

paratively little to show you at the present embryonic stage yet at all events we have made a beginning, and the first step is the one which counts in a new institution such as this. A considerable number of field experiments have been begun as you have seen, and a beginning has also been made of the more necessary farm buildings, but funds are unfortunately not yet available for the erection of the required laboratory and office buildings and dwelling houses.

When the land was taken over from Messrs. Natal Estates about June or July last it was all under cane and it was only by degrees that it was harvested and became available for ploughing and other preparations for planting. In fact the last of the cane was not cut until late in December, although Natal Estates were very good in harvesting cane in some of the fields long before they would have done so if they had only considered their own convenience. However, some of the land has in consequence not been prepared as thoroughly as we should like, and planting was delayed until rather late, but it was considered essential to get some of the more important experiments under way as soon as possible and not lose another season. Another unfavourable fac-

tor has been the unprecedented summer drought, of which most of you are painfully aware. Nearly all the cane planted has come up and on the whole has made better progress under the circumstances than we expected. We have had very deficient rainfall until last month, after which things improved considerably. I would like to take this opportunity of expressing my appreciation of the keenness and efficiency of the field manager, Mr. Schwikkard and the rest of the staff, who have worked very well under inconvenient and discouraging conditions.

We shall be glad to welcome any planter or miller or anybody interested whenever they desire to visit us, and would be pleased to have the opportunity of explaining our work to you in perhaps somewhat greater detail than has been possible with the large attendance we have here to-day.

In conclusion I wish to thank you all for the great interest you have shown in our work and I hope that there will be many other field days in the future, when no doubt we shall have more of interest to show you. (Hear, hear and applause).

This then concluded the business of the day and the members dispersed.

Fifth Day—Friday, 16th April, 1926.

DISCUSSION ON THE ADVANTAGES OF CO-OPERATIVE BUYING.

The Congress resumed at 10 a.m.

Chairman: In regard to co-operative buying, I think it would be a step in the right direction. Anything in co-operative buying in this industry is always a step in the right direction. The Government are preaching it, the heads of Departments are preaching it, we are getting leaflets on it, periodicals on it, and the newspapers are preaching it. Everybody is preaching co-operation in this country and I think there is much to be said for it in many directions especially in regard to the purchase of commodities for the sugar industry. I may say that the principle of it has caught on with certain sections of this industry and I understand that they are doing very well. They have set up certain machinery and the planters are getting very great benefits indeed from their scheme of co-operative buying. I understand the merchants will allow any concern for this purpose which is brought into being something like 1% on most things and 2½% on certain other things. I think that the purchase of material on wholesale terms is also quite possible. So that the system of co-operative buying and establishing a

bureau or some sort of central house for co-operative buying for the whole of the industry is quite within the range of possibility, seeing that we have already established organisations which can be added to. They have all the necessary machinery set in motion for this sort of thing. I now invite discussion on this very interesting subject.

Mr. Patrick: The position is this: A certain section of the cane planters have their organisation going to-day. You don't want to complicate it by a series of other organisations. It seems to me the idea would be to enlarge the scope of that particular organisation, which at present exists, so as to cope with the requirements of any planter. It is very simple. We are all agreed on the principle, we have the organisation, merely enlarge it.

Capt. Greig: I agree entirely with what Mr. Patrick has said. The organisation we have is acting very well. I personally entirely agree with the principle, but I think it would be a pity to disturb our little scheme which we have at present. If a bigger scheme came about whereby the smaller scheme could be absorbed, well and good, but to-day we are doing very much better than we did before.

There is another Association I happen to be connected with—the De Jagers' Planters' Association. We buy practically everything. We have done that for many years and of course we have through our millers other means of getting things cheap. There is Hulett's (Natal) Planters' Association through which we can also buy. That little organisation helps our fertiliser purchases enormously. So you will see that the principle is entirely agreed upon among us. Possibly some very much larger scheme could be brought out with much greater advantage, a scheme say whereby we could import direct. That of course would require a lot of discussion. If we could only standardise, the planters would be in a much better position. Fix on one particular type of plough, harrow, seuffer, etc., which could be done, or say two alternative lines.

There are certain districts where you may work better with one than another. Instead of thirty or forty different types have only two and the question would be very much simplified.

Mr. Dick: I am pleased to see that this subject has been placed on the agenda. It is one that has engaged the attention of planters for many years and it has been talked about, but very little has been done. Of recent years an effort has been made by Hulett's (Zululand) Planters' Association to form themselves into a close body with the object of buying their requirements through a central organisation. Our organisation has been in being some three years, starting in the initial stages with the buying of fertilisers and ration requirements. The necessary machinery and staff have at the present moment been appointed so that our requirements for rations, fertilisers, and all other commodities can be met.

We are in a position to-day to deal practically with all planters requirements right throughout the industry, and I feel sure that it would be advantageous to planters to inquire into the working of this organisation, which is purely for their own benefit. It is one of those organisations which we hope will in time lead to co-operation in other directions. It is well that it should be discussed and brought out at a Congress to make some recommendation that the machinery available at present be investigated to see whether it is not possible to build on that foundation a structure which will be of use to the whole of the industry. The scope of such an organisation is unlimited. We as planters have for many years supported the principle of collective bargaining, as is correct. There is no reason why we should not be equally strong on principles of collective buying, and the day may come when the organisation may deal with sugar collectively as well, but that is looking in the distant future. At the moment we should concentrate on the question of buying, and build on it in the light of the experience gained. It has been a source of encouragement to those who initiated the buying scheme, and we have had the support of our millers in connection with it to a very great extent, which has guided us over some of the pitfalls into

which we might otherwise have fallen. In considering the question of joining up with such an organisation I say it is one for the mutual benefit of all planters. (Applause).

Mr. Dent: It would be very interesting if Mr. Dick would kindly explain to us the scheme as it is now being run by Hulett's Planters' Association, especially to know from him whether their planters get assistance from their millers in the scheme and in what way.

Mr. Dick: I will endeavour to trace briefly the outlines of the scheme. At the present moment we have a buyer who carries on the ordinary business of a broker. He is in close touch with all the merchants in town, and calls for quotations every morning for articles required by the various planters.

He has his sheets on which the quotations are marked, and subject to quality and other things being equal, the lowest price receives the order. The planter in ordering his goods has two alternatives—he can pay direct in the ordinary course of business and in accordance with the ordinary principles of business, or he can take the other alternative which is that he can ask that his account with his miller be debited to the extent of the purchase which he requires. That is where the miller has been of great assistance to us in that respect. It is a matter at the end of the month of settling up the various accounts and paying one lump sum to the Secretary of the Association who distributes to the various merchants the amounts due. That refers to goods in general and implements. When you come to the question of fertilisers the same principle is adopted with this exception that terms are provided for. It is usual in the fertiliser business to give twelve months terms, and in some cases two years. That is arranged through the miller. The mill is in a position to pay twelve months after delivery for this fertiliser which has been received by the planter, and to deduct from his monthly cheque for cane until such amounts have been liquidated. The experience we have gained has proved that the principle we are working on is very sound. The planters are thoroughly satisfied to-day with the conditions. The prices are keen; to give you an instance if you go round to the Buying Department office you will find of a morning thirty to forty representatives from merchants looking for quotations, looking at the board and taking down the particulars. That all tends to increase competition where previously planters were ordering direct—it is not inferred that they did not get reasonable prices, but we claim that they get the best possible price under this system and, as I explained before, there are two methods of paying. I think briefly that explains the situation. I must say that the advantages are enormous. I said previously that the scope is unlimited, and so it is. Just think of the position to-day of most of us on the question of ploughs. We fiddle about with different brands of ploughs. Say you have a break in the morning, as sure as anything that is the part you cannot get a spare for. That is not as it should be. There is no reason why with an organisation in being

and consisting of practical men, it should not be possible to standardise within certain limits and say "that is the class of plough we recommend and we want a cut price for that plough and we also want a certain percentage of spares always in hand." You can carry it to any commodity that planters require. Take a wagon. What is simpler than to standardise a wagon or say two wagons and when it comes to the commencement of the season instead of each planter writing and ordering one wagon he would send to his central organisation. Say fifty or sixty wagons are required; out goes the contract. What is the result? It must of necessity be a cut price. As I say the scope is unlimited and I hope this thing will be tackled properly. I am sure any assistance our Secretary can give will be gladly given. (Loud applause).

Capt. Greig: What Mr. Dick has said in regard to Huletts' (Zululand) Planters is practically the same with regard to Huletts' (Natal) Planters; we are in exactly the same position. We buy through the organisation and get excellent terms. In some cases we save 15 up to 17%. In fact we can buy far cheaper than when we went direct. It is the same with fertiliser. You get absolutely bed rock prices. The point of standardisation of wagons is an excellent one.

Chairman: I think one very important point has been lost sight of and that is this: that it is going to cost the planter nothing, not a sixpence, if you run on the same lines as the organisation which has been set up.

Mr. Patrick: I hope Capt. Greig will forgive me if I differ with him on one point. He spoke about importing. I think as the sugar planter and miller make their money in this country it is up to them to spend as much as they can in the country, provided they are getting a square deal from the merchant; the principle being recognised with the Government a good deal more of late than ever before that the local merchant must be given a chance to tender instead of orders being supplied from overseas. I think the same applies to us, provided we get a square deal from the merchant, to see that the money is spent in the country. I think the organisation will take care that we do get a square deal.

Capt. Greig: I did not actually mean importing in large quantities, but importing to order. That is not quite what I mean perhaps. The point Mr. Patrick put is a very good one. I suppose it is up to us to spend our money locally provided we get a square deal. There is a certain organisation up-country which can land a certain type of plough 32/- cheaper on rail at their station than a store-keeper can, and that is done by buying direct.

Mr. Dodds: In connection with standardisation of agricultural implements I would like to point out

that the experiment station is available for the comparison of different types whenever members so desire. It has always been a matter of surprise to me that the system of co-operative buying has not been more extensively employed in this country. I have seen it applied very advantageously elsewhere, especially in Louisiana under the auspices of the American Sugar Cane League.

Mr. Dent: I think it is a great pity that none of the millers are here to-day so that we could hear their views on the subject. I think the scheme which Huletts' Planters have started is an extraordinarily good one. It seems to me that other planters who are not in those associations would want the help of their mills in any case, or alternatively it may be on a cash basis. You can't have this thing run on a credit basis. I think this Congress ought to move a resolution recommending this subject to the Sugar Association to take up at once. (Hear, hear).

Mr. Dick: Would Mr. Dent add "and investigate the present organisation as to its suitability for building on."

Mr. Dent: Certainly, with pleasure.

Mr. Dick: Then I have great pleasure in seconding the resolution.

Chairman: I think we are taking a wise step in recommending this to the Sugar Association. Mr. Dent mentioned that the planters would look for facilities to the milling Companies. I think they would do that all right. They have already done so in one important group. Mr. Dent also stated that the planters would have to pay cash for their commodities. As a matter of fact the merchants all give thirty days and some sixty days. That would still obtain in regard to this co-operative buying.

The following resolution was then proposed by Mr. Dent, seconded by Mr. Dick:—

"That the subject of co-operative buying be referred to the Sugar Association for favourable consideration and that early investigation of the existing organisations be recommended with a view to a co-ordinated scheme for the industry being prepared."

Carried unanimously.

The following resolution was then proposed by Mr. Patrick, seconded by Capt. Greig:—

"That it be a recommendation to the Sugar Association that a Committee be appointed to inquire into the standardisation of implements and farm equipment necessary for the industry."

Carried unanimously.

At 11 a.m. the Congress adjourned for tea, and resumed at 11.20 a.m.

DISCUSSION ON SOUTH AFRICAN RAILWAY TRUCKS.

Chairman: This is an important subject. Mr. More the Assistant General Manager of Railways is here and anything that is suggested will receive his sympathy I am sure. The ideal of suitable trucks has been mooted for some time and several suggestions have been made, but nothing has eventuated.

We had a very useful discussion here the other day of Mr. McMaster's paper. He has had some travelling abroad and has seen some railway systems in work and has some useful suggestions to make.

Mr. Ed. Saunders asked if Mr. McMaster would state what he had seen and what he considered to be the best thing to be done.

Mr. McMaster: This question of trucks has been going on for some time. The chief difficulty is to get everybody to agree to a uniform type of truck. It is no good trying to put any proposals or suggestions before the Railway authorities unless the industry is unanimous in supporting any uniform type of truck they wish to have installed. (Hear, hear). Now the type of truck that is very useful in Cuba has been in use there for a great number of years. It is a standardised truck and it handles perhaps forty million tons of cane a year. I know that the authorities there consider that the truck cannot be improved upon at present at any rate. It struck me as being a peculiarly adaptable truck for the sugar industry, and I understand that in addition to carrying cane this truck is a very handy truck for carrying timber, sacks of potatoes and that kind of thing. A brief description of the truck I will give you now. It is either a 15 ton or 25 ton truck. It is a high truck with the cane loaded up to the top, and it can be opened at the bottom, and is tipped into an auxiliary cane carrier. The method of loading this truck at the planters siding is in the form of a gantry—a very cheap thing called the Cuban Cane Hoist, where the cane bundles, which are about $3\frac{1}{2}$ tons, are lifted up and dropped into this truck. All the labour required for loading those trucks is the driver of the cart and one man for running a little petrol engine for the hoist. The bundles are just slipped into the car and they get very even weights. There is no packing of cane to be done; their cane is cut into 3 feet lengths which makes the actual bundling of the cane easier. Now then the car comes to the mill it goes on to the tip and tipped into the auxiliary carrier. I took a careful note at the Central Moron Mill of the number of men required for handling 8,000 tons of cane a day. Including the weighbridge man, the man for unlocking the bottom of the car, and the man working the tippler and auxiliary carrier, it took eight men altogether for 8,000 tons of cane a day, which shows that very considerable economies in labour could be obtained by means of the introduction of a truck like that. But it would mean that all the cane loading arrangements at the mills here would have to be altered, which would

take time and money, and it means that gantries would have to be erected at the planters' sidings; I think it is all a question of £ s. d., but I think in the end it is bound to save a great deal of money.

Mr. Saunders: Would there be any difficulty in off-loading those trucks on to the carrier with the ordinary grab in existence at the various mills?

Mr. McMaster: I don't think there would be any difficulty. Of course the sides of the truck are higher.

Mr. Townsend: Can Mr. McMaster tell us if most of the planter's sidings are loaded by the grab which he described and if so whether a considerable saving is effected on the old method of manhandling?

Mr. McMaster: I did not take a record of the cost of manhandling. I know the actual loading operations there, where labour is very high, costs about four cents a ton, the actual loading that is, from the carts into the big trucks.

Mr. J. Murray: In considering any form of truck three essential points must be considered. First the method of cutting the cane and its transport to the siding, secondly the means of removing it into the railway truck, and thirdly the method of discharging it from the railway truck when it gets to the mill.

In Cuba the cane is cut in three pieces and flung into bundles 40 feet apart and loaded into carts with four chains in each cart, and a man can cut and load 7,000 lbs. per day. The cart is emptied after being weighed in the manner which Mr. McMaster described, that is when using big trucks, but in small trucks the chains are left on the cane. The big trucks are hinged on the top either on the sides or ends and off-loaded at the factory by hydraulic tipping tables on to a superimposed carrier such as I recommended Mount Edgcombe to instal and which has, I understand, been a great success. This method is not followed with the small trucks as a crane picks up the bundles from the trucks and empties the cane into a superimposed carrier. These methods are extremely simple and require only three men to feed the largest mills grinding some 1,500 to 2,000 tons of cane per day. In Louisiana some factories have a shed about 500 feet by 100 feet with grabs similar to those at Maidstone and Tongaat, and the cane is lifted by grabs from closed sided trucks on to a sloping table feeding into the cane carrier. Now we have to consider whether any of these contrivances are suitable for our conditions here and if so what is the best form of truck suitable. Before saying anything about any new class of truck that should be recommended I should like to show a scheme that might give immediate relief, as while some form of truck suitable may eventually be evolved naturally it will take a considerable time. Some years ago in connection with a scheme for unloading cane from S.A.R. trucks hold-

ing 24 tons the question of fitting the trucks to carry this amount in the manner required had to be considered. In doing this the Railways stipulated that any alteration to their trucks would have to be designed so that no holes would be drilled in the body of the truck. I made a drawing as I will now show you on the blackboard (shows a method of fixing uprights, etc., to the sides of the truck by means of hookshaped bolts or clamps). This scheme was placed before the Railway authorities and they accepted it, but owing to the difficulty of getting the cane off-loading apparatus from America during the war the scheme was dropped. I am of opinion as far as the S.A.R. trucks are concerned, that the Cuban side or endtip truck is not suitable till such time as the mills adopt the tipping system, and with many different types of unloaders running into large sums of money I don't think the mills will do this. It is no use doing it unless they all do it. I think we will have to stick to fixed sided trucks with the extra high sides to hold the required and stipulated quantity of cane, but with these high sides the loading of them by hand will be most difficult, and the method suggested by Mr. McMaster will have to be tried to overcome this difficulty. To sum up the matter I should recommend for a start that the cane should be cut in short lengths and thrown in bundles 40 feet apart, then carts be used with the slings put in them and the cane loaded into them, and that an apparatus such as Mr. McMaster described be erected at a siding and the carts be emptied into S.A.R. trucks by this means the S.A.R. trucks off-loaded by grabs on to a superimposed carrier.

Seeing that Mount Edgecombe has a superimposed carrier and does not depend so much on S.A.R. trucks to the same extent as other mills, and that they have a grab, I would suggest that the industry buy one of these siding off-loaders and the necessary chains and have a trial made of this system. This would not involve a great deal of time and could be done during the coming season, and if it is successful it would enable the other estates to get ready for the 1927 crop.

Mr. G. S. Armstrong: This has been an annual topic since I have been in sugar. There have been many attempts to design some alteration to the trucks so that they would have the use of the trucks for other purposes in the off season. I have a sketch before me of a truck which I saw in Cuba in 1920. I went over there to try and pick up a few wrinkles. I may tell you candidly that I look upon this as a matchbox. This is made of ordinary wood. The truck comes alongside the mill and they have a tippler which tips the cane into a huge carrier which will carry up to 50 tons of cane. So far as this truck is concerned it would not last two months at our mill. It would be pulled to pieces by the grab in less than a month. This is not the sort of truck that will stand the racket as we are situated. Had our line been a 4 ft. gauge and we had the means they have there of tipping the cane into a large carrier, and if the cane was cut shorter, I would say it might answer, but as we are situated here, I don't think we can improve very much on what we

have got. That is on account of the rough usage it gets at the mills. I suggested a scheme some time ago for bringing the cane in bundles in chains and that is being done in one instance. That planter sends the cane to the siding and the chains are lifted and dumped into the truck. That man averages over 30 tons on a truck.

If any alteration is to be made I would much prefer altering the present trucks as suggested by Mr. Murray. I asked the Department to give me a number of trucks—wooden trucks with the short sides—and I would alter them to suit the conditions of my mill. The Department have not yet agreed to that. I offered also to put the rails on and the chains and fix them the following year provided I got the same trucks sent back to me. But the Department pointed out that they could not allow their trucks to be altered. I think something on the lines as suggested would be good. It would not help the millers one bit but it would help the planters.

Mr. McMaster: Most of these Cuban trucks are made of steel. I have other photographs which show them made of steel. The truck is not made or intended for the use of grabs at the mills. When the mills are getting up to big capacities the economical handling of cane had to be considered. So far as that truck is concerned I doubt if at some of the mills the hoist used would give us the capacity because when you come down to the bottom you have to lift the cane clear of those sides and then into the carrier. The point I would like to put forward is this, that they are very much ahead of us in Cuba. We have a lot to learn from these places. If this is being found suitable in Cuba—and they have every expert on the job there—they handle a hundred times more cane than we do here, and they have found it is the right and proper method, well I don't think they are far wrong in it.

Mr. Armstrong: I would like to say that had the lay out of the mills been such to allow of it this would have been quite a fair proposition perhaps, but the lay out is not suitable. What our friend has said about the great economy I quite agree with. I saw 2,000 to 3,000 tons of cane a day being crushed and they only had two men on the mills. We used to have 40 and to-day we have ten or twelve. But you must start at the root of the thing. We have not constructed right, and that is the fault.

Mr. E. Saunders: I think what Mr. McMaster says is correct, but it is not a commercial proposition here just now. I think something on the lines of Mr. Murray's suggestion would be a great advantage in the meantime. We have adopted the principle on our loading stations of gantries worked by animals where the cane is not of large quantities, and worked by an engine where it is larger. We don't find any difficulty. The truck comes in with a couple of wire slings and the whole of the cane is picked up off the truck and dropped into the railway truck. Where you would have difficulty is by loading with wagons, and there the only feasible suggestion is the sling. In the meantime for a practical proposition I think something on the lines suggested by Mr. Murray

would be a great advantage. The only objection I have to the appliance illustrated is that I think wood is a mistake. The same thing would be gained by using steel. We have not found any difficulty in loading or emptying on this principle; it is only an improvement on the present system of fixing sticks on each side. Every miller will realise that to have to use bamboo or other sticks is no good, you don't get them back. The planter has not the means of getting new ones and he has to fix sticks of cane in. The result is that a great deal of cane is thrown off on the way to the mill. Something on the lines suggested by Mr. Murray could be done by the railways. At the end of the season the superstructure could be removed and kept until the following season. If the railways would adopt that and use piping or something like that, and the loading banks were worked by gantry, a considerable saving would be effected. In the case of wagon loading it would have to be by sling. With regard to the general question of loading on the Cuban principle we may have to come to it, but to adopt that now means thousands of pounds of expenditure and the throwing out of present plant.

Mr. Dick: This is a subject which is of great interest to us as planters. It is one that has been discussed periodically and with no result. The question one has to ask is: are we in earnest in this matter; is the present truck suitable for the conveyance of cane? I claim it is not. To back up my contention, going back a number of years when cane was loaded and pieces packed along the sides to strengthen it there was a certain loss of cane in transit. It may be possible to overcome that by careful driving and reducing curves, but the easiest way out was by piling it in a stack in the truck supported by poles, etc., and since that was adopted the loss in transit has been reduced to a minimum. We are now hoping to be in a position to reduce costs of production. That is our one aim and object and the question of cheap loading is one we are all interested in. I should like to know whether Mr. Murray recommends the building of a special truck for the carrying of cane or converting the present truck. The truck outlined by Mr. Murray represents a mixed benefit from the planters' point of view. The question of installing gentries would take time. That truck is not going to be loaded by hand labour. Some two years ago an attempt was made to solve this problem, but it died a natural death. Demonstration trucks were made by the Department, but unfortunately the opportunity for examining those trucks did not occur. I suggested in those days the idea of telescopic side frames, and I still maintain it is on those lines that an immediate solution of this problem can be had. I never saw the truck which was designed with telescopic sides before it was abandoned. I asked many planters whether they used it, without result. I think this question should be tackled seriously and a small committee should be appointed to go into the matter thoroughly with a view to solving it once and for all and place the transportation of cane on an economic footing.

Perhaps Mr. More would be good enough to give us a few words as an indication of what one might expect.

Mr. Hill: As one who has paid very heavily this year for poles I would like to say a few words. When we put four gum poles on each side of the truck we never lost a stick of cane. A good many years ago I gave a rough sketch to the Association, showing that by putting four poles on each side of the truck, 8 feet long, it would obviate the whole of our difficulty. I submitted that to the railways also, and I consider the cost of fixing each truck with poles would be £6. To-day I have paid out just on £30 for gum poles. Some have cost me from 20/- to 22/- a ton; that has been retained by the miller with the cane at 15/- a ton! With reference to the sketch of Mr. Murray's I should say that 6 tons of cane would go into that before you got up to the level of the iron. If there is any difficulty in taking the uprights out you can loosen your bolts and lift that out quite as easy as we can lift out a gum pole to-day. I don't think the cost of putting 8 jarrah 4 x 3 poles would exceed £6. I would be delighted, personally, to have a truck fixed up for me. Occasionally we run out of poles and directly we do lose our cane. I don't think it is advisable to put complicated and expensive schemes before the railways, but if we put up a commonsense method which has worked out satisfactorily I think we will receive consideration.

Mr. Townsend: It has been a matter of considerable controversy between ourselves and the railways for some considerable time as to the best method of loading cane and I want to point out to Mr. More the serious loss to the planter under the present system. I don't think it is up to a planter to come and suggest to Mr. More what system should be used because I think there are sufficient engineers on the Railways to devise a simple scheme which would probably meet the case. I agree with what Mr. Armstrong has said about these trucks which we have just heard about. If we had them here in six months they would be out of commission. The present S.A.R. truck is suitable with a little alteration to protect the cane from falling off. I would point out that the loss to the planter is considerable when we are cutting nearly all old ratoons and the greatest difficulty is to get cane suitable for framing. The result is that we cannot get the tonnage on the trucks and if you attempt to pack above there is considerable loss in cane falling off. The system pointed out by Mr. Murray is no doubt a very good one, but the trouble is in recovering the poles or being able to load over them if they are a fixture. If you don't make them a fixture the mill which has not a gantry cannot off-load without considerable loss. I don't know whether it would be possible to devise a scheme by which steel uprights could be used running in slots. I think that we must bear in mind that whatever trucks are being altered they would be used for cane entirely during the cane season and there is no reason why a steel strut should not be made to slide down with a hinge to it. It could be arranged to hang over to allow the planter

to use the open truck until the cane reached a certain height and then raise it. If a scheme of that sort was adopted there would be no fear of loss of timbers and the inconvenience of having to find timber, and I feel sure it would help considerably. I do feel that it is up to the Railway authorities to devise a scheme to meet the planters so as to avoid the heavy loss through falling off.

Mr. McMaster: I want to be perfectly clear that the reason I am raising this question of the Cuban type of truck is that I am looking forward, not to this year or next year, but perhaps in five years time when mills which are doing 1,200 to 1,300 tons a day now are going to do 2,000 tons a day and whatever happens our loading arrangements at the mills will have to be altered then. If this is the right and proper method, if you think it is eventually the one that will have to be adopted, in spite of the cost to the mills and the cost to the railways to make this type of truck, it should be adopted—this is the point I want to make—in five or six years' time. I know it can't be done in a year. But from what I have seen I consider this is the most economic and right and proper way of handling cane both from the planters' and millers points of view.

Mr. Townsend: I don't wish to cast reflections in any way on Mr. McMaster's ideas. What I wanted was to meet the immediate conditions.

Mr. P. Murray: I agree with Mr. McMaster in everything he says. My idea was at the present moment we could not have the truck he speaks about. I suggested that there were only two factories which had the superimposed carrier which is suitable for this class of work. The cart and gantry could be tried at Mount Edgecombe, but the truck can't be done until such time as the tipping arrangement is introduced here.

Mr. Munks: I would like to ask Mr. McMaster his opinion on improvements to the present type of truck which the Railways tried about two years ago. The one with the chains has been condemned, but the telescopic one is the one I thought would work very favourably. I believe that the grab used to damage the telescopic apparatus at the off-loading.

Mr. McMaster: I think Mr. Warner would be in a better position to say. I don't think it was very successful.

Mr. Warner: With reference to this sketch of Mr. Murray's at the opening of Zululand in 1905 the Railways supplied the poles as fixtures something after that design. They were about five feet above the body of the truck, but when they came to off-load at the mill it was found unsuitable. Where we did not have grabs and had to off-load by hand, when you came to the bottom of the truck it had to be thrown over 9 to 10 feet. When we took off the poles they got lost. Then when we started with grabs it was the same thing because you could not get to the bottom of the truck and lift it right over. If you have fixed sides up the side of the truck when loading you have to put the cane in lengthwise and then turn it round to throw it down and it increases the cost of loading very considerably. Some time back we had a conference about having some

suitable arrangement for trucks. I don't think it ever came to anything. The suggestion was made that movable sides be put on the trucks so that when they came to the mill they could be put down. There was a lot of objection to that, some proposed telescopic poles one inside the other, and others suggested hinges. I don't know if any were ever tried. I don't think it ever got any further until last year when we started with gum poles. Mr. Hill has said that it costs him so much for poles, but he forgets that those poles were paid for at the mill at the price of cane. (Laughter). I think Mr. Saunders or Mr. Armstrong suggested putting the cane in bundles with chains, but the difficulty arises then when the chains come to the mill of putting them back in the trucks, and when they get to the loading sidings it may be difficult for the planters to tie them up sufficiently tight unless they had special arrangements for loading. The chains would get lost also, some would get them back and some would not. I am afraid to offer any suggestion in regard to a new truck unless they could re-arrange the whole matter which as Mr. McMaster says will take time. We would have to make arrangements at the mill for off-loading, and the planters would also have to make arrangements at the sidings for loading. You can't fix up such a thing right away.

Mr. McMahan: While not directly interested in the question I think the suggestions of Mr. McMaster are valuable inasmuch as they refer to types already in existence. I would like to draw another point to your attention and that is the trucks which are in practical use on the canefields in Northern Queensland. (Proceeds to draw a rough sketch of truck). In that truck you have no sides at all. From my view of the railways over there I did not see the whole of the line carpeted with cane which the planter had brought up to a certain growth of maturity and then thrown away to cover the line as happens here. The line there is the same gauge as our own. The cane might be shorter, but I have seen Uba growing considerably higher there than in our average canefields in Zululand. They can be loaded by hand as at present. There the labour is very much more expensive; they were paying 17/- a day there. The cane cutters loaded the smaller trucks in the fields in wire slings; it is lifted by a gantry made out of gum poles and the iron girders are sold by the local storekeepers.

The cane is simply lifted out in the slings and put into this bigger truck and there the sling is undone and these chains are put over. I did not see any cane lost along the line. There may be difficulty with two lots of cane trucks passing, but they seldom pass opposite, because all the cane is going in the same way. The chains are fastened at both ends and can't fall off and catch in anything. Those trucks can also be utilised for other traffic.

Mr. Hibberd: I have also lost quite a lot of cane. I would suggest that we have a chain across the truck. The only difficulty then would be that in going along the chains sag to and fro and there would be a tendency for the cane to come over and perhaps throw the truck off. Therefore, I rather

favour Mr. Murray's idea. It must be something solid. My idea is that we should have four uprights not more than three feet high firmly bolted on. Between each of the uprights I would put chains on. I don't think there would be any difficulty in getting them tight. We ought to get bigger weights on the trucks. If we can get 40 tons instead of 20 all the better for us. There is only one difficulty and that is at the mill. They would say they can't use the grab. If it is possible to do so with a low upright I think that would not be very difficult. Mr. Warner said if you have high uprights the boys must turn the bundles. That is why I suggested 3 feet uprights. If cane is dropped loosely into the truck you will not get the weight. You must have careful loading and the nearer your truck is to a box of matches with cane all lying close together and parallel the better.

Mr. McMaster: I would like to say quite definitely that with the type of cane we are handling at Hulett & Sons mills we could not possibly use this form of truck this year. With the extra height we could not keep our mills running at half pressure because of the time taken to unload.

Mr. Coates: I think we are all agreed the present type of truck is obsolete, but before any type of truck is adopted there are two things to be considered. It must enable the planter to reduce his loading costs and it must also benefit the miller. Perhaps Mr. More would give us his views on the subject. I think the best thing is to have the committee to go into the matter.

Mr. Armstrong: We are all very grateful to Mr. McMaster for bringing this scheme up. It has brought forward some good suggestions. I think the idea suggested by Mr. McMaster might be considered and also Mr. Hibberd's. I would like to recommend to the sugar planters who are on the tram line to have a look at what Mr. Poynton is doing in our area. He is loading his cane in trucks in chains and brings it up to the ordinary truck. When that cane comes along it is taken up by grab and the chains returned. I think that is the cheapest and simplest way. I got a thousand chains which I have to-day. They have been at the mill for the last four years. I intend to do it that way with all the small trucks, but after being in Cuba I saw another scheme and the chains are of no use. They carry $2\frac{1}{2}$ to 3 tons and if that scheme was carried out and there was a siding for five or six planters to use and have a system as in Cuba they would save a lot of money. But you must remember that it would have to be supervised by a white man; you can't leave mechanical appliances to a native. In Cuba they have a man to attend to it and it is the most economical way of loading cane. Mr. Poynton, I think, averages 28 to 36 tons on his trucks and I don't think he ever loses a stick.

Mr. J. R. More: I am very glad to have been present and to hear the views of the members because this question of a suitable type of truck for the cane traffic is becoming a serious one. (Hear, hear). We really must do something to obtain a suitable type of truck. The present trucks have been in use for

about twenty years at least and the question of a new type has engaged the attention of the Sugar Industry for I suppose about the same time. We must be nearer a solution than we were. Now since I have been in Natal we have fitted up experimental trucks and sent them to the different sections of the line for experimental purposes, but they have not been successful in meeting the views of all the people connected with the sugar industry. Therefore, it is difficult for me to suggest to you who, after all, are experts in your particular branch of the sugar industry, such as those who load and those who receive at the mills. It is therefore, much easier for you especially as you number among your association men who are engineers and architects, and in fact every conceivable profession is represented by the sugar industry. So I am hoping you will be able to form a committee to consider the most suitable type of truck for your use. So far as I am concerned, I shall be only too pleased to arrange for an experimental truck to be provided on the lines that you may be in a position to suggest. I must candidly admit, not being an expert in either loading or receiving cane at mills or in the mechanical construction of trucks, that the discussion this morning has left me somewhat bewildered. What exactly you want and exactly what is suitable is beyond me (laughter), but I can assure you of this, that I shall be only too pleased to give you the very best assistance in my power to overcome the difficulties which beset the railways and planters. Mr. McMaster has presented a truck which looks very nice, and if the millers would adopt the tipping system it would be an excellent thing to introduce that, but will he be able to tell me when the mills will adopt this system, and until they do I am afraid we can't talk about that. At any rate your discussion has been very interesting and helpful and those officers associated with me on the Railways in Durban, including the Mechanical Engineer, will be only too glad to co-operate with the committee to devise the best means of handling your product. (Loud applause).

Mr. Dick: Might I ask Mr. More a question regarding gantries at sidings. At present does he see any objection to installing these gantries? Are there any objections the Administration would place in the way of planters installing such gantries?

Mr. More: I don't think so.

Chairman: I am sure we are all very pleased to have the assurance from Mr. More that he is willing to consider sympathetically any suggestion which a committee of the Association may make in regard to this matter. I feel certain that a committee of men who understand this thing and who work with them, will be able to evolve some type of truck which will be acceptable to the whole industry.

The following resolution was then moved by Mr. Dick seconded by Mr. Munks:—

“That it be a recommendation to the Association: That a Committee be appointed to collaborate with the Railway authorities and report at an early date on the question of suitable S.A.R. trucks for carrying cane.”

Carried unanimously.

The Chairman then thanked Mr. McMaster for his useful information and suggestions. (Applause).

DESIRABILITY OF OPENING UP NEW CANE LANDS.

Mr. Cochrane moved that this item be deleted and that no discussion take place thereon, as he considered the present was a most inopportune time for such a question to be raised.

This was seconded by Mr. Murray and on being put to the meeting the motion was carried.

EXCISE ON SUGAR.

On the motion of Mr. Townsend, seconded by Mr. Patrick it was agreed that no discussion take place on this point in view of the present negotiations with Government.

POPULARISING THE SUGAR CONGRESS.

Mr. Dent: I would like to bring this matter up for discussion. It seems to me an awful pity that so few planters and millers have attended this Congress. An enormous amount of labour has been taken to get people to give papers and they are extraordinarily interesting and informative and yet very few people attend. I submit that perhaps something might be done in future to popularise the Congress. I don't know in what way I am sure; whether perhaps we can't have some other forms of attraction or amusement to induce planters to come down. I also think something might be done if possible to minimise the expense to planters. The position is this that many planters have been away for a holiday perhaps and they are asked to come down here for a week. They very likely wish to bring their wives and families also, and it is a considerable expense to come down. I don't know if that could be altered in any way, but I do think we should in some way try to popularise the Congress so as to attract more planters.

Mr. Patrick: I am entirely in agreement with what Mr. Dent has said. I think we ought to get our brains to work on what new avenues we can open up not only for amusement, but for instruction also. I think the social side should be tackled so that the wives would come down. We might arrange demonstrations also at various times of the year of various implements which might be organised by the Experiment Station staff. I also think during Sugar Week we might devote a greater portion of time to outings at various places, instructive outings. In the last two years we have had a great number of papers and possibly I suggest we might be covering the ground fairly completely for quite a period without going back on them. If we had an assortment of outings it might appeal to the planters more. Certainly I think it is possible to make Sugar Week more attractive. These papers are somewhat heavy although instructive. I think we could intersperse social items and out-door trips a little more.

Mr. Dick: One can't help feeling that the remarks of the various speakers are to the point, but we have to ask ourselves whether proper procedure

is being carried out in connection with the Congress. It seems to me that the proper procedure to adopt to get the best results would be for the various Associations to appoint official delegates to this Congress who would come here armed with authority from their Associations ready to speak and handle all subjects intimately connected with planters' affairs. You then ensure a backbone for debate. These delegates would be sent down and their expenses paid. During the course of the deliberations the members who are sufficiently interested in the affairs of the Association will be in attendance. I quite agree that social attractions would also stimulate attendance and the suggestions made by Mr. Patrick are very good indeed. I have no doubt that as time goes on our Experiment Station will be able to offer us more in the way of attractions in the form of demonstrations, all to the good of the planters, but I maintain one of the first things we ought to do is to consider the advisability or otherwise of appointing official delegates from each Association.

Mr. Townsend: I would like to say that so far as I am concerned the Conference has been of tremendous interest and the subjects brought before the Conference have been of absorbing interest and instruction. I must congratulate the General Secretary and those interested with him for carrying out the tremendous amount of work he has done. I do feel that criticism no doubt is always good for one, and it probably will be an incentive to better the proceedings next year. But I must say that the encouragement really to this sort of thing is to come from the planters themselves. When the amount of work has been carried out by the committee and the General Secretary, and they find it is not properly appreciated, one loses heart. (Hear, hear). I would like to mention another thing. So far we have not seen the Mayor or any of the Councillors here. If the Americans come here they are treated to the whole show and shown all over the place. There is a tremendous amount of interest to the sugar planter here, electrical works and various other works of the different municipal departments, and a few hours spent by the Corporation in showing them round would add to the interest of this Conference. Also the Government might place a tug at the disposal of the delegates for a run over the bar. I remember when the Labour delegates came down here I was one of the representatives to meet them and the Government took the trouble to show them all over the harbour and practically the whole of the town. I don't suppose we are of the same importance as the Labour delegates, but I do think the Industry deserves some recognition from the Municipality of Durban and the Government, and I think that the social side of the Congress if made a little more interesting would add tremendously to the attendance at the Conference. I heartily support what has been said by Mr. Dent.

Capt. Greig: I would like to associate myself with the remarks made by Mr. Dent and Mr. Townsend.