more beautiful tree, but seems subject to the attacks of insects more than the others named, besides sending out less extent of root, and so liable to be prostrated by our winter kona gales. In localities more or less sheltered the Mango thrives well, as do the Orange, Lime, and in fact almost all varieties of foreign trees hitherto tried.

Question 7. What elevations are most suitable, &c? No experiments have been made in this line.

Question 8. What would be the most practicable plan? &c. It is easy to see as well as to say that *something* should be done to protect the still dwindling remnants of our forests. Posterity surely has some claims upon us which in justice we should not ignore. Nor is it of any use to enact laws for the encouragement of tree planting so long as the rapid destruction of those trees now growing is suffered to go on unchecked. And it is equally evident that in seeking a solution for this delicate and difficult problem, that private rights should be expected to give way to public necessity, so far as the general good may demand.

Having, however, never made a special study of the subject in hand, I must leave it those who have done so, and for those who are wiser men, to give shape to the legislation called for in the present emergency.

Truly yours,

E. BOND.

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PORTUGUESE EX CITY OF PARIS.

The Steamship *City of Paris* arrived at Honolulu, from Madeira, via the Azores, on June 14th, bringing a total of 830 Portuguese immigrants. These immigrants received employment as follows:

	MEN.	WOMEN.	CHILDREN.	TOTAL.
Makee Sugar Co.....	8	6	17	31
Hakalau Sugar Co.....	15	10	19	44
S. Parker.....	9	7	5	21
Naalehu Plantation.....	2	1	2	5
Onomea Sugar Co.....	10	7	7	24
Paukaa Sugar Co.....	5	3	9	17
Wailuku Sugar Co.....	22	15	16	53
Hitchcock & Co.....	6	3	2	11
R. Halstead & Son.....	6	6	11	23
Kohala Sugar Co.....	6	3	1	10
Haiku Sugar Co.....	7	4	8	19
Paia Co.....	7	3	11	21
Honokaa Sugar Co.....	10	8	12	30
W. H. Purvis & Co.....	4	2	4	10
J. M. Horner & Son.....	7	8	8	23
Pacific Mill Co.....	8	6	7	21
Eleele Plantation.....	4	4	6	14
Waiakea Mill Co.....	5	5	3	13
A. Lidgate & Co.....	5			5
C. Notley & Son.....	6	5	8	19
Reciprocity Sugar Co.....	16	11	11	38
Oakala Sugar Co.....	8	5	10	23
Olowalu Co.....	5	1		6
R. R. Hind.....	6	6	13	25
Honohina Plantation.....	5	4	6	15
Kilauea Sugar Co.....	26	24	55	105
Spencer Plantation.....	1	1	2	4
Grant & Brigstock.....	2	1	1	4
Huelo Plantation.....	16	9	13	38
Waikapu Plantation.....	7	7
W. Y. Horner.....	12	10	18	40
Lihue Plantation.....	21	13	25	59
C. Afong.....	5	2	4	11
Others.....	8	6	7	21
Makaha Plantation.....	2	1	...	3

COMMUNICATIONS.

SUGAR HOUSE LEAKS AND HOW TO STOP THEM.

In these days of high-priced labor and low-priced sugar, and when the two ends, viz: what our sugar nets and what it costs to produce it will hardly meet, we are led to look more sharply into the results obtained in our mills and boiling houses as well as in our fields.

Not many years ago the Hawaiian planter was quite satisfied with a yield of two and one-half tons of sugar per acre from good lands, and many lands were cultivated that gave much smaller yields than that, whereas, at the present day the same kind of lands are producing from four to six tons per acre. This great difference is partly due to the present advanced state of cultivation, judicious selection of seed, and planting in proper season. But it is also owing, in a great measure, to the improvements in sugar house and curing machinery, and a more thorough knowledge of the art of sugar making.

Some years ago on these Islands, our sugar house dignitaries, who used to be held in great veneration and rather feared by those who employed them, could only get about 600 pounds of sugar from 500 imperial gallons of good juice; and now, we sometimes get as much as 1,100 pounds from the same quantity and quality of juice; at the same time our present sugar boilers are only mortals like ourselves. Much of the skimmings and washings of tanks were thrown away in those days and much that ought to have been sugar was by those mighty magic men turned into molasses.

The introduction of the mud press has done much to stop some bad leaks, but there is in most places a good deal of sugar wasted in the shape of tank washings, etc., that should be passed through the press, and perhaps it would be better if there were no wash out openings to those tanks.

The double and triple effects lately brought into use here have produced the greatest stride that has been taken in the way of progress in sugar making since the days of stone and wood crushing rollers and cast-iron kettles, and no plantation should be without them; they use only the steam that previous to their introduction was puffed away into the air, and so the whole of the concentration of the juice which used to take half of all the steam generated in the boilers to accomplish, is a clear gain. But this is not all, although it is a big leak stopped, the additional yield of sugar by vacuum evaporation is also a considerable item.

Such progress as this is very encouraging and indeed, were it not for the introduction of such improvements the culture and manufacture of sugar in the Hawaiian Islands to-day would be a failure.

The present low price of sugar the world over, and the probability that many years may elapse before we again see the prices we have been used to, brings us to the consideration, not so much of the good results we have already obtained, but of the startling fact, that even in our best equipped establishments to-day, there is from 15 to 20 per cent. of the available

sugar contained in our canes thrown into the furnaces, which our present mode of working does not take out.

Most of our sugar men are aware that by the diffusion process nearly all the sugar may be taken from the cane, and they are also aware that with our present appliances not more than from 60 to 70 per cent. of the available sugar is got out. And it is presumable that where it is the practice to allow the canes to become very ripe before cutting the loss is the greatest, for even though the crushing rollers do their work well, there is still a good deal of saccharine matter remaining in the trash that can only be got out by washing, if we may so call it.

We cannot well throw away all our good, new, modern machinery at the present time, and go in for the diffusion process. And if we could, the results might not prove to be quite so satisfactory, after the question of fuel was considered, as may at first sight appear.

But trials have been made in other sugar countries of a mode of double crushing with saturation of the trash combined, which looks as if it would answer our purpose here where the canes are so rich. The additional outlay of money would be but little where they have already double or triple effects, and the gain would be from 15 to 20 per cent. more sugar than we now get. Of course it would be out of the question where open pan evaporating is the mode of working, as in that case the gain in sugar would be offset by the additional fuel needed.

In this double crushing and saturation mode of working, the trash after leaving the first set of rollers, and when it is still expanding after the compression, is soaked with slightly warmed water thrown on through a spray pipe uniformly and in such quantities as is found to suit best. This saturated trash falling upon a carrier is conveyed to a second set of two rollers, placed at any convenient distance from the first set, where it is submitted to a second compression. The trash, though perhaps not quite so good for fuel, is good enough to do all the work without the assistance of coal or wood, if the works are otherwise well arranged and everything carried on systematically without any waste of steam.

It would be well for every plantation manager in the Kingdom to make his own test and then decide whether it would be worth while, and if the results of the various trials could be communicated to the editor of this pamphlet for publication, much good might result from it. A trial may easily be made as follows: When the mill is doing good average grinding on good rich cane, juice standing 10° or over, let the trash be saved from the grinding of one clarifier of juice, and when the juice pan of the mill and juice tank has been cleared out, carry the trash back to the cane carrier, spread it on and wet it well with warm water, but not hot water, put it through the mill with a good heavy feed, so as to keep the mill good full, then measure the juice and try the density. The probability is that there may be about 250 to 300 gallons, standing from 3° to 4° density, or from 130 lbs. to 200 lbs. more of sugar per clarifier.

A. Y.

SELECTIONS.

MONEY IN SUNFLOWERS.

Much has been written during the past few years about the value of sunflower seed for feeding fowls and sheep. The value of the leaves of the plant for feeding horses has also been favorably noticed. A correspondent of the *Toronto Globe* calls attention to the value of the seed for making oil. In his communication he writes :—

“Care should be exercised in selecting sunflower seeds, as there is a very great difference in the number of flowers, and consequently in the number of seeds produced, at least so I have proved in my own garden, some varieties ranging from one to three flowers, while others will produce as many as fifty, sixty and seventy flowers on one stalk. When the the object is to provide feed for cattle and fowls, the last variety mentioned will doubtless be found the best paying; when the purpose is to secure oil, only the best oil seed variety should be selected; and, as I have not experimented in this line for oil, I am at a loss which variety to recommend. Experienced farmers and gardeners already know that the plant will readily grow in almost every soil, but prefers light, calcareous land, unshaded in every respect. The quantity of seed required for an acre is from four to six pounds. In some cases the seed is drilled into lines eighteen inches apart, and the plants are subsequently thinned out to thirty inches apart in rows, thus giving about eleven thousand plants to an acre, and each plant produces about one thousand seeds—the better sorts would produce many more. In England it is recommended that the sunflower be earthed up when about one foot high, but it will require no further attention. It is said the yield is much increased by the use of a fertilizer, and old mortar is regarded as one of the best. The sunflower has long been grown for its oil seeds in India and Russia, and more recently its cultivation has been taken up in Italy and Germany. In China and Tartary it is produced in immense quantities, as cheap feed for cattle and in henneries, if for nothing else. In Russia, where the production of seed is very large, the oil is expressed on the spot, and is largely employed for adulterating oil, while the purified oil is considered equal to olive and almond oil for table use. In India one acre of land is stated to yield 11½ hundred weight of seed, which in the press gives out forty-five gallons of oil, and is there compared with ground nut and applied to the same uses. I think Canada, including the Northwest, can produce oil in this way quite as well as India or Russia. I also find that experimental culture in France gave 1,778 pounds of seed, yielding 15 per cent of oil (275 pounds) and 80 per cent of cake; but the product (according to the French report) varies considerably according to soil, climate, and cultivation, and that the average may be roundly stated at fifty bushels of seed from an acre, and one gallon of oil from one bushel of seed; also, that the percentage of oil to the seed ranges from 16 to 28, and that of husk to kernel 41 to 60; but this may be in some measure attributed to the varieties used, though none of the reports speak of the varieties grown.—*Scientific American*.

TREATING A BALKING HORSE.—A Leominster farmer recently broke his horse of a “balky” freak in a very quiet, and, as he claimed, not a cruel manner. His horse is in excellent flesh, and shows no signs of

neglect on the part of his master. He drove him attached to a rack wagon, to the wood lot for a small load of wood. The animal would not pull a pound. He did not beat him with a club, but tied him to a tree and let him stand. He went to the lot at sunset and asked him to draw, but he would not straighten a tug. "I made up my mind," said the farmer, "when that horse went to the barn he should take that load of wood. The night was not cold. I went to the barn, got blankets and covered the horse warm, and he stood still till morning. Then he refused to draw. At noon I went down and he was probably hungry and lonesome. He drew that load of wood the first time I asked him. I returned and got another load before I fed him. I then rewarded him with a good dinner which he eagerly devoured. I have drawn several loads since. Once he refused to draw, but as soon as he saw me start for the house he started after me with the load. A horse becomes lonesome and discontented when left alone as much as a person, and I claim this method, if rightly used, is far less cruel and is better for both horse and man than to beat the animal with a club."—*Fitchburg Sentinel.*

OPEN SECRETS OF SUCCESS.

Mr. C. W. Everett, North Weare, N. H., says he owes his agricultural success to observation and saving manure. He pays market price for muscle, and works his brains. He keeps eleven cows and a horse, besides pigs and poultry, on nine acres of land, less what the buildings occupy. The "secrets" are rich feed and economy of fertilizers, liquid as well as solid. *The Mirror and Farmer* gives further particulars:

"Fowls are kept for their eggs and meat; are kept in confinement, and are made to help pay part of their expenses in composting and fining the horse manure; thus they get the exercise they need, and the horse manure is improved. The droppings from the roosting-room are husbanded and saved in barrels, and sold and used on the land. The stable manure and waste goes into the cellar and covered swine pens, where it is well worked by the pigs. Absorbments are used whenever needed and thus all liquids are saved. The pigs are made great helpers in the manufacture and manipulation of manure. The cows kept are selected for their milking qualities. The owner believes in good feed, and grain is purchased and liberally fed. The cows get generous rations of hay, grain and roots, are kept in fine condition, and yield large quantities of milk. If a cow does not come up to the standard at the pail she is fattened, sold to the butcher and replaced by another purchase. The cows are not forced to their utmost limit, but are so fed that they will do well at the pail for a term of years. Grass and roots are the principal crops grown."—*N. Y. Tribune.*

OILING WAGON FELLIES.—A practical man says: "I have a wagon of which, six years ago, the fellies shrank so that the tires became loose. I gave it a good coat of hot oil, and every year since it has had a coat of oil or paint, sometimes both. The tires are tight yet, and they have not been set for eight or nine years. Many farmers think that as soon as wagon fellies begin to shrink they must go at once to a blacksmith shop and get the tire set. Instead of doing that which is often a damage to the wheels, causing them to dish, if they will get some linseed oil and heat it boiling hot and give the fellies all the oil they can take, it will fill them up to their usual size and tighten to keep them from shrinking, and also to keep out the water. If you do not wish to go to the trouble of

mixing paint, you can heat the oil and tie a rag to a stick and swab them over as long as they will take oil. A brush is more convenient to use, but a swab will answer if you do not wish to buy a brush. It is quite a saving of time and money to look after the woodwork of farm machinery. Alternate wetting and drying injures and causes the best wood soon to decay and lose its strength unless kept well painted. It pays to keep a little oil on hand to oil fork handles, rakes, neck yokes, whiffletrees, and any of the small tools on the farm that are more or less exposed."—*N. Y. Observer.*

SCIENTIFIC FARMING.

Chemistry has taught, that the soil is not a mere mass of earth, to be unintelligently turned over, and toiled over, but that it holds most of the elements indispensable to successful culture. Our unaided senses alone cannot discern the different gases, or elements of which our atmosphere is composed. The same may be affirmed of the soil. Our senses must be aided by science, observation, and practical tests, in order to learn the true state of facts in the vegetable economy, and to obtain success from toil. Since the first garden was planted, and man was placed in it to dress and to keep it, and to eat of the fruit, gardening and husbandry has occupied a prominent and honorable place in history, and received a conspicuous attention from the most progressive nations.

The science of chemistry has given an additional interest to the occupation. It treats of those elements, of the air, of water, and of the earth, which are called into requisition in the wonderful growth and maturity of vegetation. Chemistry classes all matter under two chief divisions—organic and inorganic. Organic matter is more immediately connected with and derived from the elements of the air. The elements of the air are carbon, oxygen, nitrogen and carbonic-acid. Inorganic matter is derived from the soil. In our agricultural studies it is classified under the following divisions: Silicia, potash, phosphoric-acid, lime, soda, magnesia, sulphuric acid, alumina, and chlorine. Water is the great absorbent, carrier, and solvent of all these elements, organic and inorganic. It absorbs many times its own bulk of the fertilizing gases of the air, and gives off in dew and rain to vegetation, while it is itself absorbed by inorganic matter and becomes a solvent and dissolver of the same. Thus it performs the royal office of conveying nourishment for vegetable construction. We are impressed when we behold the mighty power and volume of the ocean, or when the gathered force of a river sweeps onward with irresistible power, but water in the capacity of a builder in the vegetable economy, engages our more studious admiration. It is God's terrestrial agent, operating by solar power and energy, moulding matter to give delight to the eye, gratification to the taste, fragrance to the air and the sense of smell, adornment and beauty to the landscape. It is related of Thales, one of the seven wise men of Greece, whom Cicero believed to be the wisest or most learned of the seven, that he held water to be the first principal of all things, and that God was that intelligent being by whom all things were formed from water. The science of chemistry teaches that water is not a single principal, or element, but composed of two elements, oxygen and hydrogen. It presents many remarkable and interesting qualities outside of its office in the vegetable economy.—*New York Observer.*

THE PHILOSOPHY OF FARMING.

The philosophy of good farming consists in strict economy in everything connected with the farm or its business. Nothing should be lost by careless neglect, and everything should be put to good use. Instead of cropping land continuously without manure or rest, it ought to have both. Corn stalks ought to be made into feed or manure, and not left to waste away on the field. Straw ought not to be burned; it makes good feed and good manure. Manure ought to be carefully applied to the soil we intend to cultivate, and not left to dry and be blown away by the wind. Feed ought to be preserved in good condition. Stock should never be fed on musty or mouldy food. Fences, buildings, and utensils ought to be kept in good condition. Wherever rent or decay appears give it timely care.

But in another direction our philosophy opens up a vast field where most of the secrets of successful farming lie. There is no use in cultivating ten acres if we can make five produce as much and as good as the ten. There is less profit in clearing ten or fifteen acres than if we clear fifteen or twenty. If a ten-acre field, well cultivated and manured, will produce more than twenty acres carelessly cultivated, it is better to work the smaller field. If a three-year old steer is more profitable in market than a load of corn, it is better to put the corn into the steer. If fallowland produces better crops than that from which a crop has just been removed, it is better to fallow land. If good colts, calves, lambs and pigs, are worth more than inferior ones, they are the best ones to raise. If stock will keep better, healthier and cheaper when well protected by shelter, then shelter pays. If one acre of land, properly managed, will produce more milk, butter and meat than five acres without care, the proper culture is the best.

True farming is a science, and its philosophy is a study. The good farmer is the best informed man living, on matters which lie at the bottom of all material prosperity, and when he gets his business boiled down to a point where he makes the best use of everything he has; when he can make more money and live better on ten acres of land than many do on larger farms, it is evident that he has studied the philosophy of farming with profit.—*Kansas Farmer.*

THE BEET ROOT INDUSTRY.

The American Consul at Stettin, Germany, has recently submitted a report to the State Department showing the rapid growth of the beet-root sugar industry in that country. There were 358 factories in operation last year, an increase of fifteen over the year preceding, which produced 8,351,646 double centners (about 66,500,000 pounds) of crude sugar, against 5,997,222 the preceding year.

In concluding his report the Consul says: "I cannot help thinking that in the cultivation of the beet-root a new and large field of enterprise and prosperity would be given to our American people, and the object of this despatch is to call the attention of those whom it may concern to this very important matter.

"Climate and soil in many states, as, for instance, in Michigan, Wisconsin, Iowa, Minnesota, are particularly fitted for the culture of sugar beets, and one hundred thousand acres lying idle now, if planted with it would yield a rich harvest; thousands of men would get work in the factories needed for gaining the sweet juice, and for manufacturing the sugar; the genius of the American people would contrive, without doubt, in a

short time, new machines and processes to make this wonderful industry even more profitable than it is in Germany; the time will come when the beet-root will be for the North what the sugar-cane is for the South, and sugar factories replace within the Northern States the cotton mills now springing up in the south, and the wealth of the nation will be increased materially, not only by adding a new industry to the country, but also by saving hundreds of thousands of dollars now annually sent abroad."—*N. Y. Observer.*

HOW DEEP TO PLOUGH.

Nature has placed the richest portion of the soil very near the surface, and she has constructed plants with their feeding roots very near the surface also, that they might be where the soil is in the best condition to feed them. When man attempts to overcome these natural conditions he soon finds it can only be done at a great cost, if at all. Nature does not object to having the soil made rich to a much greater depth than it is usually found in its natural state, but when man reverses the natural conditions by changing the four inches of rich surface soil and placing it at the bottom of a furrow eight inches in depth, and at the same time covers it with four inches of poor soil which nature has placed beneath the four inches of rich soil, she rebels and refuses to produce so good crops as when only four inches of the richest soil is reversed.

In deciding what depth to plough land it is important to know how deep the soil has been enriched, so as not to go much below it. In deepening a soil it is best to do it very gradually, not more than one inch a year; even when this is done it will require a larger quantity of manure than if ploughed only the usual depth.

On land of ordinary richness a crop of Indian corn will grow better with the same care and manure, if it is ploughed only four or five inches deep, than if ploughed eight or ten inches deep. What is true of corn is true of rye and similar crops; but if it is desired to grow carrots, or horse radish, or any deep-rooted crops, it is important that the land should be ploughed deeper, and for such crops it is also important that the land should be prepared by gradually deepening the soil until it has been well enriched to the depth of eight or ten inches; when this is done deep ploughing may be resorted to with advantage; but to attempt to prepare a shallow soil in a single year cannot be done without the application of very large quantities of manure; and even then it would be difficult, if not impossible, to mingle the manure with the soil and make it so well adapted to plain growth, as if the deepening had been done gradually, covering a period of several years of time.—*Mass. Ploughman.*

SORGHUM SUGAR.

Prof. Collier, late chemist of the U. S. Department of Agriculture, has long been an ardent believer in the idea that sorghum is in time destined to furnish all the sugar needed in this country, and probably yet more for export. He has just published a volume presenting the most important facts bearing upon this subject, as obtained from extended examinations of different varieties of sorghum, and the actual working results of numerous trials on a practical scale. In an address before an agricultural convention in Connecticut, four years ago, the Professor predicted that, within five years from that time, we would be producing our own sugar. He

then referred to the large possibilities of making sugar from corn stalks, then, as now, almost entirely wasted; pointed out the wasteful manner in which sugar was made at the South and in Cuba, from the sugar cane, and claimed that, either from sorghum or beet raising, though preferably from sorghum, we could more regularly and economically obtain all the sugar the country would consume.

We are very far as yet from having attained the development of this industry that was then predicted, but that we are progressing toward it there is much proof. Counting the average consumption of each individual at about forty pounds a year, we produce only about one-eighth of the total supply required. The trouble seems to have been that, though the sorghum has been demonstrated to have sufficient saccharine matter, and can be raised at a cost not greater than that of sugar cane, the amount of crystallized sugar obtained therefrom has generally been far below what had been expected. In some of the trials most excellent results have been reached, but more often, owing to the planting of wrong kinds of sorghum and defective methods of manufacture, the results have been disappointing to those who at first were most confident of an early and brilliant success. Prof. Collier has enjoyed exceptional advantages for the observation of all that has thus far been done in the United States in this direction, and now admits that "there are still many unsolved questions relating to the perfection and cheapening of working processes," but claims that, with proper conditions, and attention to the rules for practice which experience has shown to be necessary, "the successes will greatly outnumber the failures" in the manufacture of crystallized sugar from sorghum.—*Scientific Am.*

CARDAMOMS, CLOVES AND PEPPER.

A Ceylon planter writes to the *Tropical Agriculturist* the following:—I planted out half an acre of cardamoms on the 16th of last month, and there are few if any failures. I have since sown as much seed as ought to give me all the plants I will require for a ten-acre field. I am satisfied that seedlings will be more economical than bulbs at R40 per 1,000, and from recent observation I believe that the gain in time, by using the latter, will not be great. From seed grown only six months ago, I have seen vigorous plants of eighteen inches high. I have recently planted out 150 cloves as an experiment, and their appearance is encouraging, where the plants were well-grown and healthy to begin with, but unfortunately some of the plants had been injured by water in the seed-bed. I have continued to plant of pepper as I could get suitable slips. They attach themselves readily to the surface of the rocks, wherever there is scurf of vegetable matter, but very reluctantly to a bare washed surface. The most advanced plants are twelve feet high and well-branched. As my progress in extending this cultivation is not so rapid as I could wish, and the price of slips at the government garden absurdly high, so I propose, as soon as I can get ripe seed, to put down a nursery. It will take many thousands of plants to give all the rocks in the place a chance of becoming useful; and I have planted about 500 imbul plants along the roads, with the ultimate view of attaching a pepper plant to each, but even for their own produce, I am credibly informed, there is an inexhaustible market in Australia—*Australian Sugar Planter, Feb. 1884.*