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BOARD OF MANAGEMENT.

THE usual monthly meeting of the Board of Management of the Jamaica Agricultural Society was held at the office of the Society, No. 11 North Parade, Kingston, on Thursday, 19th May, 1910, at 11.40 a.m. Present: Hon. Geo. McGrath, Messrs. A. W. Douet, C. A. T. Fursdon, A. C. L. Martin, E. W. Muirhead, Conrad Watson, and the Secretary, Jno. Barclay.

As the President and Vice-presidents were engaged at the Legislative Council, Mr. McGrath was voted to the chair.

Apologies for absence were received from the Archbishop and Mr. Craig

Hon. Dr. Pringle and Mr. Craig intimated that they would be absent from the Island for a period.

The minutes of the previous meeting being published in the current month's JOURNAL were taken as read and confirmed with one alteration—Mr. Muirhead's name being substituted for Mr. Fursdon's name as the mover of the motion *re* increase of affiliation fee.

The Secretary submitted the following matters arising out of the minutes:—

(a) **Pound Laws.** Papers *re* this matter which had been circulated to the Staple and Minor Products Committee, were submitted with members' comments. As some of the members most interested in this matter were not present and would be leaving the Island for a time, it was resolved to hold the matter over till October, as nothing could be done, at any rate, in the Legislative Council this session.

(b) **Railway Freights.** The following letter from Mr. F. G. Sharp was read:—

Trout Hall, Chapelton, 9th May, 1910.

About railway freights for oranges, I agree with Mr. Craig in everything, except where he says that oranges from 1st September to 30th November should be carried at the lower rate of freight.

What is wanted is not to induce planters to set out orange trees, but to enable them to get something for what they already have, and to give paying employment to that class of person that handles the fruit.

A low rate of freight would not induce any larger shipments from 1st September to 13th October for except from accident, every orange sufficiently ripe by 15th October, is shipped by that time, as the price abroad up to that time makes the business paying.

Our oranges are most perfect for shipment from 15th October to 15th February, and these are the months that they have to compete with Spanish oranges, and however skilfully oranges are grown, there will always be a large quantity available at this time, which the grower would be glad to dispose of for 3d. per box on the trees, and the shipper glad to pack and ship for an average profit of the same amount, and if the railway freight can be so arranged so as to enable us to have a better chance of competing with the Spanish fruit, it would be of great benefit to the Island, and it should be borne in mind that the Jamaica orange is generally considered to be a better fruit than the Spanish orange.

The Director of the Railway quotes the price of a box of oranges landed in England at 8s. My oranges, already established, are all cared and cultivated by contract. The rates I pay for the fruit on the trees are 10½d. per box from June to August inclusive, 4½d. per box for September, 1½d. for October, and nothing for the other seven months. One penny per box during those seven months would be ample reward for any capital invested.

This would make the cost of a box of oranges landed in England from Trout Hall, without railway and shipping freight 2¼d.

	Per box	
	s.	d.
Value of oranges	-	-
Picking	-	-
Curing and packing	-	-
Box and fancy paper	-	-
Oranges to railway	-	-
Incidental expenses	-	-
Total	-	-

With railway freights for May Pen at 7½d. and steamship freight to London and Liverpool 2/6, this brings the present cost to me to 5/6, and I am twenty miles from the railway.

I think that during the bad months the railway could reasonably be expected to carry oranges at the same rates as they carry spars, for they are both often put in the same kind of waggon. This would make the rate for oranges from May Pen about 3½d. per box, and I would advocate the rates from 15th October to the end of February to be 3½d. per box, and 7½d. per box for all the rest of the year.

It occurs to me that if the shipping companies found that the railway reduced their rates for the period named, they might be induced to make some reduction also.

If a rate of 2s. per box could be got from them, that, with the reduction of railway freight, would make the lowest value of a box of fruit landed in England 4/8, and I think would induce shippers to increase shipments at the end of the year.

I grow about 5,000 boxes of fruit annually, of which I ship not more than 1,600. If I got these terms I would increase shipment from fifty to 100 per cent."—(Sgd.) F. G. SHARP.

Mr. Fursdon, who is acting as Secretary of the Special Railway Committee, reported that he had not been able to get another meeting and had not yet received all the information he expected. As the Archbishop, Mr. Craig and others who were interesting themselves in this matter and were members of the Committee, would be

leaving the Island, he suggested leaving the matter over till later in the year. In the meantime he would return some of the papers with regard to particular matters, other than the subject of the general policy of the Railway, to the Secretary for attention. This was agreed to.

(c) **Instructors.** The Secretary submitted the report of the Instructors' Committee regarding the appointment of two new Instructors as follows :—

A meeting of the Instructors' Committee was held at the office of the Society on Wednesday at five o'clock to suit members engaged at the Legislative Council. Present: The Hon. Director of Agriculture in the chair, the Hons. L. J. Bertram, D. Campbell, Mr. A. C. L. Martin, and the Secretary, and beg to report :

That minutes of the previous meeting held on 20th April which, as they had been published in May JOURNAL, were taken as read and confirmed.

That the Secretary reported that as instructed, he had advertised in the *Gleaner*, *Telegraph and Guardian*, and the *Jamaica Times*, for an Agricultural Instructor for (1) St. Catherine and (2) Hanover and Westmoreland, and now submitted two applications for St. Catherine alone, sixteen for either district, and nine for Hanover and Westmoreland.

That the Chairman intimated that Dr. Pringle and Mr. Simmonds had informed him that they could not attend the meeting held at that hour, but had suggested that as they would like to assist in making a selection, another meeting be held at nine the following morning, when they would attend: meantime the members of Committee present, could examine the applications and choose a short list of the most likely applicants to be further considered.

That the applications were then considered and the following selections made :—

(a) For St. Catherine:

1. H. L. Mossman, Carew Castle, Bog Walk P.O.
2. George A. Payne, Stony Hill P.O.
3. M. E. Taylor, Half-way Tree P.O.

(b) For Westmoreland and Hanover :

1. Eustace Hart, King's Valley, Grange Hill P.O.
2. J. G. Dorán, Siloah, Maggotty P.O.
3. S. A. Schleifer, Metcalfe, Brainerd P.O.

That it was resolved to recommend to the Board of Management that the six applicants selected should submit themselves to a practical test of their capabilities at Hope Gardens before a Committee of Selection consisting of Mr. Bertram, Mr. Campbell, Mr. Simmonds and Mr. Williams, when they would be required to give a twenty minutes' talk to the students of the Farm School,—Subjects :—Banana and Cocoa cultivation, —the particular branch to be left to the applicant,—with a further twenty minutes' demonstration in practical field work.

That the Selection Committee make their recommendations to the Instructors' Committee for confirmation, as the next meeting of the Board will not be until 16th June.

2. That it was resolved also to recommend that the remuneration of Mr. E. J. Smith, Instructor for Southern Manchester and Southern St. Elizabeth, be increased from £150 to £175 to enable him to visit and work more in South Manchester and on the Central Experimental Plots there.

3. That the matter of providing and circulating books on Agriculture among the Instructors be left over, but it was agreed to get prepared for issue simple treatises on our principal crops containing information on practices found adapted for Jamaica.—(Sgd.) H. H. COUSINS, Chairman.

A meeting of the Instructors' Committee was held at the office of the Society. Present: Dr. Pringle, Mr. Simmonds, Mr. Campbell, and the Secretary, Dr. Pringle in the chair, and beg to report:

That the minutes of the meeting held the previous evening, were read and the members agreed to what had been done.

That Dr. Pringle suggested there should be no distinction in the remuneration offered in St. Catherine and Hanover and Westmoreland, and that both Instructors, both being new men, start at the rate of £200 per annum, with the prospect of advancement according to merit. It was agreed to recommend this.—(Sgd.) H. H. COUSINS, Chairman.

The Board confirmed these arrangements.

(d) **Affiliation of St. Thomas Planters' Association.** The Secretary reported that the St. Thomas' Planters' Association had sent a copy of their rules and these appeared to be in accord with the rules of the Society, but he had not, however, received a full list of members. He was instructed to inform the Secretary that when the list of members was received so that the rules could be reported upon as having been followed, the affiliation of the local Association would be granted.

(e) **Increase of Affiliation Fee.** Mr. Muirhead said that according to the notice he had given at the last meeting, the affiliation fee should be increased to 20/-, he was not wedded to this amount, but he thought it should be increased as the number of Branches had increased from ten to sixty-seven, and all that they contributed was £16.

Mr. Martin said he thought the fee should be increased but on a sliding scale, so that the more members a Branch had the larger should be the affiliation fee.

After discussion it was agreed to put the following proposal before the Half-yearly General Meeting: that any local Society with a membership of thirty should pay a fee of 5/- per year, for a membership of thirty to fifty, a fee of 10/-, and for all over fifty, a fee of £1. Mr. Fursdon seconded and the proposal was agreed to.

(f) **Secretary's Leave.** The report of the Office Committee on office assistance while the Secretary was on leave, was submitted as follows:

The Office Committee met at the office of the Society on Wednesday, 18th May, at 4 p.m. Present: His Lordship Bishop Collins, Hon. L. J. Bertram, C. A. T. Fursdon and the Secretary. Dr. Pringle and Mr. Campbell could not be present as they were in attendance at the Legislative Council, and Mr. Haggart was engaged, being Direct Line week.

Mr. Bertram was voted to the chair.

The Secretary stated that as directed by the Board of Management, he had prepared a comparative statement of the office work for the years 1898, 1900, 1905, and 1909, with a full statement of the present work, which had been circulated but had not yet been returned. All the members present had seen the papers. After discussion it was agreed to re-

tary's.

duties during his leave of absence at a cost not exceeding £54, there being funds available for the purpose.

The Committee recommended that the services of Mr. John Stewart, who has already acted in this capacity on a former occasion, be obtained at a remuneration not exceeding £3 per week. This allocation would enable Mr. Stewart to be a month in the office before the Secretary goes on leave to pick up the details of work.—(Sgd.) L. J. BERTRAM, Chairman.

After discussion the report was confirmed and the Secretary instructed to make arrangements accordingly.

Mr. Fursdon said that as a member of the Office Committee he would state that he intended to bring before the Board the question of some re-organisation of the office after the Secretary's return.

(g) **Amendment of Rules re Branches.** The Secretary said that he would submit suggestions in this connection for discussion at the Half-yearly General Meeting.

(h) **Woodpeckers.** A letter was submitted from Mr. J. T. Baylis, Berkshire Hall, Linstead, reporting ocular evidence of these birds eating cocoa beans.

The Secretary was instructed to publish this in the JOURNAL and ask readers for further information on the subject.

(i) **Banana Disease in Central America.** Letter from C.S.O. No. 4683/5516, of date 13th instant, was submitted as follows:—

I am directed by the Governor to acknowledge the receipt of your letter of the 22nd ult., bringing to notice the possible danger of the introduction into this Island of a disease of the banana plant said to exist in Trinidad, Surinam and certain Central American countries, particularly Costa Rica, Bocas del Toro and Nicaragua.

In reply I am to transmit for the information of the Board of Management of the Jamaica Agricultural Society an extract from a minute by the Director of Agriculture on the subject, and to ask you to be so good as to say whether the Board would recommend the issue of a proclamation under Law 25 of 1891, prohibiting the importation of banana suckers, and if so, from what countries?

Extract from Minute.

The Hon. Colonial Secretary.—The relentless spread of banana disease in Central America is one of the greatest safeguards for the future stability of Jamaica's banana trade.

I regard this as a material factor in justifying the extension of the Railway to Chapelton. In view of the fact that the resuscitation of the bananas in Central America may be dependent on frequent supplies of hardy Jamaica suckers, it might be well to have a special law prohibiting *in toto* import and export of banana suckers.—(Sgd.) H. H. COBINS, Director of Agriculture. 3/5/10.

The Secretary also read extracts from an article submitted to him by the Instructor, Mr. H. Q. Levy, for publication in the JOURNAL, giving personal evidence of the existence of the disease in Costa Rica. This article would be published in full either in June or July JOURNAL, according to space.

The Secretary was instructed to inform the Government that the Board was strongly in favour of prohibiting the importation of banana and plantain suckers from Central and South America and Trinidad, and also all implements of labour used in agriculture, but were not in favour of prohibition of the exportation of banana suckers. The matter of an export duty on banana suckers, however

was thought worthy of further consideration and was referred to the Staple and Minor Products Committee.

Shows. Mr. Muirhead said that arising out of the minutes, he thought there were too many shows being held in the same parish and too near to each other as regards the time of the year. If these wanted the services of the Secretary and the Instructors, he thought some effort at system should be instituted and have the shows, if they were held, more spread out.

The Chairman said they might refer the matter of trying to regulate shows better to the Shows Committee.

This was agreed to.

The following letters from the C.S.O. were submitted :—

(a) *Re* expenses of "authorised persons."

No. 4232/5471, 6th May, 1910

I am directed by the Governor to acknowledge the receipt of your letter of the 22nd ultimo, No. 234, and in reply to inform you that His Excellency has approved of the proposal to allow a small crown to be worn as a badge by persons authorised under Law 4 of 1909, to arrest and deal with persons suspected of praedial larceny, and that these crowns will be supplied in due course by the Inspector General.—(Sgd.) ROBERT JOHNSTONE, Asst. Colonial Secretary.

No. 4264/5472, 7th May, 1910.

I am directed by the Governor to acknowledge the receipt of your letter of the 2nd ultimo, No. 233, and to inform you that the witnesses' expenses of persons authorised under Law 4 of 1909 to arrest and deal with persons suspected of praedial Larceny, would be allowed by the Court according to their class, as stated in the Schedule to the Witnesses' Expenses, Law 9 of 1909, as in the case of any other person giving evidence.

2. I am to ask that you will be so good as to say whether you have been informed that in the cases mentioned of arrests made and convictions secured by such authorised persons, expenses incurred in attending at Court have been refused.—(Sgd.) ROBERT JOHNSTONE, Asst. Colonial Secretary.

In this connection the Secretary said that he had two communications—(1) letter from Mr. R. A. Clare, Secretary of Cambridge Branch in St. Andrew, as follows :—

Sir.—Yours of the 9th instant, No. 520 I received, and in reply, beg to say that Harley, our authorised constable under the revised Praedial Larceny Law, was not paid for his services. He informed me that at the trial of the man he arrested, the officers of the Court, including the Inspector of Police, were at sea when he applied for pay. The Inspector told him (Harley) to write him a letter on his claim for payment, which he did, but he has had no reply.—(Sgd.) R. A. CLARE, Secretary, Cambridge Branch.

Mt. Hermon, Gordon Town, 12th May, 1910.

(2) *Re* Glengoffe Branch.

Glengoffe Branch.—Extract from Mr. Briscoe's report :—"The question of the new Praedial Larceny Law and its workings was brought before the meeting by one of its members, who had been appointed by the Society to act as special constable. He reported that recently he brought a thief before the Court and obtained a conviction against him; this seems to have created jealousy, and the constable informed him that he (the constable) had been told by the Inspector of Police not to assist the spe-

cial constables in the work. It was decided to refer the matter to the Secretary of the parent Society."

The Secretary was instructed to write the C.S.O. informing them what Mr. Clare reported and to make further inquiry of Glengoffe Branch as regards the statement made.

(b) Importation of rubber tapping knives.

The Secretary reported that in reply to his request for the refund of duty paid on two rubber tapping knives imported, the Government replied that it was not considered necessary to alter the operations of the Customs law in this case. Duty would therefore require to be paid on all rubber tapping knives imported.

Importation of Cattle. A letter from Mr. Fursdon was read as follows :—

Sir, I have been informed that some butchers' stock were landed in Kingston during January last from abroad, and were kept in the city for some considerable time and were eventually sold.

I am under the impression that all horned stock, other than for breeding purposes, are required by law to be placed in quarantine for fourteen days at the station at Rock Fort. Will you kindly find out if this was done, and if not place that information before your Board of Management.
—(Sgd.) C. A. T. FURSDON.

The Secretary was instructed to make investigation into this matter and report.

Cotton. The Secretary stated that Mr. Watson at the previous meeting gave notice that he would ask for particulars as to how the money granted by the Society and that provided by the British Cotton Growing Association for the experimental cotton plots, had been spent, and the results generally. He now submitted reports of the cotton plots and statement of accounts. He was not yet able to give the total results as the cotton was not yet all reaped, having been planted late, but he hoped to give these results at the next meeting. They had not spent all the money, but Mr. Levy reported that it would be of little service continuing the plots in Trelawny as the people there could not be interested. Mr. Arnett had written that he would like to carry on some plots in St. Ann, while Mr. Smith had had favourable results in St. Elizabeth. It was therefore agreed that experimental plots on the sea board of St. Ann and St. Elizabeth should be continued.

Experimental Plots. The Secretary submitted reports by Mr. Smith on the Central Experiment Plots and small settlers' plots together with statements of accounts. He was directed to publish the reports and to furnish the statement of accounts to the Audit Office.

Grants to Shows. The following applications for grants to shows were submitted :—(a) Lucky Hill Brauch, at Goshen ; (b) St. Mary's Agricultural Show at Nashville Common.

After inquiry by the Board as to why these shows were being held so close together in the same parish and almost at the same time, and whether the rules had all been fulfilled, the grant to

cation had been given of the intention to hold a show and no application was made early enough.

Reports and Itineraries. The Secretary submitted the reports and itineraries of the Instructors, which were directed to be circulated as usual.

Half-yearly General Meeting. The date of the Half-yearly General Meeting was fixed for the 16th June, to be held at 11.40 a. m., before the meeting of the Board of Management to be held on that date at the close of the Half-yearly General Meeting.

Rubber Discussion. The discussion on rubber was postponed to the Half-yearly General Meeting, as the Hon. Dr. Pringle, the mover of the motion, was not at the meeting, being engaged at the Legislative Council.

DEATH OF THE KING.

The Chairman, Mr. McGrath, said, that since they last met a great calamity had happened to the British Empire as well as the whole civilised world, in the death of His Majesty King Edward VII. The Board would pass a resolution, he was sure, expressing their great sorrow and their sense of the great loss they, in common with all their fellow subjects, had sustained, their sympathy with the widowed Queen Mother, and their devoted allegiance to King George V.

The meeting unanimously agreed that a resolution to this effect be forwarded to His Excellency the Governor, for transmission to the Secretary of State for the Colonies.

The following resolution has accordingly been sent:—

"We, the President and Members of the Board of Management of the Jamaica Agricultural Society, as representing the Agricultural Community of our ancient Colony, at this the earliest meeting of our Board, desire respectfully and loyally to express to Your Majesty our deep sorrow at the death of our late well-beloved King and Supreme Lord, King Edward VII., and humbly to tender our heart-felt condolence with Your Majesty, with the Queen, the Queen Mother and the other members of the Royal Family, in Your grievous personal bereavement.

Our late Sovereign ever showed his personal interest in the welfare of this Colony, and in the important industry with which we are directly concerned. He gave us material proof of his earnest desire to promote our prosperity, and we look back with pride and gratitude on his beneficent reign.

We offer our humble and loyal congratulations to Your Majesty on your accession to the Sovereignty of our Empire and, assuring you of our faithful allegiance to your Throne and person, we hope and pray that Your Majesty may enjoy length of life and happiness in the discharge of the duties of your exalted position, and that Your Majesty's reign may exhibit continued growth and peaceful development in all that makes for the prosperity of your people and the strength and dignity of your Empire in the Island of Jamaica and in every part of your Dominion."

New Members. The following new members were elected:—Jas. Davis, Canal Zone; Reginald Ferguson, Grenada; Wm. Hagley, Grenada; J. Hamilton, Kingston; Haddon F. Shand, Montserrat, and J. S. Wilson, Bocas-del-Toro.

The meeting adjourned till Thursday, the 16th June, 1910, at 11.40 a.m.

NOTES FROM MY APIARY.

THE swarming season is now on and the bee-keeper whose aim is surplus honey rather than increase, is kept busy devising ways and means to keep the bees at work. That means keeping down swarming as much as possible, and so manipulating those colonies that do swarm that they will continue work in the supers. Apart from giving the bees plenty of storage room, and large entrances during the hot months, I have never practised any of the plans given in the American bee journals for the *prevention* of swarming. When run for extracted honey, and with plenty of room in the supers, not more than half of our colonies will swarm, and those that make no attempt to swarm will work much better than colonies that have been treated for the prevention of swarming.

There are several ways of treating colonies that swarm so as to prevent increase, and I will mention two that I have used with success—(1) Hive swarm on starters and place close beside parent colony with entrance in the same direction. Destroy all queen cells found in parent colony, and nine days afterwards do it again. Two or three days after hiving the swarm, remove three frames, if it is an eight-frame hive, five, if the hive is ten-frame, and put in an equal number of plain division boards.—this will insure the bees filling the remaining frames with worker comb. As soon as these combs are completed, remove the division boards and fill hive with combs and bees taken from the brood chamber of parent colony. The supers from this colony can now be given to the swarm, and the remaining combs and bees from the brood chamber used for forming nuclei, or the bees can be added to the swarm and the combs used in supers. This plan gives all worker comb in the brood chamber and if the queen is to be superseded, she can be removed before the full number of combs are given to the swarm (but after they have filled their frames with comb) and another *laying* queen introduced.

(2) Hive-swarm on starters as above. Remove parent colony from its stand and in its place put the swarm, placing the removed colony on top with a queen—excluding honey-board between, and then destroy all queen cells. All supers that were on parent colony are to be replaced. About nine days after the swarm issues, queen cells (if any) are to be again destroyed and the honey-board removed, thus giving the queen access to two brood chambers, a queen-excluding board being used above to prevent her going into the supers. Very often there will be no comb (or very little) built in the lower brood chamber, and this chamber may be removed, but on

the whole, it is better to let it remain until the swarming season is over. These plans have only been used when running for extracted honey; whether they would succeed as well in connection with comb-honey production I am unable to say.

If increase is desired, a good plan is to hive the swarm on starters, and place it beside the parent colony with entrances close together. After they have their combs about half or two thirds completed, give them the supers from parent colony and remove this colony to a new stand. This gives the swarm all the field bees and prevents second swarms, but no queen cells must be allowed to hatch in parent colony until after its removal to a new stand.

For the last month or so in this locality, the bees have been storing a surplus from cats-claw, wild coffee, willows, etc., and at present they are hard at work on the guinep and black mangrove blossoms. The dogwood blossoms are coming out now too and the trees ought to be in full bloom in two or three weeks; we are hoping for fair weather and a good honey flow to make up for the loss of the logwood bloom earlier in the season owing to unfavourable weather.—R. C. H.

Falmouth, 28th April, 1910.

The following corrections in Mr. Butcher's notes in April number are necessary:—In two places brood "next" should be brood "nest," and 50 per cent should be 5 per cent.

WHITE SORES IN CALVES.

[We have been asked to get advice as to the cause of White Sores in calves, so common on some pens. We print two replies which should be useful to enquirers.—ED.]

I have your letter asking if I have any experience of White Sores or Sores in calves, and what I think is the cause.

I ought to say that I have personally dealt with no cases for a number of years, but had experience of it in 1897, when book-keeping was in a pen in this immediate locality, and have had one or two cases since, and have seen it on other pens.

I have never been able to arrive at the original cause, but my observations lead me to believe it is hereditary; and where it

is of this epidemic form on a pen which has previously been free from it, once put it down to the bull, and would not again promote our account, no matter how fine an animal he may be, and on his behalf he is in perfect health. In the instance above

We offer our best as a particularly fine animal (half-bred Hereford) in very good health yet he had a sore on his forehead. So far as I can remember at this time, the discharge of the year was one got accidentally by a bull of our faithful ally. Majesty's reign may exhibit the progeny of an old cow which died in all that makes for strength and dignity of your Majesty's part of your Dominion.

medically, or where there are occasional epidemics of the herd,

whether from neglect, inbreeding, bad breeding, or whatever cause; and should at once start severe weeding out, keeping only the strongest and most active heifers, and paying particular attention to the selection of a vigorous bull of sound constitution, with no possibility of any relationship whatever. I should also endeavour if possible, to find new pasture for the herd and rest the old ones; and if overstocked, endeavour to keep down the number of the herd for a time, change pastures frequently, and so improve the vigour of the herd.

(3) I would never knowingly breed from any animal which had at any time been afflicted with White Sores.

I may possibly be all wrong, but not knowing the primary cause of the disease, I only give the conclusions which my experience and observation of the disease has led to.—J. HIRST.

Mocho P. O.

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With regard to your inquiry regarding the cause of 'White Sores,' some time ago there was a Commission appointed to inquire into the matter in Ireland. I remember reading about it in the *Live Stock Journal*, date forgotten.

The finding of the Commission was that White Sores were the result of a microbe taken into the system through the raw umbilical cord after birth. Immediate disinfection by antiseptic treatment as a preventive, was recommended.

I find a solution of Formaldehyde (one part to fifty of water) a very useful dressing for the sores, which if kept clean and dressed twice a day with the solution, will generally yield to the treatment.

The same solution used as an antiseptic dressing to the umbilical cord at birth, will be found very good.—ADAM ROXBURGH.

Walkerswood P. O.

FLIES.—Readers should not forget that valuable hint that a teaspoonful of Formalin (to be got from Chemists and which is a powerful antiseptic) added to a saucerful of water, with a sprinkling of sugar added, will kill all flies that come near it; they do not actually require to touch the formalin. Ants too and mosquitoes are killed by this simple mixture which is not poisonous to human beings, save in excessive quantities.

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BARLEY WATER.—Wash an ounce of pearl barley in cold water till the fine flour on the outside is quite removed. Boil it for five minutes in a pint of cold water, which must be thrown away. then pour on a quart of water, and let it boil down to a pint. Strain it, and sweeten with sugar or honey, then flavour with a little lemon juice if it is required to be acid. To give a pleasant flavour, a piece of lemon rind or cinnamon may be boiled with it.

THE VALUE OF LOCAL SHOWS.

It is interesting to read the opinions on Shows from other colonies—the following is from the *Queensland Agricultural Journal*:

At an Agricultural Conference held at Warwick, Queensland, a very excellent paper was read on "The Functions of Agricultural Societies."

There are those who would belittle the work done in the interests of agriculture and stock-breeding, and sum up their so-called arguments by saying that the only function exercised by the country societies is the holding of an annual show. We do not care to enter into disputation on this opinion, erroneous as we hold it to be. Whilst holding that there are too many shows and too much sameness about them, most agriculturists yet recognised their value to the community, only asking that they should be rendered more attractive by the introduction of new features into them. Mr. J. Hudson, Rosewood, maintained that those who said that there was not much to be learned from shows, big or little, were not real farmers. If he did not take a prize for a horse he might show, he naturally went to other shows to see where he was wrong. The same thing applied to the cattle and farm produce sections. If a farmer wanted to teach his son anything in connection with agriculture, let him take him round a show, and point out to him the animals and implements which have taken prizes, and indicate the points that are good and those that are bad. The boy would never forget the lesson, and he will have learned something that will be of service to him when he becomes a man. On the value of country shows, Lord Middleton wrote as follows in the *Live Stock Journal* in 1901:—

That the agricultural show system is beneficial, and of value to agriculture in general, is a usually admitted fact, though occasionally I have heard the reverse opinion expressed, with added gloomy forebodings that the heyday of such shows is over.

My own opinion is that agricultural shows are of the greatest value, and at no time more so than the present. It has probably occurred to those who have given the subject unprejudiced attention, that the chief value of these competitive exhibitions is threefold—namely, first, the opportunity they give of comparison; secondly, the emulation they excite; third and last (and by no means least), their use as an advertising medium.

The dairy, the shoeing, the beekeepers' and seedsmen's stands, also the poultry demonstrations, are all of practical importance, and all gathered in so concentrated an area that it is possible at least to run through them within the limits of a day's outing, and the man would have indeed a clouded eye and an obtuse mind who was unable to gather fresh ideas, and take some, at any rate, away with him.

In addition to those named are all the smaller exhibits—small, but none the less important to the agriculturist: fences, troughs, crates, ramps, and lesser tools such as rakes, forks, sledges, etc.

all these can be inspected and studied alike by the small crofter, the 1,000-acre occupier, or the large landed proprietor.

Some people cavil at the number of small shows in certain country districts. I myself have been disposed to question whether the number was not excessive, as they seem at times to overlap one another; but, doubtless, this is an ill which rights itself, for those that do not pay will disappear. Our larger shows monopolise so much time and expenditure that it is not everyone who can afford to patronise them, extending as they do from two to eight days. Now, at the little one-day local show, the small farmer can start in the morning from home, take his prize, and be back again with his animal the same evening; he is not scared here by what is termed the professional exhibitor, but can meet his like on fair grounds. It brings to the front many a small breeder, and many a good animal, who, in their turn finding their ways thither, act as feeders to the larger shows. Much responsibility, however, rests with the promoters and councils of these local shows in initiating classes and providing adequate prizes for bringing out their district breeds to the best advantage; much lies with them in encouraging the right sort of stock, suited to the requirements of the day, for no doubt we agriculturists must travel with the times. The services of the best judges should be carefully secured, well-known men of practised judgment, who can be depended upon to recognise and pick out the correct stamp. Through these means the local shows will, as I suggested above, act as feeders to the larger ones, and the whole work together in framing our national show system.

CASSAVA AND FARINE.

We have helped as much as we could in the endeavour to get a cassava industry for making starch developed in the Island, yet all the time we have felt that we really do not require to wait on outside capital coming in, either to establish starch factories or buy dried cassava, as we know that the price of cassava starch in the world's markets competing with potato starch, cannot warrant the price asked for cassava by many present prospective growers, viz.: 2/6 per cwt. in the field. Figuring on a 5-ton yield of roots and 25 per cent. of starch, would give say, one and one quarter ton starch at £14 per ton in London, — £17 10s.; the first cost of roots say even at 40/- per ton would be £10; there is transport, manufacturing and other expenses, so that judging by all this and the experience of the two starch factories already working, starch cannot be produced at a profit if the cassava had to be bought at 2/- per cwt. in the field. Nor can such a high price as £14 per ton be depended upon.

Now we import farinaceous foods to an enormous extent,—enormous, considering our population and that we are an agricultural and food-producing country, producing foods for human consumption, and that large tracts of the Island do not produce such export

able crops as we presently make money from. Of flour we import £245,000 worth and of cornmeal, £37,000 worth, rice, £50,000, besides such horse-feeds as corn, £47,000, oats, £11,000. That is about £330,000 worth of flour, cornmeal and rice are imported here, in addition to small quantities of prepared foods put up in packets.

Now cassava is a good food, as a root, better than Irish potatoes, and possessing besides, the valuable quality of being made by a very simple process,—which anyone can do—into meal. To make flour from wheat, and meal from oats, requires elaborate processes, and even meal made from corn by hand is a laborious and tedious process. Generations of people in the West India Islands, long before wheat flour was brought here in the quantities it now is, and long before it was known at all indeed, had as their chief food cassava farine, and to this day, the Indians of Central America and South America, live on farine as their staple food, and they are strong and healthy people, able to do heavy, prolonged, physical labour.

Now, why should we then, with our boasted capabilities for raising cassava by thousands of tons, require to depend for our farinaceous food on shop-flour and cornmeal, and whenever a pinch of drought affects us, be obliged to live on shop stuff and get in debt over it? Why, the dry districts should be exporting farine to other parts of the Island all the time!

Now we wish to figure it out:—Five tons of cassava roots from an acre of land (which should be the minimum from a well-cultivated acre), will give about one and one-quarter tons of starch, the making of which is elaborate and prolonged and therefore expensive, process. This is worth in foreign markets £14 per ton or 1½d. per pound, therefore in quantity would probably not be worth more than £10 here, if it was a large industry and the product was bought by merchants to be shipped. But five tons of cassava roots made into farine will give nearly one and three-quarter tons, the process of making which is cheap, and this product is not easily spoiled and made unmarketable like starch. Now cornmeal sells wholesale at £1 per 196-lb. barrel, and flour at £1 10s. per 196-lb. barrel. Cornmeal is sold retail at 1½d. per pound and flour at 2d. per pound; in the country parts dearer than these figures. From one ton of cassava roots = 2,240 pounds, we get say 746½ pounds of farine, and this at 1d. per pound gives us £3 2s. 2d.; five times this gives £15 10s. 10d. per acre, less cost of labour. But pound for pound weight farine goes further than cornmeal; it swells even more than rice.

We think farine could be put in the market on a general scale at the price of 1d. per pound wholesale, to be sold retail at 1½d. to 1¾d. per pound.

Our chief object, however, is to draw the attention of those who have cassava in quantity, to the economy of farine, that they cannot find sale at once for to make it into farine. We have used it regularly in porridge, puddings, etc.,—have used it for feeding dogs and fowls, and when we can get it in quantity, even at the

same price as cornmeal, will use it again. At present we use farine (made by Mrs. Fray) for porridge every other morning, and we use cassava "bitty" partly for feeding fowls, so that our advocacy is not all theory.

IMPORTATION AND OTHER REGULATIONS.

WE publish here some of the import regulations of other colonies. Note the Transvaal regulations regarding imports of Bees and Bee Products :—

Importation of Live Stock into Canada.—An Order-in Council, dated 30th November, 1909, has been issued which rescinds the previous Order-in-Council of 14th January, 1907, together with all amendments thereto, and substitutes amended regulations in lieu thereof.

These amended regulations provide *inter alia*, that persons contemplating the importation of animals into Canada from any part of the world (except the United States and Newfoundland) must first obtain a permit therefor from the Canadian Minister of Agriculture.

The importation, by sea, into Canada, of animals from all countries (other than the United States, Newfoundland, and Mexico), is prohibited, except at the following ports :—Victoria, Vancouver, Quebec, St. John, Halifax, and Charlottetown, and such other ports as may hereafter be indicated by the Canadian Minister of Agriculture.

Animals imported *via* United States ports must be accompanied not only by the necessary health certificates from the country of origin, but also by a certificate of quarantine or inspection signed by a Veterinary Inspector in the United States Bureau of Animal Industry.

All animals imported from countries other than the United States, Newfoundland, and Mexico, must be accompanied by the certificate of a qualified veterinarian and of the local authority of the district whence they came, to the effect that no serious infectious or contagious disease has existed in that district for a period of six months prior to their shipment.

Animals imported from the United States, Newfoundland, and Mexico, must be accompanied by a statutory declaration or affidavit made by the owner or importer stating the purpose for which the said animals are imported—viz., breeding, milk production, grazing, etc.

The importation of branded or range horses, mules and asses, other than those which are gentle and broken to harness or saddle, is prohibited.

A quarantine of thirty days shall be enforced upon cattle imported from the United Kingdom, counting from the date of arrival at the quarantine station, and a quarantine of ninety days, counting from the date of clearance of the vessel from the port from which

the cattle were embarked, when imported from other countries (except the United States, Newfoundland, and Mexico).

In the case of sheep, goats, and swine, a quarantine of thirty days (counting from the date of clearance of the vessel from the port at which they were embarked) will be enforced, when imported from all countries, other than the United States, Newfoundland, and Mexico.

Importation of Cattle into Ceylon.—The *Ceylon Government Gazette* of 31st December, 1909, contains a copy of an Ordinance (No. 25 of 1909) entitled "The Contagious Diseases (Animals) Ordinance, 1909," which repeals the "Cattle Diseases Ordinance, 1891," and enumerates the diseases which will cause any animal or cattle suffering therefrom to be considered as diseased, and provides for the declaration of infected areas. Any vessel arriving with animals or cattle from a port or place declared by the Governor to be infected, may be placed in quarantine, and if any vessel arrives with diseased animals or cattle on board, such animals, etc., may be destroyed, with or without compensation, as the Governor may decide.

No person may import, or cause to be imported, into the Island any animals or cattle from any port or place proclaimed to be a port or place in which disease is known to prevail.

Importation of plants into Dominica.—In accordance with Ordinance No. 9 of July 27th, 1904, all growing plants, cuttings, buds, and grafts, bulbs, roots and seeds, and also fruit and vegetables intended for propagation and not for consumption as food, must be landed at the Port of Roseau, or other ports designated by the Governor, and will be fumigated on arrival. A further Ordinance, No. 6 of April 12th, 1907, empowers the Governor to prohibit the introduction of plants or other articles which are likely to be a means of introducing any plant disease.

Importation of plants into Barbados.—An order of May 13th, 1909, requires all plants, cuttings, etc., to be fumigated or disinfected, or if necessary destroyed, on arrival. The Superintendent of Agriculture may also require any plant to be grown apart in quarantine for twelve months.

Importation of plants into Grenada.—An Ordinance dated June 1st, 1906, provides for the fumigation of plants on entry, and also gives power to prohibit introduction from any particular country.

Importation of plants into Uganda.—A Decree (No. 2 of 1908) provides for the fumigation of plants on entry.

Importation of Animals into British Guiana.—The Governor is empowered by Ordinance No. 30 of 1909, at any time to prohibit the landing in British Guiana or prescribe the terms and conditions upon which the landing may be permitted, of animals, carcasses, fodder, litter, or dung.

Importation of plants into Ceylon.—The introduction of plants is governed by Regulations of the 1st July, 1906, and 11th August,

1909, under the Insect Pest and Quarantine Ordinance No. 5 of 1901. All imported trees, plants, and parts thereof and a few fruit seeds, with the exception of potatoes, onions, and culinary vegetables imported for consumption, are subjected to treatment with hydrocyanic acid gas. A certificate of fumigation by some properly constituted authority at the port of shipment will be accepted as exempting fruit or plants from further treatment, but not a certificate of mere inspection.

Importation of Bees, etc., into the Transvaal.—The *Transvaal Government Gazette* of 31st December, 1909, contains regulations restricting the importation of bees, beeswax, honey, etc. The permission of the Director of Agriculture must be obtained prior to the importation of any product of apiculture.

Importation of plants into St. Lucia.—In accordance with the Plants Protection Ordinance, 1909, all plants and parts of them imported are subject to disinfection, and may be required to be grown in quarantine for twelve months. The Governor may by proclamation prohibit the importation of plants, earth, etc., likely to be the means of introducing plant diseases.

Importation of plants into St. Christopher and Nevis.—Ordinance No. 3 of 1907, provides that all imported plants shall be fumigated on arrival.

EXPERIENCES IN RUBBER.

PARA GROWS WELL.

I got my first plants, 1,000 each of Hevea and Castilloa Rubber, from Hope Gardens in January, 1906. I subsequently got plants of Ceara and Fontumia, which I planted, along with some Hevea, on stiff, dry soil as an experiment—and I continued to get additional plants from Hope till April, 1908, and Hevea seeds from Singapore till November, 1909.

The first year of planting (1906) was a seasonable year, and both Hevea and Castilloa plants grew well. Since December of that year, there have been very poor "seasons" rains and long periods of unusual drought, in which very little growth was possible.

The outstanding feature has been the ability of Hevea Rubber to stand excessive drought. Only young plants, and not very many of these, died during this dry weather.

Castilloa, in some apparently favourable places, has grown well, but where not so favourable, indifferently, and while the most of the young trees lived, the drought told heavily on their growth and shape.

Both descriptions had grown irregularly, but some Hevea, planted in the spring of 1909, with better rains, have grown more uniformly, many are 12 to 15 feet high, and are growing well.

I have both Hevea and Castilloa planted on a variety of soils among bananas and cocoa, and Hevea planted alone on a stiff clay, which till now seem doing very satisfactory. Castilloa appears to

require a favourable locality and good, deep loamy soil—alluvial perhaps for choice.

Hevea has not done so well with me on fine alluvial soils as on fairly strong clay land. I cannot give a decided opinion as to whether a soil with a larger percentage of clay suits it best, as long drought and short experience makes it impossible to venture on one, but appearances, up to now, point in that direction. If it was found that Hevea would grow, and also yield a paying quantity of latex on strong clays, old sugar lands on which bananas do not thrive well, it would be a red letter day for Jamaica, and I suggest that the Government should be asked to undertake experiments, with different kinds of Rubbers, in different localities and soils, under a considerable area, with that object among others. I cannot think that all kinds will fail to yield a latex that will pay. Hevea with me has grown tall and spindly, trees of 20 feet high being little stouter than a salmon rod, but these seem now to be thickening from the ground upwards, and some just above the root are about 4 to 5 inches in diameter—they have also begun to branch and recently have made rapid growth. How they will continue to grow, I, of course, cannot say, but, with fair rains I am sanguine they will make a good showing in a few years time.

Here I ought to say that a considerable number of these tall, thin trees, bend over, and require to be propped up. I do this with light bamboos, with a forked stick inserted in them, and tie with banana bark. Just how Hevea or Castilloa Rubber will stand a heavy blow, or a hurricane, I have happily, so far, no experience.

Whether Hevea will grow in Jamaica to yield latex in paying quantity, in 6 to 8 years, is an open question, we have no local experience to guide us, and I am unable to say whether the growth described above is the natural and normal habits of the tree or not—all shew latex when cut. In the experimental plot I tried with Hevea, and other varieties, on a stiff clay—very stiff for the most part—although the soil was baked and cracked over most of 3 years, very few of the Hevea plants died, and some, where the soil was not so heavy and stiff, did fairly well. They are 20 feet high now.

Castilloa.—A few of my trees show a growth of 6 to 9 inches diameter, 3 feet from the ground, and one over 20 feet high. When tapped, the latex congeals rapidly, but, so far, I have not seen a tapping knife which I consider adapted for the work. This bark is thick and requires a strong, deep cutting tool. Castilloa is liable to attacks of white scale, and every tree on my property has been attacked. An expert gave it as his opinion that scale came along with the young plants, but he also pointed out that Bois Immortelle trees near them, growing as shade to cocoa, were covered with it. All these Castilloa trees had to be washed, to kill the scale, a troublesome and expensive undertaking. In this connection I may say, that so far as I know, it has not yet been definitely ascertained whether white scale attacks cocoa or not. I am not enamoured with Castilloa, but it may, and I believe clay does show better results in other localities.

The *Fontumia* I planted on a clay soil is a failure, most of it died, and what is alive has only grown a few feet in nearly 4 years. I have not tried it on any other soil, but I understand it is growing very well indeed, in the Rio Minho Valley, about 6 miles higher up the River than my property—on what class of soil I do not know.

Some Ceara trees I have in strong clay land have grown well, drought notwithstanding, a few are 25 to 30 feet high, and about 5 inches in diameter. I have also some planted on very gravelly light land, and I expected these would be quite burned up, but although they have made little growth, they are all alive. Two years ago I planted 11 acres at stake, 14 feet apart, that is with seed. I dug large holes to give the seed every chance, but I did not then know that the seeds were so hard as to require special treatment, and out of about 2,500 seeds planted, only about 30 germinated. I have just observed that the leaves of some of these Ceara trees have been attacked by some insect or slug, and the tender shoots apparently destroyed. Ceara seems hardy, but I fear will be difficult to tap owing to the sloughing nature of the bark.

I have just planted out on a stiffish clay, as recommended, 50 *Manihot* rubber plants, offered me by Hope Gardens, on which I will be glad to report later on. I understand these are of the *Manicoba* tribe.

We have, I fear, everything to learn, practically, about Rubber, and in the future interest of the Island I hope the Government will go into the matter thoroughly, on the lines I have taken the liberty to suggest, and endeavour to exhaust the possibilities of rubber growing in Jamaica, as a staple product.

P.S.—Since writing this, Mr. Dugald Campbell has shown me a tapping knife which he says answers well for *Castilloa*.

ROBERT CRAIG.

[In a report we made of our visit to Clarendon in June, 1909, we mentioned the apparent inconsistencies in the growing of rubber.

Drought conditions had prevailed on Mr. Craig's place all through 1907, and seasons were not much better in 1908: yet the *Hevea* rubber trees had grown well, and looked healthy, doing best on clay soil, while *Castilloa* had done poorly and appeared to do best on the richest alluvial soil.

Yet eight miles from there up the Rio Minho Valley at Mr. F. G. Sharp's place, Trout Hall, where the rainfall had been good and at any rate is 20 inches per annum, probably, greater than at Mr. Craig's, *Castilloa* and *Funtumia* planted on good alluvial soil had made luxuriant growth while *Hevea* had not done nearly so well].—
ED.

RUBBER.

FROM DOMINICA—CASTILLOA GROWS WELL WITH COCOA.

In reply to your letter of the 10th ultimo, regarding the growth and yield of *Castilloa* trees in Dominica, I beg to refer you to the brief note on this subject published in the *West Indian Bulletin*, Vol. 7, page 16.

During 1908, the Castilloa trees were again tapped in order to obtain samples for the International Rubber Exhibition held in London during that year. At the same time three young trees of Para rubber, *Hevea brasiliensis*, were dealt with. The results of these tapplings, with analysis of the rubber, are published in the Annual Report on this station for 1908-1909.

It is hoped to start shortly systematic tapplings of Castilloa trees at the gardens (100 trees) and also of trees growing on estates. In Dominica it is found that Castilloa is suitable for cultivation on lands below 1,000 feet elevation: but it does not succeed at high altitudes possessing a heavy rainfall. It thrives very well along with cacao, and it is found not to affect the health and bearing qualities of cacao trees growing beneath its shade. The only drawback in this connection is that Castilloa is usually attacked by blight at the close of the growing season, and just before it sheds its leaves, which causes black blight on the leaves of the cacao trees beneath it. The blight on the leaves of the cacao lasts for short period, being washed away by early rains.

The experiments with Para rubber plants have been satisfactory and there is every indication that the trees will grow well and yield well in this Island. It is thought it will prove suitable for districts that have a rainfall of 100 inches and upwards.

Funtumia elastica grows well in the wet districts, but nothing is yet known as to its probable yield.

It is hoped to conduct tapping experiments on Para, Castilloa, and Funtumia trees during this year.—(Sgd.) JOSEPH JONES, Curator.

Botanic Station, Dominica, April 15th, 1910.

* *

I am surprised to read that Para rubber trees will not yield in Jamaica. My trials in Dominica with this species showed a very good yield from young trees, and Jamaica is only two degrees north of Dominica.

If you have two large trees of *Hevea brasiliensis* at Castleton and if they could be tapped under the direction of a committee, the question of yield would be settled within a month.

Large Para rubber trees would bear tapping each morning for a few weeks. The trees would probably yield poorly for a few mornings and the flow of latex would gradually increase. In my experiments, I followed the method described at page 19 of the *West Indian Bulletin*, Vol. 7, and washed the latex down the trunk with water, using a knapsack sprayer fitted with a Vermorel Nozzle. The mixture is then strained, a little lime juice added, and 24 hours later the rubber has separated from the water and is then ready for pressing and drying.

The tapping should be done about five or six o'clock in the morning. No tapping should be attempted when the tree is changing its leaves, the yield of latex being very low at that period.—(Sgd.) JOSEPH JONES, Curator.

* *

CASTILLOA A SUCCESS IN HAYTI.

Having with much interest read the annual report of Mr. H. H. Cousins, the eminent Director of Agriculture for Jamaica, it occurs to me, that a statement regarding rubber cultivation, conducted on commercial lines, might prove of interest to the readers of your esteemed JOURNAL.

During nine years I have been at the head of cacao and rubber plantations situated in Haiti, and it has been my privilege to establish these plantations on new land, and to follow and guide their development, until to-day, when we have the trees mature.

Whilst I entirely agree with Mr. Cousins, that *Hevea brasiliensis* is absolutely unsuited for cultivation on these islands, where it grows well, but does not develop sufficient latex to allow of economic tapping, I can

not agree to his statements regarding *Castilloa elastica* and *Funtumia elastica*. Mr. Cousins says that *Castilloa* is sadly liable to attack of scale insects; this is unquestionably true, but most cultivated plants suffer from diseases, and it is the art of the planter to prevent and cure these attacks. In this respect the *Castilloa* tree is not any more difficult to handle than apple trees, cacao, cotton or other cultivated plants; it is only a matter of knowledge and attention, without which, truly, no business will succeed.

The climate of the Greater Antilles suits the *Castilloa elastica* well, its requirements as to soil are easy to satisfy. Any good cacao land will grow *Castilloa* excellently, but it will also grow on lighter soil, as well as on heavier, when drainage is properly attended to.

The question whether *Castilloa* as shade for cacao exercises a pernicious influence is a very large one, and can not be covered at this occasion. I shall, however, say that we have thousands of *Castilloa* trees growing among cacao, and have till yet been unable to observe any difference between the bearing of the cacao trees standing closer or farther away from the rubber.

The planting and cultivation of *Castilloa* is not expensive, it is the tapping which is the most costly item in the work. My position as manager of a company prevents me from making definite statements as to yields and costs, I can, however, not agree with Mr. Cousins' statement that a pound of rubber can not be produced under 2/9, even calculating with Jamaica labour wages, with which I am fully acquainted. When *Castilloa* is grown in plantation, in lines, and tapped by regularly conducted gangs of men, the tapping becomes much less expensive than experiments in botanical gardens would indicate. Here we use men and boys for tapping. Each man has a boy with him, and is supplied with: A five to eight feet long, light ladder, one German and one English rubber tapping knife, a number of small yellow metal cups with a sharp edge for fastening in the bark, a bucket of water for washing down the wounds, and a bucket for the latex. It is a rather interesting fact that of the many rubber tapping knives we have tried, not a single one would give satisfaction worked by itself, while a cut with a German knife followed by a cut with an English knife gives much satisfaction. Whether the workman has to make one or two cuts is of small economic importance, many writers give much too much importance to this point; what controls the economy of rubber tapping is in the first instance the more or less rapid flow of the latex. On young *Castilloa* trees six and seven years old, the latex has all to be spooned down, whilst as soon as the tree gets a little older it flows better. The season influences the flow very much, and it is safe to say that for each locality in which the tree is planted, new experiments will have to be made.

According to our experience, tapping can and must be repeated many times through the year, and one can not expect to gather a large quantity from each tree at a time. The men pass rapidly from tree to tree and operate on a large number in the run of a day. When the season is favourable the operation may be repeated one or two weeks after. Three or four days after tapping, the rubber which has coagulated on the wound is gathered, and disinfection with coal tar is effected.

As regards *Funtumia elastica*, I do not share Mr. Cousins' opinion that this tree is valueless in cultivation. It is a forest tree and requires naturally forest conditions, no wonder that it does not succeed when planted along open roads, which is, in fact, the most trying position for any tree. Under forest conditions *Funtumia* will grow very well; it is a rapid grower and not exposed to insect attacks as much as the *Castilloa*, it develops plenty of latex which flows readily, but whether it will stand tapping we can till yet not say.—(Sgd.) A. E. Cass, Superintendent,

FROM PANAMA—THREE VARIETIES OF CASTILLOA.

As it happens, I have just concluded a series of enquiries and searches to get at the bottom of the Castilloa mystery and I can briefly give you the following information:

There are in this country (more particularly in Darien, the home of the Castilloa), three distinct varieties:

Until I get replies from Kew, I can only give you the native names: (1) Borosso; (2) Leche gorda or "Plo-plo;" (3) Caucho Jobo. To discuss them in turn:

(1) *Borosso*.—This is by far the most plentiful tree; outwardly it can be distinguished by its large leaves, dark grey-black blotches on the whitish trunk, and lastly and most positively, by the following practical test:—A deep incision (tapping cut) made in this tree fills once, or rarely twice, with thick white cream.

This tree is a poor yielder; an annual yield of six to eight ounces from a mature—six to eight years old—tree being considered satisfactory. The quality of rubber then obtained is excellent.

Note.—The size of leaves is no reliable test; this varies with age of tree, soil, and altitude.

The second variety: (2) *Leche gorda* (Thick or fat milk), resembles *Borosso* in general appearance. The dark blotches above described are, however, wanting. The bark has yellowish stains and leaves are smaller.

Positive test.—An incision made fills five to six times with rich yellowish cream.

This tree has in this country, been greatly reduced by the practice of the native tapper of cutting down the whole tree to save time and work in tapping. Its yield is very good; mature trees yielding about three pounds on the average, per annum, of excellent rubber in three tappings. This, in my opinion, is the variety of Castilloa which, before all others, should be selected.

Lastly we come to the (3) *Caucho Jobo*. This tree is practically extinct, having been cut out by the early tappers on account of the ease of tapping it.

It has a thick, rough bark, studded with warty knobs, in general not unlike the Wild Plum tree. Its laticiferous system is very peculiar, in so much as the latex is stored in long tubes of an internal diameter of 2-2½ mm., which run vertically. One horizontal incision drains the milk out of the entire area above which may be intersected by these tubes. The milk runs freely and gives excellent rubber (six pounds per annum). This tree is the one which, in my opinion, has given excuse for the many contradictory and unsubstantiated accounts of the yield of the Castilloa tree.

For the nonce, so far as *Caucho Jobo* is concerned, it is almost impossible to obtain seeds. I am, however, in treaty with several old rubber hunters, and hope I shall be able to send you a few seeds for trial in Jamaica.

General and summary.—All three varieties yield good rubber. I have latterly succeeded in demonstrating the value of Castilloa rubber, when reports from the New York market shewed carefully prepared Castilloa rubber to be of the same value as fine Para. All depends, of course, on the preparation.

In order to clearly show this, I enclose three samples. The first sample—black, evil-smelling and rough, is standard native rubber, freed from gross mechanical impurities. The second sample—grey, tightly-rolled thin sheet, is *Borosso* rubber, carefully prepared by me. The third sample is also *Borosso*, but with resins and albumens washed out and colouring enzymes killed. This was also prepared by me and has been considered the finest sample of Castilloa rubber so far produced in this country. You will note that the interior is quite white. It is of matchless purity and good resiliency.

As regards cost of production, I am now, after extensive tapping, able to give you some interesting figures and data.

In the East with Para, with labour at say 6d. per day, the field cost of rubber is about 1/- per pound, if am not mistaken. Trained and expert workmen are required.

On this plantation, owing to the fact that I tap only twice a year (instead of over a hundred times as with Hevea), I get a lower yield—about 14 to 15 ounces—at a cost, ready for shipment, of 1/5 per pound.

If you take into consideration the fact that I pay tappers 4/6 per day and that they are all very stupid West Indian labourers of the lowest type, you will appreciate the qualities of *Castilloa* as an economically tappable tree.

With Para, and the local labour prices, a profitable tapping would be out of the question.

To conclude: let me warn prospective planters against the sowing of Borosso seed; wherever Borosso trees grow, they may cross with the Leche Gorda variety and do incalculable harm. I believe a parallel exists in West Africa in *Funtumia elastica* and *Funtumia africana*; the latter are being cut down by the Agricultural Department wherever met with.

Lastly, a word as to tapping: Hevea knives, or the greater part of them, are quite useless.

I tap in the following manner: a shallow rounded channel is made with knife No. 1. This shallow cut only provides a lead or channel for the milk. Along this cut then is drawn knife No. 2, which is made to cut very deeply. The milk then gushes out, or at least, creams out and is wiped out after fifteen minutes.

I should be glad to have news from you as to the cultivation of *Castilloa* in Jamaica; some years ago I remember reading some discussions on this matter. In the meantime, I am glad of having been able to give you some definite and reliable news concerning this rubber.

I hope to be sufficiently advanced in a few months to be able to put an end once and for all to the "*Castilloa* mystery," for such it undoubtedly is at present.—(Sgd.) FREDERICK W. DEVALDA.

Las Cascadas Plantations, Canal Zone.

May 12th, 1910, Empire P O.

SEASONABLE HINTS.

WRITING at the end of May, we are expecting May seasons with plenty of rain by the end of the first week in June,—it will be most unfortunate if these seasons do not come, but with them our prospects will be good. There have been large plantings of corn and ground provisions, although the corn crop does not promise well so that corn will still be scarce and dear this year, the ground provisions have made a splendid start. Coffee is suffering from drought where the soil is thin, but generally it is looking fairly well. Cocoa trees are looking well and probably the little dry spell will do them good now—if we only get rains. The next cocoa crop, however, will be from two to three months late. Some parts of the Island have been having more than sufficient rain all along, but good "Seasons" rains will be very beneficial to the Island as a whole.

Not much in the way of planting can be done in June, but as July is usually a dry month and if we get good rains early in June it will be good for those who depend on cut foddors largely to plant guinea corn and country corn, not so much for the sake of the seed

as for the fodder. But the best stalks can always be left to bear seed. We have some good seed corn and Guinea corn on hand now, the former at 3d. a quart and the latter at 6d. a pound. Of course the guinea corn goes much further than the country corn when it comes to planting. We have a good many complaints that the guinea corn seed we have sent out does not grow or only sparsely, yet we know it to be fine seed from our own experience, as almost every seed we plant grows, if it is properly treated, but the seed *must* be treated before it is planted or ants will be sure to eat most of it. If anyone plants guinea corn without the preliminary process hereafter described, and goes to the holes in which the seeds are planted two or three days after, he will find stinging ants in every hole eating the seed. The seed must be soaked overnight in a mixture of woodashes and water to which a little kerosine is added, the seed stirred well through the mixture, and left to soak: then not only will the seed start to grow instantly, and be germinated within the next twelve hours, but it will be above the soil within three days, and if rain does not happen to fall for a week or two afterwards the plants will still grow. If the soil happens to be well saturated when this seed is planted, it will grow well enough even if it does not get a shower for three or four weeks. We have grown a good crop of guinea corn this year on very dry, thirsty soil, on which an ordinary good shower of rain that would saturate a good loam has no effect whatever and does not go a quarter of an inch deep. This guinea corn has had three such showers since it was planted and although not so luxuriant as it would be with a few rains that would soak the ground, still it is a fairly good crop.

This is also a good season to plant gungo peas, but in most districts they are already planted, still they can be planted now. In districts with good seasons it is a better time to plant now than in the spring as the bushes do not grow so high.

We still have some Jerusalem peas left, of which there has been a large planting this year among bananas.

In the uplands nearly all vegetable seeds can be sown now in seed beds to keep up a rotation and if forethought has been used in getting the beds made before the heavy rains, so that the soil is soft and well saturated, then your seeds can be sown immediately after the rains and will grow well, and young plants can safely be transplanted.

We have not many varieties of vegetable seeds in hand as there is not much demand at present, and we do not stock seeds in the summer, but we have good Cabbage and Tomato seeds. In the month of August we hope to have a further supply for those in the uplands who wish to plant early, but September is we think, the best month to plant in seed beds for such vegetables as can transplant. Usually people wait too long before planting, but seeds planted in seed beds or even boxes, like cabbages and tomatoes, can be got ready to plant out as soon as the October rains are over, and if the plants are strong and sturdy as they may even be ready by

We expect to import Irish potatoes this year as usual, but must impress upon those who expect to plant, to let us know what supplies they want early, say August. Many correspondents seem to think that we keep large stores here in the office and suppose we can supply anything under the sun in the way of seeds and stock,—almost at a day's notice.

We have never had such a demand for seeds of all kinds not usually kept in stores, as we have had this year. For (1) Cowpeas, (2) Jerusalem Peas, (3) Bengal Beans, (4) Black Eye peas and Red beans (owing to the scarcity of supplies in some districts), (5) Irish potatoes, (6) Vegetable seeds, (7) St. Vincent Yams, introducing them into districts where this hardy variety is not already known, (8) Seed corn, (9) Eggs for setting, (10) Small Stock—the demand has been so great and our ordinary office work so heavy too, that we have not been able to tackle requests as promptly and as correctly as is desirable. The supplying of these seeds is very useful and convenient to growers and should be a very important branch of our work. We hope to be in a better position next season to satisfy requests for such seeds as have been named.

GRAPES.—The growing of grapes has been very much neglected in Jamaica. In its earlier years this Society made some effort to establish a grape industry where the grape vine grew naturally without cultivation, in the plains of St. Elizabeth, and the Botanical Department did a good deal around Kingston and St. Andrew, but it is only long-continued effort and steady pegging at it that will create any industry here, and our efforts were dropped, so Kingston remains a grapeless city. In all the dry coast regions not only grapes but pomegranates and figs can be grown, for which there would be a very good local demand. The few bunches of grapes that come to market are usually spoiled by not having been thinned. Some of the outer grapes are ripe, but the bulk of the fruit on the bunch you buy is still acid and unripe.

Really good bunches of grapes can only be obtained by giving strict and careful attention to stopping the laterals and sub-laterals and thinning the bunches at an early stage of their growth, a point to be borne in mind being that not only is a bunch consisting of some fifty large berries more luscious and far superior in flavour, quality, and appearance than a bunch of seventy or eighty small berries, but it also weighs more.

Thinning the berries on the bunches is tedious, but necessary work, which should be performed as early as possible after the fruit has set, certainly before the berries are larger than green peas and begin to crowd each other, the best time to set about this task being early morning or in the evening, when the sun is not so powerful, or on a dull day.

Scissors for grape-thinning should be pointed, and also be sharp at the points.

The object of thinning is to allow the berries to develop and swell to full size without unduly pressing against their neighbours.

A second thinning may be necessary in many cases, and it is advisable to look over the bunches just as the berries are colouring to see that all have space to develop and swell.

The end berries on the shoulders and wings should never be removed, but always be left, or badly shaped and unbalanced bunches will result. All small and deformed berries should be removed at the first thinning, also any that point towards the centre of the bunch, whilst care must be taken to thin the berries out so that those retained are distributed as evenly as possible and bunches of good shape obtained.

It is not too late to thin bunches now.

[This, however, was written for May.—ED.]

* *

WATERING.—Now the hot days of summer are on us the vegetable garden wants even closer attention than in the cool months. Where the soil is light and water is scarce, a heavy mulching should be put between the rows, and thus one watering a week will do, if there is no rain. Where the soil is heavy, a lighter mulching will serve, merely enough to keep the soil from baking after watering.

There is a science in watering. Give a boy the job and merely tell him to water the plants, and he wets the surface, but the roots of the plants get none. After an hour's sunshine the soil is dry as dust again. It is better to take part of the garden one evening and part the next and give a good watering. Even in the watering there is a way to do it. If the garden is on a hillside the water runs over the soft soil and is partly lost. The way to do it is not to soak one part hard at once, but to run over a bed lightly several times; then the water sinks in at once each time, and does not lie in little pools, which tend to puddle the soil.

* *

KOHL RABI.—This vegetable deserves to be better known. It grows like a cabbage, but forms a round fleshy growth, like a soft green turnip, where the head of the cabbage would be. This, on being cooked is something like turnip in appearance and flavour, but there is also a slight taste of cabbage. It is much hardier than cabbage and stands more dry weather; cabbage must have abundance of water to make good heads, but the kohlrabi gets along and makes a head on less.

SHOWS.

The following Shows are arranged for:—St. Mary Show, at Nashville near Highgate, on 14th July; Lucky Hill Branch, at Goshen, on 21st July; St. George's Branch, at Buff Bay, on 1st August; Hector's River Show, on 25th August; Santa Cruz Branch, at that place on 9th November; while Hanover Society has arranged to hold their Show on 1st December. The St. Ann Branch will not

go on with their Show usually held at Thickets on 1st August every second year.

St. Thomas-ye-Vale Branch intends to hold their Show annually as it caters for a large district, and the Committee think a Show will get support and be useful every year. This Show will probably be held in March next year.

On 22nd and 23rd June, there will be a Horticultural and Small Stock Show held in Kingston at Clovelly, which is advertised in this issue. Trinity Ville Branch has also decided to hold a Show in December.

What a large number of exhibitors now seem to miss is the want of a large Central Show like those formerly held in Kingston. The Port Royal Mountains Show at Hope Gardens, partly took the place of these for some time, but this has also dropped out.

The Jockey Club had intentions of holding a Show in February of this year, but as they wanted the co-operation of the Agricultural Society and all our time and effort had already been pre-engaged for five Shows to be held in March and April, this could not be given. The co-operation could be given for next year as so far, the only show fixed for next spring is the St. Thomas-ye-Vale Show. There never was a time when there was more good stock in the Island and when people all over the Island were as much interested in Shows, their attention being called to these through the outstanding success of so many local Shows during these two last years. We trust therefore that arrangements will be made for a joint Kingston Show between the Jockey Club and the Agricultural Society. The Agricultural Society is not in a position to finance and be responsible to any extent, but it has the organisation and the staff to work a Show.

HILLSIDE TRENCHING FOR BANANAS.

MR. SAMUEL A. SCHLEIFER, whose address on this subject was published in your March number, deserves the thanks of all planters for his advice. Theory is generally sneered at, but here is a splendid specimen of *theory* as distinguished from *guessing*. There are two kinds of guessing—that of the man who advises without a groundwork of facts to go by, and that of the so-called “practical” man who won’t take the trouble to observe and learn from what he sees. The latter is sometimes called “rule-of-thumb,” but his trouble is that he does not know the difference between his thumb and his little finger—they are both fingers, and any finger is a finger!

It will be helpful and cheering to many to know (and to notice) that the effects of proper hillside trenching may be soonest noticed in weeds. The sour, flat-growing grass so common on washed hillsides, is put there by nature in her efforts to minimise the damage done by thoughtless man—to prevent washing. Drain properly, and weeds appear natural to a good soil, or rather to a soil in good agricultural condition. I have seen corn grass creep from a rich flat right up a hillside, taking the place of the grass referred to—and later, nine hands taking the place of sixes and sevens.—A DRAIN.

SOY BEANS (GLYCINE SOJA).

"In China and Japan, where the plant has been cultivated for many years—perhaps centuries—the beans are an important food. Bean Cake and the sauce known as "Soy" are also made from them. The beans are boiled soft, and an equal weight of coarsely crushed wheat or barley added, with plenty of salt and water; this is allowed to ferment, and stirred daily for about two months, when it is filtered and casked. The beans yield eighteen per cent. of oil, suitable for soap-making, and in general as a substitute for cotton seed oil. This oil realises £21 to £22 per ton, and the residual cake £5 to £6 per ton in England. In 1909, the 1908 crop from Vladivostok, 180,000 tons, was sent mostly to England, some to Hamburg, and Scandinavian ports. It is anticipated that at present prices, Europe may eventually take at least 1,000,000 tons." I am of opinion that these beans are worth trying in Jamaica at elevations of 2,000 feet and over. Some that I planted a month ago, meeting with a dry time, at an elevation of 1,550 feet, have borne—yielding about thirty beans to each stem. About 200 of the dry beans weigh an ounce. Hence I calculate that an acre might give 400lbs. of dry beans. I am indebted to the *Journal of the Royal Society of Arts*, of April, 1910, for the foregoing information.—SAMUEL T. SCHARSCHMIDT.

DESTRUCTION OF RATS.

THE following recipe for the destruction of rats has been highly recommended in England as the best-known means of getting rid of these most obnoxious and destructive vermin. It has been tried by several intelligent persons and found perfectly effectual. Melt hog's lard in a bottle plunged in water heated to about 150 degrees Fahrenheit, introduce into it half an ounce of phosphorus for every pound of lard; then add a pint of proof spirit or whisky; cork the bottle firmly after its contents have been heated to 150 degrees, taking it at the same time out of the water and agitate smartly till the phosphorus becomes uniformly diffused, forming a milky-looking liquid. This liquid being cooled, will afford a white compound of phosphorous and lard from which the spirit spontaneously separates, and may be poured off to be used again, for none of it enters into combination but it merely serves to comminute the phosphorus and diffuse it in very fine particles through the lard. This compound on being warmed very gently, may be poured out into a mixture of wheat flour and sugar incorporated therewith, the flavour may be varied with oil of aniseed, etc. This dough being made into pellets is to be laid in rat holes. By its luminousness in the dark, it attracts their notice and being agreeable to their palates and noses, it is readily eaten and proves certainly fatal.

GOATS.

WE notice that at meetings of some Branch Societies discussions occasionally take place on small stock, when it is usually stated that their breed of goats is rather small and undeveloped, and that an imported billy would serve to improve the breed. Subjects like this are always cropping up, are more or less continually discussed for a time, ardent wishes are expressed for improvement, then the subject drops. Some time after another subject crops up only to be treated in much the same fashion.

It is our purpose to try to keep up interest in subjects, especially where improvement is very necessary and comparatively easy to be effected. Of late there has been more than an ordinary interest taken in goat rearing, but unfortunately disease has been rampant in some districts, and has swept off large numbers of goats.

Talking of subjects or writing about them is one thing, and putting wishes for improvement into practice quite another.

Owing to so many inquiries on the subject, and special requests made, we have written very fully on the subject of goats during the last two years, and articles have been published in the JOURNAL. These have described the various breeds of goats and how they have been developed, and how good breeds could be developed here in time. We have stated how goats should be kept to secure this desired effect, described the nature of goats as distinct from other live stock, and treated on the diseases most common here among goats, and how to prevent and how to cure these. We recommend these articles to Branch Societies interested in the subject; they should read over each of these articles in turn. But we wish to repeat that the introduction into the district of a "good imported billy," while useful for introducing entirely fresh blood, would not permanently improve the quality and size of the goats unless some little of the same care was expended on the goats in the district, as developed the size and quality of the ram imported.

A great deal can be done in a few generations to improve the breed of goats by simply taking care to prevent inbreeding and by giving plenty of feed. Breed is no good without feed, but feed can do a great deal without breed.

COMMENTS.

THE SECRETARY.—The Secretary, Mr. Barelay, will be on leave of absence from the 1st July till 30th September. Communications to the office should not be addressed to him personally during these three months, but to "The Secretary, Jamaica Agricultural Society, Kingston." * *

SUBSCRIPTIONS.—Will those receiving the JOURNAL, and who have not sent us their subscription, please remember that subscriptions are now due. A few members seem to appreciate the JOURNAL and have paid up for five years in advance!

WATER ELEVATOR.—The article in the JOURNAL for April telling of a new Water Elevator that has come into use, appears to have interested many, as several readers have written us asking for fuller particulars and where the Water Elevator can be got. We shall require to find out this information as no particulars were given in the extract, only that it was already in use in South Africa.

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GUINEA CORN.—For a good many years we have written about the manifold advantages of guinea corn as a drought-resisting crop, and we have stocked seed so that those who wanted it might get it for trial. A few years ago we do not think that there were more than two or three people who grew guinea corn, and those grew it, not as an economic crop, but to attract pigeons for the shooting season. Seed was so scarce that it could hardly be obtained. More people grow it now but still the cultivation of this crop is far from being general even in the dry districts. If its advantages are so great, it is natural to think that these would attract people to grow it. Why then is it not grown? Because it has at least one great disadvantage—the birds like the ripening corn better than anything else, and while it might be easy to scare birds like pigeons, it is not easy to circumvent the thousands of little grass birds that descend upon it, and that are so tame that when you send a boy with a tin can to rattle and frighten them away, the little birds simply dodge around or fly a little way off and immediately return when the boy leaves. Of course, with a large cultivation, it would pay to employ a boy over the ripening period of the grain to scare the birds off, but a small cultivation does not stand this expense. The spread of guinea grass pastures has provided food in the shape of the seed for the "grass birds," and they have multiplied greatly in recent years.

Can any reader tell us how the guinea corn may be saved from these little birds?

* *

WATER SUPPLY.—The usual thing that happens almost every other year at this time in some districts, has happened this year again during April and May,—that is, a shortage of water. Long trains of people are seen carrying pans and tubs, often long distances, from some pond to their homes. This pond which is, as a rule, private property, is the outcome of forethought and expenditure on the part of the proprietor. People, very often, do not even ask permission to take water, they simply go in and take it; if the proprietor is not very liberal and has not plenty of water for himself and has the pond watched in the day they take it at night. In times of very severe drought, there may be some excuse for people being obliged to get water supplies from a distance, but in ordinary short spells of dry weather there is no excuse. Every man with a house and land should have his own water supply; should have a pond for his cattle and a tank for his household supply. The lack of water is most felt in the red soil districts, just where material for tanks is cheapest and most handy. Nearly every settler with land can put

in a pond and tank at only the expenditure of time, of which he has plenty and with his own labour. Not only is there great waste of time in people travelling great distances with water, a kerosene pan at a time, but that water is usually bad, taken from a pond getting low, contaminated with vegetable matter like rotting leaves and blossoms from the trees usually overhanging it. Most people admit, when spoken to, that they should have a water supply, and should have had it long ago, that it is quite within their circumstances to have it, and express determination to put in a tank. Whenever rain comes, however, they are so happy-go-lucky that they put off the tank making. The time wasted and the labour expended in carrying water in one season of drought would easily put in a tank. Often to get water people break down fences, leave gates open, and some sympathetic proprietor of a pond suffers severely through his sympathy.

Every man who owns land, should have his own water supply, and can have it. A water supply should be as much part of his possessions as his house and cultivation—it is necessary and so should be provided for.

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THE USE OF SULPHATE OF IRON ON COCOA TREES.—Mr Cradwick, the Instructor, has been recommending for prevention of canker on cocoa trees, and for generally improving the condition of the bark, removing lichen and moss, the use of Sulphate of Iron wash, that is, Sulphate of Iron and Lime. Many careful cocoa growers can give evidence that this has been a most useful wash and does what it is stated it will do. On the other hand, we find that some report adversely on the treatment and claim that the trees will not blossom for a long time afterwards. Now may not this be due to the way in which the wash is applied, for if the wash is scrubbed on to the bark roughly, it will rub off the blossom eyes? It should only be painted on or brushed on lightly, and if done like this, of the strength recommended, it will not do harm to cocoa trees or retard blossoming, but will rather stimulate the trees.

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COCOA AND POD ROT.—The St. George's Branch at Buff Bay, has called attention to the spread of pod-rot in our cocoa, and think that the trouble may get so serious that some legislation ought to be provided to prevent pods being thrown about cultivations or heaped up at the several places where dealers buy, dry or cure their cocoa. Not only do these rotting pods lying about cultivations, and especially heaps of rotting pods, become breeding places for disease, but they are also wasteful, because the broken cocoa pods form an excellent manure if buried through the cultivation in lime.

We are glad to call attention to this if even for the latter purpose. Cocoa pods should always be collected and buried, with a little lime on them, between the cocoa trees, when instead of forming breeding grounds for disease, they form good feeding ground for the roots and help to increase the crops.

EXHIBITORS AT SHOWS.—Exhibitors at Shows must please notice the strict rule governing Shows, that all exhibits must be either the growth or manufacture of the exhibitor,—that is, exhibitors cannot simply buy exhibits and take them to the Show; that would defeat all the best objects of Shows. The various Agricultural Instructors have strict injunctions to make this known and to act up to the rule in the judging.

* *

PESTS.—The extraordinary thing is that in spite of all that is being written about pests of all kinds in the house and how dangerous they are to health, few people make any serious attempt at their extermination. Our greatest pest, of course, is rats. In the United States the loss caused by rats is stated to be about \$100,000,000, and in the United Kingdom the loss occasioned by vermin of one kind or another is estimated at £1,000,000 a year, the largest proportion of which is caused by rats.

If there was concerted action all over the Island and every householder kept traps going, taking care not to let dogs nose them or to finger them without first touching the tips of the fingers with aniseed or coconut oil, even without using poison or Virus, great headway would be made against these pests.

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FEEDING BEES.—With regard to a paragraph in the preceding JOURNAL about the wisdom of bee-keepers keeping a patch of cane, so that in any time of stress such as may happen with long continuous rains about October, where bees are kept in a wet district, a bee-keeper calls attention to the fact that readers, especially abroad, are likely to jump to the conclusion that bee-keepers in Jamaica are feeding their bees upon the juice of the sugar cane and selling the resulting product as honey. We think this idea very unlikely, but at any rate we wish to make it plain that it is exceptional for bees to need feeding in Jamaica. Bees, however, are not always kept in dry districts where they can fly all the time, but they are often kept in upland districts where continuous rains from September to the middle of November may occur; and at this season too, bees are more likely to be weak. In such a district anybody who wishes to have his bees in prime condition till the first rush of blossoms come,—say the Christmas bells in December,—would be wise to give his bees a little help.

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HARNESS.—The Hanover Branch has called attention to the methods used in harnessing mules, especially the long traces used in that parish, and asked us to write strongly in support of more care, and more judgment being used.

This subject has already been written on—in the JOURNAL for January, 1910,—where there is an article by Mr. J. C. Ford written for the Society for the Protection of Animals in Jamaica entitled “The Fitting of Harness.” We cannot add to this, it deal

fully and carefully with the subject. Briefly, animals work easier, can pull more, and last longer, keep in better condition on less food, and keep free of galls and bruises, and are thus more profitable to the owner, when care and judgment are used in the harness and harnessing. The most important item in the harness is the collar. A collar too large or too small does not give the animal the chance of pulling to its utmost and may gall it. Then the crupper strap is often too tight or too loose. If the traces are too long the animal cannot put forth its full power, for the traces slack off half the time; if too short the animal wriggles as it were to get its pull and expends its strength *trying* to pull; then with short traces chafing must result.

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BULLETIN.—No. 3 of the *Bulletin* of the Department of Agriculture (which is issued half-yearly) has now been sent out. The present number is a very valuable one; every page is interesting and useful. We have an exceedingly valuable addition to our knowledge of ticks in the extracts from the reports of Professor Newstead's investigation into the tick problem in Jamaica. Very little has been done in this respect since Professor Williams was here in 1896. It must always be remembered, however, in the criticisms that are often put forward with regard to Professor Williams' investigations here, that later investigators have a much better opportunity as they have all the previous knowledge to go upon. Before Professor Williams' visit, nothing had been done to eradicate ticks, which were becoming more and more numerous, and there had been no investigations, no experiments, and few observations here—and very little elsewhere. Since then in the United States, South Africa, Australia, the Argentine, much has been done and much literature and data are available. Since then too the most enlightened and enterprising penkeepers here have tackled the question, and with constant rubbing in from the Agricultural Society, many of the smaller keepers of stock have also been keeping their animals fairly clean. At any rate, during these last twelve years since Professor Williams' visit, the use of tick-washes has increased over an hundredfold.

Professor Newstead has utilised previous knowledge as his foundation, and been able to put his scientific knowledge and training to good use. He has now dissipated much of our casual and crude local knowledge in regard to the different varieties of ticks,—how they are re-produced and spread; he has also given us some more definite ideas of and put on more exact record, the value of black-birds, with some comparative results of the respective value of the "Tink-ling" black-bird and the Parrot-billed black-bird. It cannot be too strongly brought to the notice of everyone who keeps stock, nor too much rubbed into the minds of schoolchildren, this knowledge that black-birds are tick-eaters to a large extent, especially the Tink-ling. The stomachs of some of these birds in different parts of the Island on being opened, were always found to

contain ticks. One bird contained the remains of twenty-eight ticks, another contained seventy-four, another thirteen; these were in Hanover. In Manchester the stomach of one contained thirty-two, another five, and another seven, besides various other insects that we would be better without. The total number of ticks found in six birds was 159, and as these were all females, they would have produced between them over one million eggs and a corresponding number of grass lice. The Parrot-billed black-bird does not live so particularly on ticks as the Tink-ling, but is a most useful bird otherwise, as having a distinct appetite for that very nasty insect the "green stink bug." The Woodpecker is often blamed for boring through cocoa pods, but a specimen killed was found to be equally well filled with cockroaches and seeds of bitter wood. Even if this bird did damage to cocoa we should think of this. The value of the domestic fowl as a tick-eater in cattle-pens is emphasised.

The Editor adds a trenchant article on the prevention of ticks in Jamaica, and recommends the use of a mixture of Paranaph and Cooper's Dip as the most effective wash or spray, after prolonged tests of the different washes and mixtures in use in the Island. He also strongly recommends spraying by means of the Abol hand-syringe instead of the ordinary hand washing. The cost of spraying eighteen times in twelve months as the extreme number of applications required, it is stated, would be not more than 2s. per head per annum. The amount of wash varies from one to two quarts. The animal can be sprayed thoroughly in quarter the time required to wash even the parts of the cow usually treated.

We have often ourselves doubted the accuracy of the stories that prevail about mongoose being so much responsible for the reduction of ground birds and lizards. As a matter of fact we know that the mongoose will not eat lizards except under pressure of starvation as we have tried them often. Our tree-nesting birds are quite as scarce as ground birds and the mongoose is clearly not responsible for the reduction of numbers of birds that do not frequent the ground. Then again, lizards do not eat ticks as a rule any more than they eat stinging ants.

There is also an article on Blow flies, and attention is called to the danger that these are to man. No carcasses of any animal should be flung out for John-crows to eat, but should be buried or burned, and when the Contagious Diseases Animals' Law is put in force this will be made compulsory. There is also an article on the Hornfly, a small black fly, which has been prevalent in St. Elizabeth these last four years, and which we have before written about in this JOURNAL.

There is a paragraph on the Chigger flea, commonly called Jigger; we have often written about the desirability of keeping pigs out of the houseyard as "jiggers" breed on pigs more than any other animals.

An article on Tea-growing in Jamaica by Hon. H. E. Cox, is ~~very~~ interesting. Mr. Wm. Harris writes on the Introduction of

Economic Plants in Jamaica, and tells how some of the different trees and plants now so common here were first introduced. There is some interesting matter on Seedling Canes on Northside estates. There is also a list and description of the various kinds of stock kept at the Farm School at Hope, and an article on the Breeds of Cattle in Southern India concludes the number.

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BRANCH NOTES.—We very much regret that the following reports from Branch Societies received in time to be inserted in this JOURNAL have had to be held over through want of space :—Hanover, Birnamwood, Trinity Ville, St. Faith's, St. John's, Windsor Castle, Avocat, Grand Cayman, Red Hills, Hector's River, Porus, Troja, Comfort Hall. These will appear next month.

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RUBBER KNIFE.—A new rubber knife for tapping *Castilloa* rubber was advertised in the *India Rubber Journal* and we imported two for members. Mr. Wates, Agricultural Instructor, writes as follows :—“It is a first-class tool, and fills the requirements we have been looking for. It makes a clean cut any depth you like, cutting the strip out in one piece, not in chips. It is easy to guide, no force is required, and the knife at the point does the rest. I am satisfied that this tool will meet our requirements, being strong as well as practical.”

BRANCH NOTES.

Central St. Mary Branch.—The annual meeting of this Branch was held in the Eliot School-room, on Thursday, 7th April, 1910. There were present : Mr. J. A. Banks (in the chair) and about fifteen others. The Chairman in his opening remarks, said that the Society had not done as much as it might have in the past year, but hoped the new year would bring decided success in every way. The Secretary was then called upon to read the minutes of the last meetings, which after some amendments, were confirmed. The minutes business being dealt with, the Secretary was asked to give his report. This showed that the Society is in advance of last year, there being now a membership of thirty-eight. The Treasurer then presented his annual report, which also showed the Society in advance of last year. The accounts were satisfactorily received. The Chairman then gave his presidential address, and hoped this year, with the united efforts of all the members, will be an all round success. Other business being set aside, the election of officers for the ensuing year then followed. Messrs. F. A. Williams, H. Taylor and Jas. McGibbon, rendered votes of thanks for the officers who served in the past year. On the motion of Mr. Adison Pearse, seconded by Mr. F. Williams, the officers were elected for the ensuing year. The Secretary was then asked to lay before the meeting a petition which he was directed to draft at the last meeting. It was read and signed by all present. The President briefly outlined the prize list of the proposed show to be held at Nashville in July. Members were asked to combine in their efforts to make the show a success, and more so, to win most of the best prizes offered in small settlers' class. Mr. Isaiah Thompson became a new member. The next meeting was fixed for the Thursday preceding the second Sunday in May.—EGBERT A. GUNTER, Secretary.

Giddy Hall.—A meeting of this branch was held on Friday, April 22nd. The chief topic of interest was the new Prædial Larceny Bill: many tales of *thieving were related by the members.* Names of men suitable to act as authorised persons in the different districts were suggested and voted upon, and the Secretary was instructed to submit the names to Inspector Dodd. The evil of prædial larceny is steadily growing in our midst, and it is felt that a strong stand must be made to check it. Packets of Soja Beans had been sold to the members at the last meeting, and it was interesting to hear the result. One member, Mr. Shakespeare, who planted his beans on January 1st, had dry beans in about six weeks' time. He thought that the beans had dried up, but on a closer investigation, found they had ripened, the pods had split, and the seeds fallen into the ground, where they were springing again. Mr. Shakespeare planted again in March 15th, and the beans are growing well and bearing. The President did not sow his until the end of March: his beans are coming up splendidly, every seed seems to have grown. When they are fit, we shall be able to render a fuller account of this most interesting product. The President next brought very forcibly before the members, what he considered to be one of the chief causes of the present scarcity of food. St. Elizabeth is now suffering from a dearth of ground provisions. He observed that the people are not cultivating on a sufficiently large scale. A man with a large family will rent only half or in some cases even quarter acre, and he expects from this small ground to support his family and have provisions to carry to the market for sale. The speaker advised the members to extend their cultivations, and so provide for times of scarcity. The members heartily agreed with these remarks and after fixing the next meeting for the last Friday in April, the Society adjourned.—G. L. MAXWELL, Secretary.

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Giddy Hall (St. Elizabeth).—A meeting of this Branch was held on Friday, May 13th for the purpose of inviting the Agricultural Instructor, J. T. Palache Esq., The teacher, Mr. Doran, moved a resolution, that the members of the Giddy Hall Branch Agricultural Society beg to express their profound and deep sorrow on the death of the beloved King Edward VII. to testify their heartfelt and sincere sympathy to the Queen-Mother and the members of the Royal Family, and assure His Majesty George V. of their loyalty and devotion. This resolution was seconded by J. M. Cooper, Esq., and the Secretary was instructed to record it on the minutes. The report of the S. P. A. J. was read by the Secretary, and a resolution was moved by Mr. Palache to thank Mrs. Bourne and mark the highest approbation of her efforts to promote kindness to animals; also to wish her '*bon voyage*' to the old country, and a speedy return to her useful work. Mr. Thomson seconded this resolution and the Secretary was instructed to write to Mrs. Bourne and inform her of the resolution. The President then called upon our Instructor to give his lecture on the subject of '*Thrift*.' Mr. Palache prefaced his remarks by saying that he had that morning seen a fine object lesson for the members in the President's vegetable garden. It was as fine a vegetable garden as he had seen in Jamaica, and the orderly way in which beans, Irish potatoes, cabbages, tomatoes, Soja beans, potatoes, egg-plants, etc., were cultivated, was perfect; and he was sure that if any of the members cared to go up to Rock cliff, the President would be delighted to show them his garden, and it would be a valuable experience for them. Mr. Palache then proceeded to read his paper on '*Thrift*', on Industry versus Indolence. Much laughter greeted his amusing and realistic word portraits of the various classes of idlers to be found in our midst. He pointed out that industry spells prosperity, and quoted St. Paul's words to the Thessalonians, "that if any man would not work, neither should he eat". A point which appealed greatly to the audience was the fact that Jamaica has the greatest possible variety

of products, and that nearly all of her products are of the very finest quality, e.g., our coffee, rum, tobacco, pimento, cocoa, logwood, oranges, bananas, etc. What is needed is careful cultivation and careful preparation of our products for the market. There has been a great increase in the export of minor products from Jamaica during the last ten years, since we have had the benefit of the teaching and experience of our Agricultural Instructors, in fact our exports have been almost quadrupled. Mr. Palache showed how the members could benefit the Society by inducing others to join; seventeen members were present on Friday, if each of those seventeen would bring even one new member to the next meeting, in time we should have a Society two or three hundred strong, a power for good and valuable influence throughout all our districts. This most interesting and profitable lecture was highly appreciated; many members concurred in saying it was one of the finest meetings they had yet attended. A vote of thanks to Mr. Palache was proposed by the President, and seconded by Mr. Thomson, and applauded heartily by all present. It was decided to try and get up a good show of exhibits from this Branch for Newmarket Show on December 8th; exhibits such as coffee, pimento, chocolate, cassava, canes and ground provisions. Carts to convey these exhibits to Newmarket were promised by the President, Rev. J. Maxwell, by A. E. Tomlinson, Esq., Vice-President and C. F. Thomson, Esq., and after an enjoyable afternoon, the meeting adjourned.—G. MAXWELL, Secretary.

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Cedar Valley (St. Catherine).—The monthly meeting of this Branch came off on the 4th of May, instead of the 13th as it would be inconvenient for the President, Rev. J. N. Gordon to attend on the latter date. In the chair was the President and associated with him were the following gentlemen, D. A. Thompson, Vice-President, Alex. McKay, Treasurer, R. Campbell Clarke, Secretary, R. Douie, G. McGregor, I. Rose, T. Francis, J. Scott. After the reading and confirming of the minutes, the President moved for the suspension of the standing orders, for the purpose of bringing forward a resolution. This was granted. Gentlemen, he said, you are aware, that we now, no longer have the services of Mr. Hirst as Instructor of Agriculture for the parish of St. Catherine. Be it resolved: That a letter be forwarded to the Instructors' Committee, supporting the appointment to the office of Mr. H. Mossman, whom we all know to be energetic and well qualified to fill the position. The resolution was accepted and seconded by Mr. George McGregor, and all the members concurred in the appointment. The next item brought forward was that of the Secretary, Mr. R. Campbell-Clarke, *re* the appointment of Mr. Theophilus Francis as district resident constable for Redwood. He impressed on the members as to the growth of the district both in trade, intellect, and population. There are two churches, three schools, five shops and one post office. He next cited the recent mishap in the district, there being three shop-breakings since the beginning of this year, he also touched on the further ill-growth of the lawlessness of the rising generation. It is desirable, and the time has arrived when the Inspector of Police for St. Catherine be approached, asking him to appoint a resident district constable. The resolution was accepted and seconded by the President, Rev. I. N. D. Gordon. The Vice-President, Mr. D. A. Thompson, next brought forth a scheme *re* the establishment of a Loan Bank to the Society. All the members spoke in favour of it, but nothing definite was arrived at. Further discussion on the subject was deferred until the next meeting.

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Santa Cruz Mountains (St. Elizabeth).—The annual meeting of this Branch was held on the 8th April, 1910, commencing at 4 p.m. with the President in the chair. The minutes of the last meeting were taken as read. There were 17 persons present. A letter was read from the Parent Society in *re* Prize Holdings Competition. The Travelling

Instructor had already given the necessary information asked for. A letter was read from Mr. Pursden asking for information and suggestions on the present policy of the Railway as affecting the agricultural interests of the island. The following resolution, moved by Mr. N. E. Seal, seconded by Mr. Ed. Wallace, was carried:—That in the opinion of this Branch of the Agricultural Society the Railway ought to be conducted as a developing medium of agricultural interests of the island and that every facility should be offered for the transport of agricultural products and implements of husbandry so as to give incentive to the increase of exportable agricultural products. The Secretary was instructed to reply to a letter from the Secretary of the Parent Society, as follows:—That in the opinion of this Society it does not matter whether the two persons who are members are husband and wife or not, such should get a JOURNAL. If the Society say that it cannot afford to supply sufficient JOURNAL the Branch will consider the matter. Otherwise this Society thinks that each member should receive a JOURNAL every month. In answer to a letter from the Tropical Products Company the following resolution was moved by Mr. Allan Knight, seconded by Mr. Ed. Wallace:—That the consensus of opinion in this district is that if the Tropical Products Company were to start experiments in the several districts and cultivate cassava and give statistics of the cost of production the agriculturists would adopt the method and cultivate if it were shown that at such costs the cultivation would be conducted so as to give a reasonable profit. The reports of the Secretary and Treasurer were read and after adoption were ordered to be published. At this stage Mr. Palache eulogised the Society for its splendid achievements during the year. A vote of thanks was also tendered to the officers, show committee and all others who helped the business of the Society during the year. The President then vacated the chair and Mr. Palache was asked to carry out the work of election of officers for the new year. By motion the old officers were all returned *en bloc*. The following were enlisted as new members:—Messrs. H. G. Swaby, E. J. Smith, Walter Franklin., Adolphus Green, Abraham Witter, Mrs. S. Maxwell, Misses A. Hendriks and I. Morin. The Chairman gave notice to move at the next meeting a resolution as to the use to be made of the Society's fund. The next meeting was fixed for the 19th May, 1910. There being no other business the meeting adjourned.—N. E. SEAL.

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Santa Cruz Mountains (St. Elizabeth).—This ranch has much pleasure in submitting its third Annual Report which covers a period of twelve months, viz. from April, 1909, to March, 1910. At the first regular meeting of the Society the following officers were elected:—Messrs. S. Maxwell, President, R. Lawrence and G. Smith, Vice-Presidents, Rev. S. C. Ashton, Treasurer, N. E. Seal, Secretary, A. R. Knight, Assistant Secretary. The officers along with the following form the Executive Board, viz.:—Messrs. P. S. Robertson, Wm. Farquharson, Allan Knight, Wm. P. Davis, A. F. Lawrence, Joseph Salmon, Duncan Blair, Mrs. Ashton, Mrs. Carvalho and Mrs. Neish. The first item of great interest that occupied the attention of the Society was the distribution of certificates to those who won prizes at the last competition for the parish. During the course of the year the rules governing the Society were printed and distributed among the members free of cost. It was proposed that the balance of the Society's fund be referred to the managing committee to recommend how this money may be best used to the advantage of the Society. In May last year it was proposed to hold a Show on Malvern ground, subject to the approval of the proprietors of Malvern. Mr. Palache then gave several and useful practical hints respecting the holding of a Show. On the 16th July, a letter was read from the President, resigning his seat on account of press of work. The Society did not accept his resignation and so asked the President to reconsider his determination to resign. His services were retained. The time at all the meetings wa

the Rules and the Prize List. The meeting was a highly instructive one and was rendered most enjoyable by songs and recitations which were thrust in from time to time as the regular work proceeded. The singing of the school children was delightful and the solos, duets, etc., by Mr. S. A. Schleifer, Miss A. J. Morrison and Messrs. S. Bell, F. Hunter, H. S. Schleifer and S. A. Schleifer were well received. Miss Witter's recitation on "The Farm Yard" was very amusing. The meeting adjourned amidst great enthusiasm.—SAML. A. SCHLEIFER, (Secretary).

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Mocho and Brixton Hill (Clarendon).—This Branch had a very interesting meeting on Monday evening, the 18th April. There were present 25 members and a few visitors. The chair was occupied by A. A. Green, Esq., President. There was a very helpful discussion on the cultivation of banana in the district. Mr. L. Rodon led the discussion and several members took part. Mr. Hirst, Agricultural Inspector, was accorded a very hearty vote of thanks for the very clear and masterly way he spoke on the subject. The Prædial Larceny Law came on for discussion and persons to be authorized under the Law to work in the district were nominated. Seven new members were elected. The meeting was brought to a close by the singing of the National Anthem. The next meeting was fixed for Thursday, 19th May next, when there will be a discussion on the cultivation of vegetables led by the Treasurer, Mr. W. A. Virtue.

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Darliston (Westmoreland).—The quarterly meeting of this Branch was held at the usual place on Friday, 15th April, at 9 a.m. Present: J. W. Mennell, Esq., President, Captain Coward, Vice-President, R. W. Smith, Esq., Treasurer, and Misses C. J. Stewart, Alfred Spence, Jas. Harvey, C. L. Scarlett, Joseph Stewart, George Scott, Anthony Levy, Joseph Williams, S. J. Philip and the Secretary. The Minutes of the last meeting were read and confirmed. The Secretary read a letter sent to the Branch by Mr. E. W. Spence and after which reading he was instructed to reply thanking him for same. A letter from the Secretary of the Jamaica Agricultural Society, acknowledging receipt of recommendation for authorised persons, as also the reference made about the Agricultural Instructor which he promised to place before the Instructors' Committee, at the same time expressing his opinion that the document will make no difference to the decision of the Committee. Mr. C. J. Stewart asked if any reply had been received to the communication sent to the J. A. S. protesting against the dismissal of H. D. D. Mennell, Esq. The Secretary said no notice seemed to have been taken of the communication by the Parent Society. It was decided to ask the J. A. S. if an Instructor had been appointed in Mr. Mennell's place as no one had been around this neighbourhood as Instructor. It was agreed that the sum of two pounds be drawn from the hands of the Treasurer to close all Show accounts, and that the Treasurer promises to obtain as much of money as was promised to replace that which is to be withdrawn. The Treasurer was instructed to pay off all prize money and certificates to be got by the President not to exceed ten shillings. The third annual meeting of this Branch will (D.V.) take place on Friday 20th May, at 9 a.m., at the Enfield School-room. Members are therefore requested to pay up their subscriptions before, or on that day.—J. H. HEDLEY.

(Communications were duly acknowledged on the other papers on the same subject circulated to the Instructors Committee. The previous meeting of the Instructors Committee was in December, the next meeting would have been held in March and a new Instructor advertised for but the Society had to wait on the approval of the Legislative Council and on the vote. The Instructors Committee met on Wednesday 20th to make their arrangements. Mr. Mennell's services only terminated on the 31st March; the Branch meeting took place on the 15th April 1—Secretary J. A. S.).