There is no class of people in these Islands who have a greater interest in the politics of the country than the planters. And there is no class on which the government depends more for support. They pay directly and indirectly more than four-fifths of all the revenues of the government derived from taxation. Every business interest in the country is dependent wholly or partially on the planting, or agricultural interests. Whatever affects these affects every man, woman and child in the country. Without this great industry these islands would be an isolated, almost unknown spot; the King would be the impecunious ruler of a poverty-stricken land. The whaling industry, which added so much to the revenues years ago, is a thing of the past; the potato and flour business which was some source of profit in the "fifties," is lost; coffee and pulu have seen their day; and it is so with almost every source of revenue other than the planting interests. The mercantile, mechanical and other industrial enterprises which exist here to-day, depend, almost without exception, for their existence on the planting interests. And those interested in planting form the bone and sinew, the mental and moral strength of the country. Every institution which adds strength to the kingdom feeds upon these same interests, the very autonomy of the government rests upon them.

And yet the servile Ministry which has been in power during the past year has attempted to assert that the planters have nothing to do with politics. Whenever they have quietly and by constitutional means endeavored to maintain their simple rights; when they have asked for good government or protested against misrule and the squandering of the public funds, they have been denounced as sore heads and place hunters, and meddlers with that which did not concern them. Contumely and
The Planters' Monthly.

contempt have been leveled at them. And because they possess the Anglo-Saxon spirit of forebearance, and have had strength enough to bide their time, they have been taunted and defied. Even this journal has received a small share of abuse whenever it has alluded to public matters.

The planting interests of this country knows its strength, and when forbearance ceases to be a virtue those in office or out of office who attempt to trifle with public interests and constitutional rights will learn that there is a power in the land with which it will not do to trifle. The greatest safeguard to the peace and prosperity of these Islands lies in its property interests, and in the body of those interested in agricultural enterprises who are animated with the Anglo-Saxon love for constitutional government. It is arrant folly for those temporarily in power to laugh and jeer at law abiding citizens who ask only for good government. It is not place and office that is sought, but honest dealing and reasonable ability in the administration of public affairs. King Kalakaua has no better friends than the planters, but even friends may be trifled with too much. There is a limit to human endurance, there is a point beyond which no ruler can go with safety.

Office, power, special favors, are not sought, but government in accordance with constitutional principles is demanded.

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THE DISPROPORTION OF SEXES.

The evils to be apprehended from large accessions of male Chinese immigrants unaccompanied with women have often been alluded to; but like most dangers which are not imminent little fear has been excited. Within the past few months two instances have occurred which illustrate the danger. In January last a young lady was riding alone on horseback in the daytime, on the public road between Kilauea and Hanalei, on Kauai, when she was overtaken by a Chinaman, who also was riding alone. He accosted her and made indecent advances which were unmistakable; she attempted to get away from him, and struck him with her riding whip. He desisted and rode on a little way to rising ground, where the road could be seen for some distance in either direction, and apparently being satisfied that no one was approaching, rode hurriedly back and again attacked her. She tried to defend herself, but he was a strong man, and seizing hold of her was endeavoring to pull her from the horse when a native man was seen coming, and the Chinaman released his hold and escaped. The lady knew him by sight, and on reaching home her husband at once laid the matter before the police authorities, and diligent search was made for him. Several months elapsed before he was found on the other side of the island, at Kekaha, and captured.
He was arrested in April, and committed for trial, and at the August term of the Circuit Court held at Nawiliwili he was tried, convicted, and sentenced to five years penal servitude.

The other case occurred on Maui, during the month of March. Two ladies and a gentleman started from Kahului on horseback for Makawao just at evening. The gentleman’s horse being lame they all proceeded slowly for a while, when at the gentleman’s request the ladies rode on in advance. On arriving at a place where they became uncertain which road to take, they rode up near to some houses to make inquiries. The occupants proved to be Chinamen, and on discovering that the travelers were women, several came out and gathered about them, and began to make demonstrations which alarmed the ladies, and making a sudden dash they rode away, leaving the excited men, who attempted at first to follow them. Following back the road they had come the ladies met the gentleman, who was doing the best he could with his disabled horse, and after a brief consultation he persuaded them to turn about and continue on again. It was now dark, and as they approached the spot where they had left the Chinamen their approach was discovered, and the Chinamen rushed out and came towards them. The gentleman urged his horse forward and pointing his whip at them as though it were a weapon, he charged on them, ordering them off. On perceiving that there was a man to be contended with they fled in confusion, and the party proceeded on their journey. The ladies were much terrified, and well they might be, as it was in that neighborhood that the body of a murdered woman was found in a cane field a few months previous.

It will not avail to make light of these indications. There are now twenty thousand male Chinese in these Islands, and not over six hundred Chinese women. The census tables of 1878 showed that of the whole population there were 23,388 Hawaiian males and 20,700 females, making an excess of 2688 males over females, and that of every other class the males exceeded the females.

History and reason show that a large excess of males in a community is demoralizing. It is a fact so well established that it admits of no argument. During past years circumstances have been such as perhaps to justify the introduction of male immigrant laborers unaccompanied with women, but the time has clearly arrived when this cannot longer be permitted with safety.

The Portuguese and German immigrants who have come with their families are a valuable addition to our population; establishing homes, they become permanent settlers, and have an interest in morals and good government. Their children as they grow up will find husbands and wives among their own class; they will know no other home, and will become identified with the interests of the country. Acquainted with our institutions and laws; educated largely in the common schools, and familiar with our methods of business, they will be good citizens.
The real danger which will threaten our social and political life if in the future we allow large numbers of Chinese to come here without wives, cannot be over stated. Our homes must be protected at all hazards, and not only will these be jeopardized, but property interests will become less and less secure if the thing is permitted. Should demands for labor or any other considerations lead to the neglect of these obvious principles, and forgetting or blindly ignoring the inevitable result, we again seek to add single Chinese men in large numbers to our already unequally balanced population, we can only curse ourselves for the result.

The absolute refusal to admit Chinamen is not necessary, but it is essential to our safety if more come that they bring a reasonable proportion of women. And so long as the desirable class of Portuguese can be procured which have been induced to come during the past three years, we should seek chiefly from that source our supplies of laborers. We cannot afford, for any temporary consideration, to have the proportion of male Chinese increased. They already feel their power, and it is no visionary or false statement to make that it requires but a few thousands more to endanger our peace and security most imminently.

THE AGRICULTURAL PRESS.

We have frequently urged upon our planters, farmers and stock raisers, the service they might render to others by contributing to these columns. We are indebted to many for their contributions, but wish to again press the importance of the matter. Next to personal experience, the experience of others is the best educator. A recent article in the New York Tribune contains such good and pertinent advice on the subject that we reproduce it here:

"The press, by stimulating inquiry, recording experiences, and spreading broadcast the fragments of knowledge obtained, is and has been the chief agency in effecting improvements in farming which have saved our country from general bankruptcy, and the rest of mankind from starvation. Simple justice requires that this acknowledgment be made—there follow two material considerations: The agricultural press should be liberally, efficiently, cheerfully, gladly and generously patronized and sustained. A farmer ought as soon to think of chopping without an axe, digging without a spade, pitching without a fork, as to farm without the suggestions, facts, developments that it is the business of agricultural papers to supply, and which can be gleaned and distributed by no other agency. Without it our method would still be like those practiced in the dark ages—methods now employed in countries where farm journals are not circulated. Secondly: Write for the paper. Every just man will be as ready to give as to receive. We owe to our fellow men such aid and comfort as it is in our power to render. To draw from the general fund of information without contributing to it, is neither good morals nor good manners. The agricultural paper is the farmer's exchange. He brings
to it what he has to furnish and gets what others supply. Any process which benefits you a little becomes an immense benefaction when it is enabled to serve large numbers of men."

"These are true and timely words. The best life touches the soil directly somewhere, and man, in his later years at least, is drawn toward good mother nature in her varied visible forms. The saving hope of the race finds promise in the blossoms and harvests of each passing year. Practically speaking, the line upon line, precept upon precept, here a little and there a little, of the hundreds of farm journals and of agricultural columns of miscellaneous papers, are wonderfully effective—more so than all other agencies combined—in building up the industry that underlies and supports all others. The Pauline reminder, 'Forget not to communicate,' is always important to this great end."

And the following from the Planter's Journal, published in Vicksburg, Miss., is also in point:

"One of the most important things to be considered by the farmer who is making an honest effort to farm intelligently, is the character of his sources of information. Unguestionably the best of all knowledge is that gained by experience, but where we can get the benefit of other people's experience, it is often far more economical. Now the question arises how best to do this. A very successful Illinois farmer declares that he has outstripped all his neighbors by reason of having made it a point to visit fairs and expositions, where he examined the products displayed and talked with the men who raised them, learning thereby not only the merits of various implements, but many valuable details as to their use. A contributor to that excellent publication the Kansas Farmer states that he has doubled his income by systematic investigation of what he reads—which, of course amounted to many pages every month. Agricultural societies and granges have proven most efficacious in disseminating useful agricultural information."

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THE ANNUAL MEETING.

The approaching annual meeting of the Planter's Labor and Supply Company is anticipated with interest by the planters. The two meetings held since the formation of the company have demonstrated that the organization is based upon sound principles. Although already conscious of identity of interests and sympathy which existed between them, meeting together as a body has tended to develop fellow feeling, and concert of action. In union is strength, and the coming together and face to face, considering the various features of their common interests, has strengthened that union.

Interchange of views and opinions upon the various methods and processes of cultivation and manufacture of sugar, as well as the discussion of the relations of the planting interests to the market, the United States, and our own government, have been a means of education. There is much to perplex those engaged in the sugar industry in this country, not only do they meet with difficulties naturally incidental to the business but
critical questions involved in regard to their market, and political problems which press closely upon them, are causes of much solicitude. Every great industry, in whatever part of the world, has its peculiar obstacles to contend with, and we are not singular in this experience, and the solving of our difficulties calls for the best thought and experience which can be brought to bear upon them. We must bear our own burdens and work out our own salvation. In attempting this selfish and narrow principles must not prevail, but broad and enlightened views should guide our counsels. The planters as a class are honest-dealing, intelligent men:

"Men, who their duties know,
But know their rights, and, knowing dare maintain."

And are animated with a spirit which demands fair play, self-control and patience, the best elements in the characters of strong men, are prominent features in their body. Sometimes it would appear as if they were too conservative and cautious, and submitted too quietly; but, with the wisdom which comes of intelligence they have "learned to labor and to wait."

Great things ought not to be expected as the immediate consequence of these meetings, but their continuance in the spirit with which they were commenced, will surely lead to results which will be far-reaching in their influence. Not only will work be accomplished for to-day but there will be sowing for the future which will produce its fruit. It will not do to live only in the present and let the future care for itself, but hard thinking and earnest work must be done for the future.

Besides the more serious side of the considerations which call the planters together, there is the social feature which in itself is of importance. There is too much of "all work and no play" in the lives of the planters. Recreation, and diversion is necessary to health of mind and body, and the week in Honolulu at the annual meeting should be made a holiday. Attention should be given to their entertainment, the festal board and good cheer should enliven their stay.

The law of growth is one of nature's laws, and as each new anniversary of the establishment of the Planter's Company comes around the association will increase in strength and influence. The tempest may assail but like the oak its roots will strike the deeper and its fibres become tougher. If all is not smooth sailing with fair wind, the determined spirit which overcomes difficulties will guide its course and control its future.

The forces are now at work which will control the destinies of these Islands, and the men of to-day must be vigilant and watching the signs of the times, manfully meet the responsibilities which are upon them. The united sentiment and combined action of the planters will become the best safeguard of the country in protecting it from the dangers which threaten its institutions politically, socially and commercially.
Many of our readers may not be aware that sugar is made from the sap of the date tree, but such is the fact. The following statement is from the *Scientific American*:

The supply of coarse brown sugar in Bengal is mainly derived, not from the cane, but from the date tree, and the date plantations have, during the past fifty or sixty years, enormously increased over several well known districts—Jessore, Burdwan, Barasat, and Nuddea.

The trees are planted in rows or clumps, and are not grown for fruit, as in Arabia or Beluchistan; but the tree becomes profitable after seven years' growth, and may continue to yield a return for thirty or forty. In the month of October the ryots are seen ascending their date trees, and making incisions on alternate sides, in alternate years, on the lowest branch of the feathery tuft at the top. An earthen pot is placed under each incision, and when the cold nights begin, the liquid flows slowly into the pot beneath, whence it is removed in the morning. The colder and stiller the weather the greater the flow of juice. Rainy weather, such as now and then interrupts the enjoyable climate of the cold season, stops the flow of juice for a time, but the process goes on with few intervals between November and March. The juice is boiled down and clarified by means of a coarse weed that grows in almost every tank, and the whole cultivation is highly remunerative. The spaces between the trees in a date plantation are turned to account otherwise, for early rice and for the second crop of mustard. Many substantial ryots own 400 to 500, and even 1000 of these trees, and the traffic in *goor* or treacle adds life and animation to the interior of Bengal.

**SKETCHING FOR MECHANICS.**

In our common school system of education, instruction in matters of a practical nature are too often neglected. The *Scientific American*, in treating of the subject of freehand drawing, and the assistance that a knowledge of it is to mechanics, makes the following sensible suggestions:

While the value of a knowledge of mechanical draughting to a mechanic is indisputable, there is a sort of free-hand drawing, or sketching, that is also useful. The faculty for its practice may be innate, and in that case but slight instruction is necessary to enable its possessor to illustrate his thought far better than he could impart it verbally. But even those whose natural tendency does not impel them to sketching as explanation can get enough facility to practice to make themselves understood readily.

Probably nothing is more difficult to explain and exhibit by words alone than mechanical construction and mechanical movement. It is not only difficult for the narrator, but also for the listener. The memory must hold all the points of the information in contact ready to make a completed idea at the climax. But an appeal to the eye, however crudely made, presents the entire image at one view without any laborious action of the mind. And it is a noticeable fact that those mechanics who are of an inventing, improving, and originating turn of mind are most apt with pencil and paper, or chalk and slab. To them the mechanical idea has received a form in their own mind, and by a partial representation they seek to impart their knowledge to others.
The practice of sketching as illustrative of verbal statement is an excellent one for mechanics generally to acquire. If one has not the natural impulse in this direction, a few lessons in free-hand drawing will not be amiss. Some of the best of James Watt's improvements derive their historical and mechanical value from his rough sketches, which told much more plainly than his equally crude English the operations and conclusions of his constructive mind. In the annual meetings of mechanical engineers there is seldom a paper read that is not illustrated by the author, at the time of reading, by the blackboard and chalk, or it had been made visible by prepared cartoons, or possibly lithographed charts. Shop work also demands the ready hand at sketching. There are many jobs that do not require the preliminary preparation of the draughting room, that are greatly expedited if the foreman has a facility with pencil, crayon, or chalk.

RELATIONS OF PLANTERS TO PUBLIC SCHOOLS.

The Sugar Planter is commonly the leading man in his district. He generally exercises an influence more or less dominating. If a good and public-spirited man, he becomes very much of a father to the native people around him, promoting their moral as well as their physical well being, lending his strong influence and authority to social order, and this not less for his own interest than for that of the community.

No one is more unfavorably affected by evil social conditions prevailing in the surrounding community than is the owner of a sugar plantation. If the dwellings in his district are largely the homes of debauchery and drunkenness, if dens of drink and gambling and opium smoking are frequent in his neighborhood, his laborers and employees are inevitably more or less demoralized. One of the great sources of loss on most plantations is from laborers, and lanas as well, made negligent and unreliable by drunkenness and disorderly nights. No one is therefore bound by his business interests, if by no other consideration, to use zealously his utmost influence for the promotion of sound morals and a pure and intelligent public sentiment, more than is the planter.

Our great means for securing such desirable social conditions in the community is good, sound, pure schooling for the children. Public schools they have in every district for the native children. All are taught the elements of knowledge in their mother tongue; and probably in a majority of the schools instruction is given in English also. It seems to the writer unquestionable that the aptitude and capacity of the Hawaiians have been greatly increased, for all branches of labor, by the mental development they have enjoyed in consequence of school education.

The large and increasing Portuguese element of our population will require good provision for their education. Relieved from the pressure of their accustomed poverty, their multitudes of children will be liable to grow up without the habits of toil and accompanying temperance and
order of their parents, unless they come under favorable educating influences. It will be a serious matter to the planter whether he has in the future intelligent and industrious families around him to invite assistance from, or else idle and vicious hordes.

A good school in which all the children are gathered under the guiding and quickening mind of a noble teacher, drawing out good purposes, repressing and shaming evil instincts and developing alike the higher moral and mental powers of the youth—such a school re-acts powerfully on the whole community through these youths in their homes, and contributes to give a high moral tone. Such schools there are not a few. Would all were such in Hawaii nei.

A planter will wisely use his influence to secure the removal of an incompetent or immoral schoolmaster, and the appointment of a suitable one. He can make his presence felt by the teacher and scholars, as a wholesome and reasonably controlling influence in many ways. If a good white teacher is located in his vicinity, the planter can essentially contribute to making his residence there agreeable, and giving him a sense of countenance and friendship. If the teacher is a native, he can be made to experience a paternal interest and support in conducting himself. A native is especially in need of frequent friendly oversight, not without something of authority. Many a native teacher, well looked after, will do good and faithful service, who, if left to his own direction, would be apt to drift into vicious practices and negligence in school duties. Many a useful and promising young native teacher might be kept to the mark by kindly supervision. The planter very commonly holds some official position which facilitates such services. Although adding to his many onerous duties, he can probably put in no labor more productive of benefit to his own interests or those of the community. Many existing examples are to be seen of plantations surrounded by orderly and prosperous communities in direct consequence of the efficient, systematic exertions of the planter in favor of education and morality.

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THE OUTLOOK.

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The crops generally promise well. Most of the districts of the several Islands have had the usual amount of rain, and with a supply of labor fairly adequate to the demands, cultivation has been well attended to.

In some places the season has not been very favorable, but these are the exception. At the present time planting is being pushed forward. The best time for planting varies somewhat with the elevation and other peculiarities of the locality; in some places it is commenced as early as May, while in others, from September to October is considered the best time. Every year is bringing larger experience; better results are being obtained,
which is shown chiefly by the larger yield per acre. This is not attributable entirely to better work in the field, but partly to more improved machinery and greater skill in manufacture. The grades of sugar have not been improved, but little attention having been given to gain in this respect. The great object has been to produce a maximum of sugar per acre, and to the gallon of juice, at a minimum cost. The quantity rather than the quality has been the aim; the conditions of the market have demanded this. The quality is not altogether ignored, for polarization is the test, and prices are governed by its results, but the increased duty on sugars of higher colors, Dutch standard, prevents the manufacture of the lighter grades.

There are some encouraging circumstances this year which tend to make planters feel more hopeful than at the same period last year. The supply of labor is better; the effects of new machinery and improved means of transportation is felt in some places; the profits of the last crop have made many feel more independent; and the defeat of the opponents of the treaty at the last Congress, all have tended to create a more buoyant spirit.

There has been much to depress, and many sources of anxiety, among which has been the demoralized state of the Government; but on the whole the outlook is more encouraging.

The fate of the Treaty and the prospects for the future are not regarded with unconcern—far from it; but each year is working changes which tend to encourage planters. Each year is bringing us nearer to the time when we can survive without the treaty, but when the United States cannot afford to lose its hold upon these Islands. We are not unmindful of the benefits we have received from the United States, nor do we forget the importance to that government of a controlling influence here.

The Treaty has not been a mere charity, a friendly gift to this country; it was an act of good statesmanship, and the result has proved the wisdom of the policy which directed it. In no way could the United States, at so little cost, have acquired the influence it has by means of this treaty. That great country cannot be so blind to its own interests as not to discern the value of holding a controlling influence in this most important point of the Pacific. The conviction is irresistible that time will demonstrate so forcibly the advantage to the United States of a controlling influence here, that each year the treaty is continued will bring us nearer to that point where that influence must be maintained.

It is earnestly to be desired that the United States Government be represented here by a Minister Resident who will have an eye only to the interests of the country he represents. One who will command the respect of Americans residing here, and have influence at home. A man of ability and character occupying that high position could do much to foster American interests here, and help to solve some of the questions which will arise in the near future between this Government and the United States.

We feel assurance in stating that there is much that is hopeful in the outlook.
DISTRIBUTION OF PORTUGUESE IMMIGRANTS.

By the courtesy of J. S. Smithies, Esq., secretary of the Board of Immigration, we present the statement of the distribution of the Portuguese immigrants who arrived per S.S. Hankow. The steamer arrived on Saturday, July 7th, and the people were all landed on the following Monday. The voyage having been a long one, it was deemed best not to send them to their destination till the following week.

So far as practicable the wishes of the immigrants were observed as to their distribution; families and friends going together.

<table>
<thead>
<tr>
<th>Men</th>
<th>Women</th>
<th>Children</th>
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</thead>
<tbody>
<tr>
<td>Wainaku Plantation (Costa's)</td>
<td>11</td>
<td>8</td>
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<tr>
<td>Hilea Sugar Co.</td>
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<tr>
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<td>62</td>
<td>49</td>
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<tr>
<td>Naalehu Plantation</td>
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<td>Halstead &amp; Son</td>
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<td>Hitchcock &amp; Co.</td>
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<tr>
<td>Pacific Sugar Mill</td>
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<tr>
<td>East Maui Plant. Co.</td>
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<td>8</td>
</tr>
<tr>
<td>W. Lidgate &amp; Co.</td>
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<tr>
<td><strong>Total</strong></td>
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<td><strong>297</strong></td>
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LOEBEINSTEIN'S NEW FILTER.

Mr. A. Loebenstein, who has been the sugar-boiler on the Papaikou Plantation at Hilo, Hawaii, for several years, has taken out a patent for a juice strainer. The following is a description of the construction and working of the apparatus:

The settleings from the clarifiers, as also the skimmings from the cleaners, are conducted into a collecting tank, and from thence into a montejus of about two hundred gallons capacity. This being filled to a suitable height the supply from the collecting tank is shut off. Steam is then admitted into the upper unfilled portion of the montejus by suitable valve arrangements, and by distributing its pressure over the whole superficial...
area of the liquid, this is forced through a pipe, beginning close to the bottom and extending vertically through the montejus, discharged into the filters.

The filters are formed by a number of frames, each frame consisting merely of 2x3-inch sides morticed together to form a square. The top and bottom sides of each square have a certain number of holes bored through symmetrically, to admit as many ribs of ¾-inch round iron, which serve both to strengthen the frame as also for a purpose directly to be explained. All the inner edges of these frames, excepting the bottom, are recessed by bevelling, the bottom having a semicircular groove extending along its length horizontally and connected with a pipe having a faucet on its end. A chamber is thus formed between every two frames without the interposition of blank forms, the vertical ribs in the middle of each frame forming the faces, and the recessions the sides. On each side of the ribs, therefore, we have half a filtering chamber, and a number of frames bolted together, thus enclosing as many chambers as there are frames less one.

The modus operandi is easily explained. The steam pressing upon the liquid forces it through the pipe before mentioned, the mouth of which is placed at the back of the frames. Its contents are distributed equally to each of the chambers by an open channel of communication left in the straining material. The straining cloths on every frame are thus pressed against the ribs of that frame, and by capillary attraction the liquid passes down along these ribs and is collected in the horizontal groove mentioned, and is discharged through the faucet, slowly or fast, as may be desired. The mechanical impurities, mud, also further the operation by eating in themselves as strainers, and are subsequently submitted to a jet of steam to remove all traces of saccharine, and when the apparatus is disconnected are found to be hard and devoid of sweetness.

The clarification thus effected is complete and final. Filtration takes place rapidly, the impurities from ten clarifiers being filtered in little more than one hour, and by its method of construction the necessity of stopping operations, or else disconnecting on account of one or more broken strainers, and consequently imperfect filtration, is entirely obviated. Its cost is comparatively low.

Mr. E. G. Hitchcock, in speaking of the filter, says: "I have had one of 32 frames in use on my plantation for several months, and consider it a great success. The prominent feature about it is its simplicity. It requires the attendance of but one man, and will strain from 30 to 35 clarifiers without changing the strainers. It is put together in the morning and no change is made till night; the set then in use is taken out and an alternate set is put in for use next morning. No gas or other chemical treatment is used. I have seen other strainers in operation and think this does as good work; besides which the first cost is less, and the working is more economical."
MUCH adverse comment upon the Queensland system of employing indentured laborers upon the sugar plantations has recently appeared, as a result of which a Commission to investigate the methods of obtaining South Sea Islanders, and the laws governing the labor system, has been appointed by the Government. Sir Arthur Gordon and Admiral Wilson have been appointed to constitute the Commission.

The Makay Planters' Association, and the Farmers' and Planters' Association of Maryborough, have both protested against the appointment of these gentlemen, on the ground that "both the gentlemen referred to have already published reports on the matter, by which they have prejudged the question in the most decided manner. Your petitioners, therefore, respectfully submit that if a separate commission for Queensland were held in this colony, where the sworn testimony of competent witnesses, including Government officials, by whom the very stringent Act, at present in force, is administered with the strictest integrity, and the Polynesians, many of whom speak English fluently, can be readily procured, the investigation would result in a more reliable and satisfactory verdict for all concerned." We are glad to see that our South Sea cousins have not lost their spirit of independence through "climatic influences," but are ready to protest when not fairly dealt with.

In connection herewith, the following letter from the Rev. Mr. Macfarlane, of New Guinea, upon the subject of Polynesian labor, is of interest:

Mission House, Murray Island,
February 10th, 1883.

To the Secretary of the Farmers' and Planters' Association, Queensland.

Sir,—Your letter of inquiry about obtaining native labor from New Guinea for Queensland, reached me a few days ago, and as there is a boat leaving here to-morrow for Thursday Island, I embrace this, the earliest opportunity, of replying.

Perhaps I ought to preface my reply with a few words upon the suppositions evidently implied in your communication.

Although I believe that colored labor is the best kind for field work in northern Queensland, and am of opinion that the importation of natives from the South Sea Islands and New Guinea might be beneficial to the employees as well as the employer, still I should be exceedingly sorry to see the "traffic" begun and carried on in New Guinea as has been among the South Sea Islands. As to the prospect of obtaining "hands" (as I should say in Manchester) from New Guinea, I fear "the play would not be worth the candle." A vessel might sail along a New Guinea coast line of a thousand miles without getting fifty volunteers for the plantations in Queensland. In the Papuan Gulf, and along the banks of the Fly River, the natives are numerous, but treacherous. Those in Torres Straits and the adjacent New Guinea coast who can be induced to work for foreigners, are employed by pearl shellers and beche-de-mer fishers. Along the coast of the S.E. peninsula they are more tractable, but unwilling to leave home. In the vicinity of China Straits, where we have a prosperous mission conducted by native evangelists from Mare and Lifu, the natives
have begun to manifest a disposition to see the white man's country. Some are engaged in beche-de-mer vessels, and have visited Cooktown. A few might be induced to go to Queensland from the S.E. peninsula, and if treated kindly would bring back a good report of the land, which would probably lead others to go. Thus, as I said twenty years ago, the thing would right itself if the natives were legitimately obtained. However, I cannot advise you to risk any expenditure in attempting, at present, to get labor from New Guinea.

I remain, &c.,

P. MACFARLANE.

THE INTELLIGENT USE OF FERTILIZERS.

The Planters' Company at its last annual meeting entertained the proposition of engaging the services of a competent chemist, for the purpose of analyzing soils; but for some reason the idea was not acted upon. The increased interest taken by planters in the use of fertilizers makes this subject one of more and more importance. In proportion to the accurate knowledge by the planter of the nature of his soil, so will the expense of applying fertilizers be reduced.

We note among the list of cargo per Eureka an item of 125 tons of bone meal. Bone meal is a valuable fertilizer, as are also phosphates and other substances; but we would especially call the attention of planters to the inadvisability of using any fertilizer without first having the soils analyzed. Unless the requirements of the soil are first ascertained, the use of bone meal is a costly experiment, with but a chance of success, as the land may already be possessed of the very element which that particular fertilizer supplies. An illustration of this is afforded by an experiment tried at Kauai with bone meal. Every alternate four rows was treated with bone meal, the intermediate four rows receiving none. The cane when only a few months old showed a difference in favor of the bone meal rows of about two feet in height. The same experiment tried at Ookala, Hamakua, Hawaii, produced no effect whatever. Soil from the latter place was subsequently analyzed, and the result showed that the element supplied by bone meal was already present in sufficient quantity. We would therefore say to planters, use fertilizers by all means, but do it in an intelligent manner. First find out what your soil lacks, and then you will know what to buy. Otherwise you may spend much time and money in useless effort and obtaining no result, become disgusted with fertilizers in general. Cultivate with your brains as well as with your hands, and your ledger account will make a better showing.

The money spent in employing a good chemist would be well invested, and we hope to see action taken on the matter at the coming meeting of the Company.
The following from the *Fiji Times* would indicate that in Fiji the labor question is even a more troublesome one than it is here:

"The planters of Fiji are now experiencing a crisis in their labor supply that must entirely revolutionize the working of plantations. The cost of Polynesians has, within three years past, increased so rapidly in every particular that it is impossible to grow produce at the rates which, as an example, were contracted for on the Rewa a year or two ago with the Colonial Sugar Company. Even then the price given for cane was not considered quite just to the planter, and now, with the increased cost which a fresh supply of laborers at current rates involves, it is hopeless to think of making any return at the prices then fixed on."

The recent large arrivals of Portuguese and Chinamen have somewhat eased our labor market, but the majority of the Chinamen and a large number of the Portuguese leave the plantations as soon as their contracts of service are up, so that a continued importation of laborers to supply the demands of existing plantations will be necessary, without taking into consideration the increase in size of old and the starting of new industries.

The south sea islanders cannot be considered much of a success as laborers, even when they do work, and they are not of permanent benefit to the country, as they nearly all return home eventually at the expense of the Government.

The Portuguese have upon the whole given more general satisfaction than any other laborers we have yet had, those from the Island of St. Michaels being preferred. They are a quiet, hard-working class of people, and used to agricultural work. The Portuguese from the other islands have not given so much satisfaction, being of a more quarrelsome and less industrious disposition.

There are now orders on the books of the Board of Immigration for about 400 Portuguese, and we understand that the Board expect to hear by the incoming mail whether more are on the way or not.

We would urge upon the Government the importance of continuing to introduce such a desirable class of immigrants, who supply not only the temporary demand for labor, but by remaining form a valuable addition to our population.

**METHODS OF PLANTING.**

We clip the following from the *Australian Sugar Planter*:

"A new method of planting has come into favor which saves much expense. It is, we believe, the invention of Mr. James Mackenie, of Seaforth, and has been adopted on the Airdmillan and other large estates. Instead of the canes being cut up and planted by hand, the ground is opened by the plough and the whole canes are laid in the furrow. A man then walks along and cuts them into the usual length of plants. Behind him comes a Garden City Cultivator, which covers up the plants. It is found that, in this manner, ten acres can be planted daily. Those who know the usual manner of planting will plainly see the saving thus effected."
Where irrigation is depended upon, this method would be objectionable, as every effort is then made to make the furrow as wide and deep as possible, for which purpose many plantations run a single mould board plow two, and even three times, through each furrow, followed by a double mould board plow. The following of the cultivator, drawn by a horse, would throw down enough earth into the furrow to materially fill it up.

It is not often, either, that whole canes are used for planting here, the tops of cane that is being cut for grinding being preferred, or what is still better, the *lalas*, or branches, which come out on the old cane. On those plantations where water is not used, the method is well worth a trial, as it would evidently take less labor to distribute whole canes than to distribute short pieces, and a man following after the cultivator could easily cover the few pieces remaining exposed.

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**LOCAL PLANTERS' ASSOCIATION.**

We note that the planters upon Kauai have formed a local "Planters' Association." At their first meeting, held on the 24th instant, G. N. Wilcox was made President, G. H. Dole Vice-President, F. Bindt Secretary, and A. S. Wilcox Treasurer.

It was determined that hereafter the rate of wages for day laborers should be $17 per month. A recommendation was also made to the Planters' Labor and Supply Company to adopt some measures to prevent the frequent desertion of laborers and consequent loss, by establishing a system of certificates of character, to be presented by the laborer before being employed.

The value of these local associations cannot be over-estimated. In union there is strength, and by no other means can the union of the planters be so readily accomplished as by the frequent meeting together for a common object.

The Hilo Planters' Association has heretofore been the only local association. Its success has been such as to demonstrate its value, and we hope that the planters of the Kau and Kohala districts, and those of Maui, will recognize the importance of organization, and shortly form local associations. One great advantage of these associations is, that they will be in a manner be auxiliary to the Labor and Supply Company, and the planters will attend the latter at its annual meetings with better digested and matured ideas, if there has been previous discussion, than if there has been no previous interchange of views upon the various subjects.
MANURES AND CANE SOILS.

EDITOR PLANTERS' MONTHLY: The main object of manuring is, above all, to return to the soil the constituents, especially mineral, extracted and absorbed by crops. Nothing is plainer than that land will be unable to bear the drain made upon it, and lose its capacity of productiveness, unless some method of compensation be resorted to. It is also important to apply only such manures of which the constituents are easily soluble, permitting a rapid assimilation of nutriment to a plant. We thus arrive at this fundamental axiom, that those materials must be returned to the soils, which are absorbed into the growing vegetation. As to kind and quantity, that must be determined by the necessities of the case.

When a country is subjected to heavy rainfalls frequently recurring, the soluble constituents are soon washed out, the silt either passing on to lower lands, or else, if there be none, into the watercourses, and by passing into the sea are irretrievably lost. In the former instance they add to the richness of the soil on the lower elevations, in the latter they completely impoverish.

The extraordinary yields obtained for so many consecutive years from various plantations, such as those at Lahaina, Wailuku, Waikapu, Lihue, and others, compared to others not so fortunate, naturally lead one to the investigation of the causes underlying all this difference, and to the acquisition of such practical facts and data by the planter, that he may by proper means be enabled to overcome this ratio of difference, and unsatisfactory results give way to paying crops.

The demand which the sugar cane plant makes upon the super and sub-statum of a soil for an extensive and continuous supply of soluble nourishing matter are exceedingly large. The gradual decomposition by weathering processes of the mineral matter in the soil does not take place with sufficient rapidity to satisfy this demand. It follows, therefore, that not only must pains be taken to ensure a satisfactory condition of the soil through good ploughing, following and rotation of crops, but also an extra nourishment afforded it from time to time of a kind and in a manner most suited to its needs.

The elementary constituents of a soil most conducive to a rapid and rich growth of sugar cane are lime, potash and phosphoric acid, and when soils carefully worked by the agriculturist in all other respects, still refuse to yield satisfactory results, it is safe to assume that one, more, or all of the above elements, are either entirely wanting or are in such small proportions as to be almost if not entirely exhausted by the first crop of growing canes.

Of course alluvial soils like those on the first mentioned places that con-
tain from 0.14 to 2 per cent. of phosphoric acid, about the same of potash, and in some parts of Lahaina as much as 5 per cent. of lime, are not so readily exhausted, letting alone the fact that the constant accumulations of fresh nutritive matter brought down with the waters of irrigation prevent any diminution in the soil's productive capacity. Soils are something like capital deposited in a bank, constantly subjected to drains and never reinforced. The time must necessarily arrive when the account runs dry. Again, the success of an application of reinforcing material should not be predicted by the one immediate increase of yield, but in the long continued repetition of such yields. Because the first crop after manuring exhibits no increase, is no reason why a fertilizer should be condemned, for, as before mentioned, it is by gradual decomposition of the material that the soil's value is enhanced. Another important factor ultimately represented by dollars and cents, in favor of manuring, is shown by the impetus given to the growth of the seed, causing it to speedily germinate and shoot up, thus escaping the many dangers surrounding its infantile struggle for development against parasitical enemies, weather, irregularities or improper cultivation.

We have before stated, and chemical analyses of sugar cane soils have demonstrated, that lime, potash, and phosphoric acid should occupy a leading position in the percentage of composition. The richest and best yielding fields are those most bountifully supplied, and at the same time a diminution from the normal amount is attended by a corresponding depreciation in yield. In the light of chemistry the rationale of this phenomenon is exceedingly simple. Lime, for instance, exerts a remarkable influence on the future state of the crop, although in itself no direct fertilizing agent. It not only combines with the free acids in the soil, neutralizing them (good crops can never be obtained from freshly cleared wet lands, an acid generated by the decomposition or decay of vegetable matter destroys the bearing capacity of a soil otherwise rich), but at the same time disintegrates and dissolves various organic and inorganic combinations contained in it, and not easily soluble. These it conducts to the plant as soluble nutriment; in other words, it invests the dead capital lying inert in the ground and makes it remunerative. Soils covered with a rank growth of Hilo grass, sword grass, or wire grass, and the difficulty of keeping them under control by cultivation, are infallible witnesses to a paucity of lime.

Again, phosphoric acid not only enhances the saccharine strength of the juice (Beaume), but also in a large measure assists in developing a pure juice almost free from invert matter, a substance whose presence always depreciates the per centage of yield in the manufacturing stages by preventing a corresponding amount of saccharine from granulating.

Furthermore, with the two former constituents to supply the demands of the cane, but an absence of potassic elements, our plant would still struggle with an adverse fate to finally be overcome. It could vegetate
no better than when placed in water; it could assimilate nothing to itself, and since, through the medium of potash, the cellular structure and starch that go to make up the growth of plant are formed, no increase in size or weight could take place.

The foregoing thus demonstrates in what way the three constituents are necessary factors to ensure maximum yields in cane and sugar. Where irrigation takes place the planter need apprehend no trouble, but those not so fortunately situated would probably suggest the following inquiries as to how these fertilizers should be applied: singly or collectively, in solid form or in solution, in large or small quantities.

No infallible rule, satisfying all conditions, can be laid down for the benefit of the planter. The appearance of a field after manuring, in rapidity of germination and growth of the seed, in luxuriance or paucity of vegetation, of themselves soon suggest to him as to how much or little he should have applied. Again, though it is conceded that the application of a fertilizer in liquid form more speedily changes the nature of a soil and imparts its nutrient to the plant, still in the absence of such a material, as also proper economical arrangements for applying the same, we are forced to make use of such, which though not actually in solution, will by the process of weathering and the disintegrating action of the component parts of the soil, the soonest be beneficial. Lastly, that manure is the cheapest and best which, by containing the three constituents mentioned, carries them all to the plant at one application.

Several substances may be obtained, which seem upon first inspection to embody the foregoing principles. Among them the following probably take rank: ashes, animal guano and bone meal. The first mentioned of these contains a large percentage of potash, and though soils fertilized with it alone exhibit a luxuriance over the rest of the field where no ashes have been dropped, still this richness is only confined to the plant externally, the juices on the contrary containing a large percentage of mineral salts very detrimental to crystallization. The experience of those who have had such juices to manipulate does not form a pleasant retrospect. Still an application of a moderate amount of guano, bone dust, or other nitrogenous manure would effect a great change both in appearance and final yield.

Guano (animal) is a magnificent fertilizer, easily obtained and transportable, admissible to all soils, and positive in its action. Its large percentage of nitrogenous matter alone impedes its general adoption for most purposes, through its great vigor in paralyzing the young roots, often killing them. Could a modified condition be procured, specially adapted for cane soils, it would doubtless prove more beneficial than any other fertilizer.

Bone meal does not possess this characteristic. It is found in commerce prepared either from fresh bones or those nearly so; it can be manufactured to different grades of fineness, that most pulverized being more applicable to dry climates. Its disintegrating action takes place very rapidly,
and its extensive application to soils supposed to be worthless has exemplified the truth of the theory, that it only requires a fair return to the soil of material abstracted by crops to reap paying harvests.

It has been learned that the addition of about half a ton to the acre is ample both for the growing crop and the ensuing crop of first ratoons. A fair distribution to the soil can be secured with the assistance of a simple machine that may be constructed on the spot. A hopper containing a bag full or more is mounted on one or two wide rimmed wheels, a small pipe extends downward and forward from the bottom, through this pipe the distribution takes place, and can be regulated by a simple gate device. Handles like those on ploughs may be attached for the convenience of the laborer behind, by whom the apparatus may be pushed along, dropping the manure into the furrow. Hitching hooks are fastened to the front end, by which means a large acreage may be traversed per day with one mule.

Such in a few words is the presentation of an important subject to planters, of sufficient importance, it is to be hoped, to give matter for reflection.

A. L.

—The Australian Sugar Planter should be more careful in its statements. Under the head of "Saccharine Brevities," in the May number, it makes three distinct statements relating to sugar matters at the Hawaiian Islands, each one of which is incorrect. It says, "The Hawaiian incoming crop is estimated at 150,000 hhds; or, at 1,200 lbs. to the hhd., 90,000 tons." As a matter of fact the highest estimate was 80,000 tons, and the returns will not exceed the estimate. It further says that "30,000 tons were the Hawaiian production last season." 59,000 tons is the correct amount. And again it says, "the Spreckelsville Mill, at Hawaii, manufactures 25 tons of sugar per day, or 14,000 tons of sugar per season." 100 tons per day is the capacity of the mill, which consists of three sets of rollers, although it is not usually worked to its full capacity.

—The Huelo Plantation, at Hamakua, Maui, has put in two hundred acres of irrigated cane this year, besides about one hundred acres upon which no water will be used. A few acres were tried last year with such results that the manager hopes to greatly increase the yield this year. Nearly all the cane is being planted to the windward of the mill, the soil there being found to be much better than towards Makawao, where it seems to be heavy and sour. Experiments are being tried with bone meal and phosphate fertilizers. As by the present arrangement of the fields almost all the cane will be flumed to the mill, the plantation will have a chance to make a good showing the coming crop.
ITEMS.

Mr. W. O. Atwater has undertaken the keeping of the Paia Plantation books, in place of Mr. Magoon, resigned.

—Mr. Warren Goodale has entered the service of the Haiku Plantation, at Hamakuaapoko, as book-keeper, in place of Mr. F. L. Stolz resigned.

—Grape culture is profitable. The supply is not sufficient for our market. The blight which was so disastrous to the old mission grapes does not seem to attack imported varieties to any great extent.

—Mr. Roland Wilbur, the efficient sugar-boiler of the Alexander and Baldwin Plantation, is about to take a vacation and visit the States. Mr. William Goodale, of Kau, Hawaii, has been engaged to take his place.

—Colonel Z. S. Spalding, President of the Planters’ L. and S. Co., has taken his family to the States for a visit. He plans to be away for some months. The interest of the Company will be well represented by him wherever he may go.

—The establishment of a regular line of steamers between Honolulu and Tahiti, which is now contemplated by the Oceanic Steamship Co., will be of commercial importance to both countries. The commerce between Tahiti and San Francisco is said to be about 500 tons a month.

—We have received copies of The Merchants’ and Planters’ Gazette, and The Mercantile Record and Commercial Gazette, both published at Port Louis, Mauritius. Both are large daily papers, a part of each of which is printed in English and a part in French. We hope to obtain useful information from these papers in the future.

—The rains during the early part of the past month have been general all over the islands. On Maui, the Hamakua and Spreckels’ ditches are full. The rain, coming as it has, when the young cane is just starting, will give it an impetus which will carry it well along into the winter season, and have a favorable effect upon next year’s crop.

—From The Merchants’ and Planters’ Gazette above mentioned, we learn that leprosy is causing anxiety in Mauritius. The following statement is made in the issue of June 6, 1883: “The Registrar-General, in his last annual report, records that whilst twelve deaths only were attributed to this fell disease in 1868, no less than one hundred and three persons succumbed to it last year in Mauritius.

—Hamakuaapoko Plantation will flume a large portion of its next crop to the mill. A flume with a four inch bottom and beveled sides fifteen inches in width, made of 1½ inch Nor’west will be used. This is somewhat larger than flumes for this purpose are usually made, and is purposely made so, as every drop of water is needed for irrigating purposes, the water being used upon the cane lying below the mill.
The Planters' Monthly.

—A book on Sugar growing, Fertilizing, Drainage, Sugar and Rum manufacture and machinery, with cost of its operation, has been published in Demerara by the Royal Agricultural Society, written by J. Lionarons and others, of which we intend to send for a copy, and will send for more if any one so desires. According to Witaker's Almanac of 1883, the finest sugar in the world is that known as Demerara crystals, and is, in its pure state, the best sugar manufactured.

—Mr. S. T. Alexander has resigned the general superintendence of the Haiku Sugar Company, and Mr. H. P. Baldwin has assumed the management of both the old Haiku and the Hamakuapoko Plantation. Mr. C. H. Alexander has given up his planting contract on the latter plantation, and will devote himself to stock raising on his ranch at Makawao and Kula.

—Mr. W. Y. Horner has purchased an interest in the Kilauea Sugar Company, and Mr. W. Y. Horner, jr., has been appointed manager of the plantation.

SELECTIONS.

THE PERILS OF FRUIT.—A vast amount of money is represented in the annual fruit crop of the United States, the aggregate value of all the orchard products having been $50,876,154 in 1880, to say nothing of the immense crop of small fruits of various kinds. But the importance of fruit is even greater to health than to the purse, and whatever imperils an ample supply of it must be regarded with serious apprehension. The acids and the salts in fruit are of the highest value to the human system, and their generous use, especially in the warm season, may prevent physical prostration under the attacks of a variety of diseases. The general substitution of fruit for pastry as dessert at all times of the year would be both agreeable and healthful.

The failure of the apple crop for two years, with a prospect that the aphis will greatly injure that fruit in New York during the present season, has excited much attention, and the peach and the pear, the next in rank of the orchard fruits, have been in jeopardy for years, the former from the disease known as "peach yellows," and the latter from "blight." It is of the highest importance that scientists apply themselves to the problem of the removal of the perils of fruit. Fortunately, Prof. Penhallow, the botanist and chemist of Houghton Farm, has undertaken the task, and having concluded, as the result of a long course of investigation, that "peach yellows" is the result of starvation, he is now applying himself to the study of pear blight, a disease which he believes to have a similar cause. In peach yellows he detects an excess of lime and a lack of potash in wood and fruit, and in his pamphlet on The Normal Condition of Cellular Structures and Peach Yellows, he gives characteristics of the disease in detail, and prescribes the fertilizers to be applied to the soil to restore the diseased tree to vigorous health.

Much interest was recently excited by the declaration of an Italian naturalist that he can easily remove the insects from Central Park. There is not much faith in his power to accomplish what he proposes, but there is an intense desire to have methods devised to effect that result. Likewise there is a strong sentiment which would
have scientists recognize it as a duty to investigate the whole list of diseases which imperil the fruits of the United States, in order that the health, profit and pleasure of the people may be promoted by an abundance of the most wholesome food eaten by man.—N. Y. Observer.

HARPER ON ROSES.—The ever-blooming roses are the only desirable kind for a small garden, and a dozen or two of these will furnish a liberal amount of beauty and sweetness from June till November. A bed made up of rosy pink Duchess of Brabant, Melville, Empress of Russia and Regulis, the pure white Marie Guillot, Bella and Washington, and the crimson Victor Verdier, Jacqueminent and Aggripine are not only charming, but hardy as well, and will abundantly repay care and culture.

The delicately beautiful and fragrant tea-roses are also prodigal of blossoms; and among the Gloire de Dijon is not only a perfect rose, but an ambitious climber. It has a great many attractions, and what is very rare, the half-opened bud and full-blown rose are equally perfect. There is always a succession of bloom, and the flower does not soon wither; the foliage is a beautiful glossy green; it is a climber and a rapid grower. One bush has in the last ten years covered the side of a house, and is now one mass of bud, blossom and perfect leaf-spray. If possible a south-western exposure should be given it. Safrano, Bon Silene, and the magnolia-scented Devoniensis also belong to this charming family.

Roses are disappointing unless their conditions are thoroughly understood; but these conditions are nearly always possible of attainment. The first is what gardeners call "a stiff loamy soil," highly enriched, and the second a proper degree of moisture. The last quality may be insured by means of an old fruit can, pierced with one or two pin-holes, and sunk in the ground near the roots of each plant. When the can is filled the water will trickle into the ground very slowly through these small holes. A quart can of water will last several days; it should then be refilled. A garden of well-chosen roses, if only a few yards in diameter, yields the best possible returns for intelligent cultivation; and the most successful way of planting such a garden is to order young plants that have never been in bloom, of a florist, as they can be sent hundreds of miles by mail and arrive in good condition.—N. Y. Tribune.

DIGESTIBILITY OF COFFEE AND SUGAR.—M. Leved, in Le Medicin Practicien, gives the results of some experimental investigations made to determine the degree of digestibility of coffee and sugar. To a dog which had eaten 210 grammes of meat he administered 30 grains of coffee in 15 grammes of water. After three hours he killed the dog, and found 145 grammes of meat remained undigested. The coffee, then, had retarded stomach digestion. The abuse of coffee produces dyspepsia; the English and Hollanders, who take tea and coffee in large quantities, are frequently dyspeptic. Coffee elevates the cerebral functions; it has a pleasant general effect, but the local effect is generally bad. M. Leved does not agree with physicians and medical chemists, who think that sugar is hurtful to dyspeptics; citing the case of one of his friends, a dyspeptic for two years, who did not take sugar, and was afraid of it, but commenced taking 120 grammes daily without the slightest bad effect. Having given a dog 80 grammes of sugar after he had eaten 200 grammes of meat, he killed him after six hours, and found no meat in the stomach. After killing the dog which had eaten 200 grammes of meat and no sugar, he found 90 or 100 grammes still undigested.
Sugar favors the secretion of gastric juice. Coffee is unfavorable to it.—Sugar Bowl.

EXPERIENCE AND INCIDENT.—There is a universal law by which the aerial portion of plant-growth seeks above all to rise. Under it the higher or more advanced bud (or seed) takes precedence. Although last formed, it is first to unfold. We see this in every shoot that opens buds in the spring; in every graft cut from the end of a shoot, as compared with those cut from lower on the shoot; in every sprouting tuber, in wheat sprouting on the stock, or a corn ear the wet, warm ground. Of two ears on the same stalk the upper will be the larger; so will the upper or middle leaves; the lower leaves, and the buds formed at their bases in wood-growth will be small, owing to growth rushing onward past them, unless man interferes, and by stopping this upward rush by a timely pinch, as in grapevine and cordon culture, arrests the flow and compels it to fill out the first-formed leaves and buds.—N. Y. Tribune.

VALUE OF THE SUNFLOWER.—Agriculturists claim it is the best egg producing food known for poultry, keeping them in a thriving condition and largely increasing the production of eggs. Every poultry raiser who tries it will find that this seed is the best food known for glossing the plumage of fowls, and is almost indispensable to those who want to fit their birds for exhibition to the best advantage. The Russian sunflower is easily raised, requires very little care, can be grown in fence corners, or other places difficult to cultivate. Its production of seed is immense, yielding often at the rate of one hundred bushels to the acre. It should be planted in hills four feet apart, any time from the 10th of May to the 1st of July. Three quarts of seed will plant an acre.—Scientific American.

MADAGASCAR’S EVIL GENIUS.—The chief seaport of Madagascar, says Mr. Cameron, the British Consul at that port, is ruined by rum. “The inferior and poisonous rum of the Mauritius sugar estates is shipped to Madagascar, where it is retailed at fourpence the quart bottle. To stroll through the native quarter of the town is to stroll amidst a host of rum casks and among an intoxicated population.”—S. F. Bulletin.

THE PULSE OF ANIMALS.—In horses the pulse at rest beats forty times, in an ox from fifty to fifty-five, and in sheeps and pigs about seventy to eighty beats per minute. It may be felt wherever a large artery crosses a bone, for instance. It is generally examined in the horse on the cord which crosses over the bone of the lower jaw in front of its curved position, or in the bony ridge above the eye; and in cattle over the middle of the first rib, and in sheep by placing the hand on the left side, where the beating of the heart may be felt. Any material variation of the pulse from the figures given above may be considered a sign of disease. If rapid, hard, and full, it is an indication of high fever or inflammation; if rapid, small, and weak, low fever, loss of blood, or weakness. If slow, the probabilities point to brain disease, and if irregular to heart troubles. This is one of the principal and sure tests of the health of an animal.—Scientific American.

An English florist gives great credit to soot, which he uses constantly, by placing a bag of it in water, and applying the liquid. Besides its excellent fertilizing effect, it greatly assists, he thinks, in warding off the attacks of insects, and the London Gardeners Chronicle says his plants are “vigorous, clean and wonderfully healthy.”—N. Y. Observer.