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DEPARTMENT OF AGRICULTURE

STRAITS SETTLEMENTS AND

FEDERATED MALAY STATES.

THIRD

INTER-DEPARTMENTAL AGRICULTURAL CONFERENCE.

HELD AT KUALA LUMPUR, AUGUST 2nd to 6th, 1932

Report of Proceedings, Appendices of Memoranda and Resolutions.

Published June, 1933.

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PERKHIDMATAN ARKIB PERD... MALA...
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FOREWORD.

The accompanying volume contains the Debates of, Resolutions passed by and documents presented to the Interdepartmental Agricultural Conference held in August, 1932.

The present financial position and the consequent necessity for the curtailment of expenditure did not permit of these documents being printed as would have been the case in normal times.

However the Government considered that the information rendered available by the Conference was of sufficient value and importance to render desirable that all departments represented at the Conference should be provided with a permanent record of the proceedings and the decisions reached thereat. Accordingly, with the sanction of the Federated Malay States Government, a sufficient number of duplicated copies of the proceedings has been prepared to enable this to be done.

H. Tempest

Director of Agriculture,
S.S. & F.M.S.,

Access. No: 2225 1258/80

Class. No:

P R E F A C E .

The object of the Conference was to examine certain existing agricultural industries, other than rubber, particularly in relation to the native small holdings with a view to ascertaining what is the present position, what is the immediate outlook, what, if any, improvements are capable of being introduced, and what means can be adopted for bringing these about, using so far as possible existing machinery and resources, while the effort was also made to ascertain what, if any, new industries could be introduced or what industries at present existing on a restricted scale could be extended particularly with a view to lessening the dependence of the country on imported staples.

The method adopted was to list the articles of both imported food and certain other commodities capable of being produced in Malaya, and from this to make a selection of the most promising for discussion.

The industries selected were - Rice, Copra, Tobacco, Fruit, Vegetables, Coffee, Arecanuts, Pepper, Tea, Groundnuts, Sugar, and Poultry raising.

Memoranda on these industries were prepared indicating existing imports, prices, market conditions, the present condition of cultivation and the chief directions in which improvement was considered possible.

At the Conference the memoranda were discussed and resolutions framed summarising the main conclusions arrived at.

The Conference also discussed general economics of peasant agriculture with special reference to grading and marketing peasant produce and the finance of peasant agriculture, while Chinese agriculture was also considered.

Certain other questions were also dealt with, viz. Agricultural Shows and Home Gardens, and part of one session of the Conference was devoted to certain matters in relation to land laws.

The Conference was not merely an Agricultural Officers Conference but an Inter-departmental gathering, the field of which covered the major part of Malayan agriculture in relation to smaller proprietary holdings, but excluding rubber.

It was attended by representatives of the Civil Service, the Departments of Agriculture, Co-operation, Irrigation, Surveys, Customs, Veterinary and Education.

The Conference immediately followed the successful Agricultural Exhibition held on July 30th, 31st and August 1st, 1932.

It was opened by His Excellency the Governor on July 30th at 2.30 p.m. A copy of His Excellency's opening address is annexed. The Conference then adjourned until Tuesday, August 2nd and thereafter met daily until August 6th.

The sessions on the first two days were presided over by the Director of Agriculture, that of the third day by the Director of Co-operation. The fourth day was given up to the consideration of administrative questions resulting from the work of the preceding days and to the discussion of land questions; it was presided over by the British Resident, Selangor. The fifth day dealt with Chinese agriculture and was presided over by the Director of Agriculture.

The organisation of the Conference was arranged by a Committee consisting of the Director of Agriculture, the Director of Co-operation, the acting Director of Co-operation and the Chief Field Officer, Department of Agriculture.

The secretarial work was performed by Messrs A.Thompson and M.H.Blacker, M.C.S., of the Department of Agriculture and Mr. Staynes, M.C.S., of the Co-operative Department.

The programme of the Conference is annexed, together with the resolutions summarising the findings of the Conference on the various subjects discussed.

Department of Agriculture,
S.S. & F.M.S.,
Kuala Lumpur. 22nd March, 1933.
R.

PROGRAMME OF THE INTER-DEPARTMENTAL AGRICULTURAL CONFERENCE (1932)

Opened by His Excellency Sir Cecil Clementi, G.C.M.G., on Saturday July 30th, 2.30 p.m.

		Memorandum in Appendix No.
TUESDAY, August 2nd 10 a.m. to 1 p.m. and 2 p.m. to 5 p.m. (In the Chair - Director of Agriculture)	**RICE.**	
	1. Irrigation and Drainage Problems.	1 and 2
	(a) Large Schemes	3
	(b) Small Schemes	4
	2. Colonisation of Rice Areas.	5
	3. Organisation of Supply and Distribution of Pure Strains of Padi Seed	6
	4. Possible Changes in Systems of Padi Cultivation.	7
	5. Statistics	8
	COPRA.	
	1. Copra Production by the Malay Small-holder.	9
	2. A Copra Kiln at Sabak	10
WEDNESDAY, August 3rd. 10 a.m. to 1 p.m. and 2 p.m. to 5 p.m. (In the Chair - Director of Agriculture)	**TOBACCO.**	
	Present Position and Possible Development of the Industry	11, 12 and 13.
	FRUIT.	
	1. The "Survey Method" and its Application to an examination of Fruit Production in Malacca.	14, 15 and 16.
	2. Organisation of Supplies of Planting Material of the most suitable and best Types of Fruits.	
	3. Organisation of Marketing.	
	4. Instruction in Methods of Cultivation	

		Memorandum in Appendix No.
WEDNESDAY, August 3rd. (Contd.)	POULTRY.	
	1. Poultry in Malaya: Local Difficulties and Faults and Methods of Improvement.	17 & 18.
	COFFEE, ARECANUTS, GROUNDNUTS, SPICES (including PEPPER), SUGAR AND TEA.	
	1. Present Position, possible extension of Area and improvement of Product.	19 to 33.
	2. Organisation of Marketing.	
	3. Instruction in Methods of Cultivation.	
THURSDAY, August 4th. 10 a.m. to 1 p.m. and 2 p.m. to 5 p.m. (In the Chair - Director of Co-operation)	1. The Necessity for the Accumulation of Economic Data.	34.
	2. Organisation of District Economic Boards.	35.
	3. District Agricultural Registers.	36.
	4. Methods of Improving, Financing and Marketing.	37.
FRIDAY, August 5th. 10 a.m. to 1 p.m. and 2 p.m. to 5 p.m. (In the Chair - The Hon'ble the British Resident, Selangor)	1. Resolutions from Preceding Sessions Concerning Problems connected with:-	
	A. Rice.	
	B. Copra.	
	C. Tobacco.	
	D. Fruit.	
	E. Poultry.	
	F. Coffee, Arecanuts, Groundnuts, spices, Pepper, Sugar and Tea.	
	G. Economic Data.	
	H. District Economic Boards.	
	I. District Agricultural Registers.	
	J. Financing and Marketing.	

FRIDAY, August 5th.
(Contd.)

Memorandum in Appendix No.

2. Tobacco Imports and Excise Duty (Revenue Considerations)

3. Agricultural Shows and Kindred Efforts, e.g. Weekly Fairs, Propaganda Van, Home Gardens Competitions. 38 & 39.

4. The Work of the Land Officers in Relation to Efforts to extend Agricultural Outlook.

SATURDAY, August 6th.

1. Vegetables 40.

2. Agriculture on Chinese Small-holdings. 41.

LIST OF MEMBERS OF THE INTER-DEPARTMENTAL AGRICULTURAL CONFERENCE, 1932.

Chairman.-

August 2nd and 3rd.	Dr. H.A.Tempany, D.Sc., F.I.C., (Director of Agriculture, S.S. & F.M.S.).
August 4th.	Mr. A. Cavendish, B.A., M.C.S., (Director of Co-operation, S.S. & F.M.S.).
August 5th.	Hon'ble Mr. T.S.Adams, B.A., M.C.S., (British Resident, Selangor).

District Officers.-

Tengku Abdul Rahman,	M.C.S.,	District Officer,	Kuala Langat.
Mr. L.A.Allen, O.B.E.,	M.C.S.,	" "	Klang.
Mr. I.W. Blelloch, M.A.,	M.C.S.,	" "	Raub.
Mr. M.V. Del Tufo, B.A.,	M.C.S.,	" "	Port Dickson.
Mr. J.A. Hunter, B.A.,	M.C.S.,	" "	Ulu Selangor.
Mr. R. Irvine, M.C.,	M.C.S.,	" "	Tampin.
Mr. G.A.de Moubray,	M.C.S.,	" "	Kinta.
Mr. J.S. Macpherson, M.A.,	M.C.S.	" "	Kuala Pilah.
Mr. G.H. Nash, M.A.,	M.C.S.,	Collector of Land Revenue,	Kuala Lumpur.
Mr. A.T. Newboult, M.C.,	M.C.S.,	District Officer,	Kuala Selangor.
Capt. H. North Hunt,	M.C.S.,	" "	Kuala Lipis.
Che Samah bin Haji Ali,	M.C.S.,	" "	Ulu Langat.
Mr. J.J. Sheehan,	M.C.S.,	" "	Temerloh.

The Customs Department.-

Major S.C. Raffles, O.B.E. (Mil.), Deputy Commissioner, Trade and Customs, F.M.S.

Mr. S.G.H. Leyh, O.B.E. (Mil.), Assistant Superintendent, Government Monopolies.

The Lands Department.-

Mr. E.B. Williams, M.C.S., Commissioner of Lands, F.M.S.

TABLES OF PRECEDENCE OF THE LITURGY—DEPARTMENTAL ARTICLES—CONFERENCES, 1932.

Great Britain.—

August 2nd and 3rd: Duke of Connaught, K.G., K.T., K.P., G.C.B., G.C.S.I., G.C.M.G., G.C.I.E., G.C.V.O., D.S.O., P.C., A.D.C. (Governor-General of Canada).

August 4th: Duke of Devonshire, K.G., P.C., G.C.M.G., G.C.V.O. (Governor of Co-operation).

August 5th: The Lord Archbishop of Canterbury, G.C.V.O., D.D. (British Realm, Empire).

August 6th: The Lord Archbishop of York, P.C., D.D. (Province of Yorkshire).

Dioceses Outside.—

Mr. Justice Mellish, K.C.S.I., Bishop of Lahore.

" Lord Ballicot, K.C.S.I., C.B.E., Bishop of Calcutta.

" Sir Arthur Dupuy, K.C.S.I., Bishop of Bombay.

" Sir Arthur Dobbs, K.C.S.I., Bishop of Madras.

" Sir Arthur Dobbs, K.C.S.I., Bishop of Rangoon.

" Sir Arthur Dobbs, K.C.S.I., Bishop of Lahore

The Chinese Secretariat.-

Mr. S.M. Middlebrook, M.C.S., Assistant to the Secretary for Chinese Affairs.

Capt. J. Jeff, M.C.S., Protector of Chinese, Selangor.

The Department of Drainage and Irrigation.-

Mr. F.G. Finch, Director, Drainage and Irrigation, S.S., and Adviser on Drainage and Irrigation, Malay States.

Mr. T.E. Emmett, A.M.I.C.E., Drainage and Irrigation Engineer, Kuala Lumpur.
Mr. D.S. Ferguson, B.Sc. (Eng.) Drainage and Irrigation Engineer, Bentong.
Mr. M.P. Murphy, B.E., Drainage and Irrigation Engineer, Seremban.
Mr. J. Miller, B.Sc., (Eng.), Drainage and Irrigation Engineer, Teluk Anson.

The Survey Department.-

Mr. T. Kitching, B.A., Superintendent, Survey Department, S.S. & F.M.S.,
Mr. C.Y.B. Sewell.

The Veterinary Department.-

Mr. R.A.B. Stanhope, B.V.Sc., M.R.C.V.S., Veterinary Surgeon, Selangor and Negri Sembilan.

The Education Department.-

Mr. O.T. Dussek, B.A., Principal, Sultan Idris Training College, Tanjong Malin.

The Co-operative Department.-

Mr. A. Cavendish, B.A., M.C.S., Director of Co-operation, S.S. & F.M.S.,
Encheˈ Baba, Malay Co-operative Officer, Malacca.

Capt. J.G. Crawford, B.A., M.C.S., Assistant Director of Co-operation, North.

Capt. L.D. Gammans, M.C.S., Assistant Director of Co-operation, South.

Mr. M. Dukes, Co-operative Marketing Officer.

Mr. G.F. Steynes, M.C.S., Attached to Department of Co-operation.

Capt. Hashim, M.C.S., Assistant Registrar, Co-operative Societies.

The Co-operative Department.-

Haji Mohamed-Eusop, Senior Co-operative Officer.

Encheʻ Mohamed Tahir, Malay Co-operative Officer, Perak.

Raja Musa, Malay Co-operative Officer, Perak.

Patek-Akhir, Malay Co-operative Officer, Selangor.

The Department of Agriculture.-

Dr. H.A. Tempany, D.Sc., F.I.C., F.C.S., Director of Agriculture.

Mr. A. Baker, B.Sc., A.R.C.S., Agricultural Officer, Johore North.

Mr. W.H. Barnes, Agricultural Field Officer, Negri Sembilan.

Mr. W.N.C. Belgrave, B.A., Cam. Dip. Agr., Chief Research Officer.

Mr. A.E. Coleman-Doscas, Dip. Agr. W.A., Acting Senior Agricultural Officer.

Mr. F.C. Cooke, A.R.C.S., B.Sc., A.M.I.Chem.E., Assistant Chemist for Copra Investigation.

Mr. J.A. Craig, N.D.A., C.D.A., A.I.C.T.A., Principal Agricultural Officer, Kelantan.

Mr. E.A. Curtler, M.A., Cam. Dip. Agr., Agricultural Field Officer, Cameron Highlands.

Mr. J. Fairweather, N.D.A., U.D.A., Acting Principal Agricultural Officer, Johore.

Mr. D.H. Grist, Cam. Dip.Agr., Agricultural Economist and Editor.

Mr. R.G. Heath, B.Sc. (Agr.), A.I.C.T.A., Agricultural Field Officer, Krian.

Mr. R.B. Jagoe, B.Sc., Acting Economic Botanist.

Mr. J.W. Jolly, Dip. Agr. (Hawkesbury), Agricultural Field Officer, Pahang West and East.

Mr. H.D. Leighton, N.D.A., C.D.A. (Glasw.), Agricultural Field Officer, Perak Central.

Mr. G.E. Mann, M.C., M.A., Vice-Principal, School of Agriculture, Malaya.

Mr. F.R. Mason, Dip. Agr. (H.A.A.C.) Agricultural Field Officer, Penang and Province Wellesley.

Mr. J.N. Milsum, F.L.S., Acting Agriculturist.

Raja Mohamed bin Raja Aman, Agricultural Field Officer, Perak South.

The Department of Agriculture.- (Contd.)

Mr. C.L. Newman, B.Sc. (Agr.), A.I.C.T.A., Agricultural Field Officer, Malacca.

Mr. D.G.P. Olds, B.Sc., Agricultural Field Officer, Singapore.

Mr. H.J. Simpson, B.Sc. (Agr.), Dip. Agr. Wye, Agricultural Field Officer, Selangor.

Mr. F.W. South, M.A. Chief Field Officer.

Mr. A. Thompson, B.Sc., Acting Government Mycologist.

H.H. Tengku Yacob bin Sultan Abdul Hamid, B.A., Acting Principal Agricultural Officer, Kedah.

Secretaries.-

Mr. A. Thompson, B.Sc., Acting Government Mycologist, Department of Agriculture, S.S. and F.M.S.

Mr. M.H. Blacker, B.A., M.C.S., Personal Assistant to the Director of Agriculture, S.S. and F.M.S.

Mr. G.F. Steynes, B.A., M.C.S., Attached to the Department of Co-operation, Kuala Lumpur.

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REPORT ON THE THIRD INTER-DEPARTMENTAL AGRICULTURAL CONFERENCE held at Kuala Lumpur, 30th July to 6th August, 1932.

The Conference was opened by His Excellency Sir Cecil Clementi, G.C.M.G., High Commissioner for the Malay States, on the afternoon of Saturday, 30th July, 1932.

Members representing various Government Departments in the Federated Malay States and Straits Settlements were present.

In calling upon His Excellency to open the Conference, Dr. H.A. Tempany, Director of Agriculture, Straits Settlements and Federated Malay States, said:-

"Your Excellency,

It devolves on me to invite Your Excellency to open this Conference; in doing so I would like to express the satisfaction that we feel that you have consented to do so, as well as at the keen interest you have shown in it.

There have been agricultural Conferences organised by the Department of Agriculture in conjunction with the Department of Co-operation, the Veterinary Department and the Rubber Research Institute in past years: the last was held in 1930 and was opened by the then Chief Secretary to Government, Mr. Cochrane.

These previous Conferences dealt particularly with technical questions and administrative matters strictly affecting the work of these Departments.

The present Conference is on rather different lines as it aims at a survey of peasant agriculture and methods which may be adopted for its improvement; as such, it affects not only the technical departments concerned but also a number of administrative departments including notably District and Land Offices.

In working out a scheme for the Conference the Agricultural and Co-operative Departments have worked in close association; the task of approaching other departments was somewhat delicate, but it was felt that the present situation warranted such a step.

It is with very great pleasure that we acknowledge the sympathetic way in which the proposal has been treated by all, and I would like specially to mention the encouragement received from the Chief Secretary and also from the Resident of Selangor who has associated himself very actively with the matter and has consented to preside at the sessions of the Conference to be held on Friday which will deal with administrative questions.

The following Departments will be represented at the Conference besides the Departments of Agriculture and Co-operation, viz. the Administrative Service, the Customs, the Land Office, the Irrigation, the Veterinary, and the Chinese Protectorate.

" The programme of the Conference envisages that the first two days will be given up to the consideration of the possibilities of a number of crops other than rubber with a view particularly to increasing production for local consumption and lessening dependence on imports.

The third day will be given up to the consideration of problems of marketing the produce of small holders and lessening the depression.

The fourth day will deal with administrative aspect of the foregoing.

While on the fifth day Chinese agriculture will be considered.

The programme is considerable; for its preparation much hard work has been involved in the preparation of papers and data. For this work I have pleasure in expressing our indebtedness to numerous officers of the Agricultural and Co-operative Departments and to certain others, while I would like especially to mention the work of Mr. South, and also of Mr. Thompson of the Agricultural Department who has been responsible for the secretarial work.

I have pleasure in inviting Your Excellency to open the Conference."

In formally opening the Conference, His Excellency said:-

"Gentlemen,

The Conference which I have been invited to open this afternoon is conceived on somewhat different lines from those which preceded it and aims at a study of the best means of fostering the cultivation of crops other than rubber, particularly food crops on small holdings, with the object of lessening to some extent the dangerous dependence of this peninsula on supplies imported from abroad.

In the speech which I delivered this morning at the opening of the Agricultural Exhibition I discussed the general position in this respect and quoted certain figures to show the large sums which Malaya annually pays away in purchasing imports which this country is by nature and by acquired conditions fitted to produce for itself. It is clear that, if our dependence on foreign sources could be decreased appreciably, the saving thereby effected would help to lessen the distress which is so painfully prevalent in several regions of Malaya.

Our neighbours in Java and the Philippines have to a considerable extent realised the danger of too great a dependence on imports. In both those countries the Governments have for many years consistently encouraged the local production of rice and other food crops, so that to-day they are largely independent of supplies from abroad, with the result (I am given to understand) that, while their export industries are hard hit, the condition of their peasantry is markedly better than is unfortunately the case in this peninsula. Incidentally I may point out that in those districts of Malaya which are self-supporting

"in the matter of rice production, the prevailing distress is markedly less acute than elsewhere. We have in fact before us an object lesson in the danger of depending too largely on the production of export crops to pay for the food which we need, and a demonstration of the fact that such dependence is bound to cause widespread distress when prices for export staples are depressed.

Obviously the large scale readjustment, which is required to bring about the desired reform, cannot be effected by governmental agency alone. It can only be secured by the efforts of the raiats themselves; but, if their efforts are to be successful, the raiats must be guided and assisted along lines which are known to be sound. In this the Government must necessarily play an important part, and in it many Government Departments are concerned. There must be continuous, co-ordinated and well-directed effort along agreed lines over a considerable period of time; and there must be general comprehension of and acquiescence in, the object sought and the methods employed, combined with public approbation and support of the general policy.

On this account there are represented at this Conference not only the technical departments concerned with agricultural development, namely the Agricultural, Co-operative, Irrigation and Veterinary Departments, but also administrative services, such as the Land Office, the Customs, the Education Department and the Chinese Secretariat. I hope that this attempt at a pooling of effort and of intelligence on the part of so many Government Departments may produce useful results. It certainly proves the desire of Government in all its branches to collaborate for the benefit of the country as a whole; and this is essential, if our present difficulties are to be surmounted.

The programme of this Conference provides that on the first two days questions concerning the cultivation of a number of crops shall be discussed. The third day will be devoted to consideration of certain economic questions affecting the agriculture of small-holders; the fourth will be given up to the discussion of administrative aspects of the work of the preceding days and to certain general questions such as Land Settlement, Prize Holding Scheme, Agricultural Shows, Village Garden Competitions and the like, while on Saturday, August 5th it is intended to deal with the question of Chinese agriculture.

I understand that among the many subjects which are to receive special attention will be the marketing of the produce of the small-holder. It is very clear that one of the main obstacles in the way of developing new industries among small cultivators is the difficulty of producing suitable marketing channels. This is especially the case where, as in Malaya, the country has in the past been mainly dependent on export crops, the marketing of which proceeds along organised and well defined lines. Malayan produce intended for the local market has hitherto been regarded as of secondary importance. It is frequently of inferior quality; and it has had to compete with imported articles, the distribution of which is regulated by long-established commercial methods. The small growers are often at the mercy of combines and rings which purchase their produce at very low prices for resale, with the result that the grower may receive only a small fraction of the price paid by consumer.

" The solution of this problem of marketing is by no means a simple one. It involves breaking down established practice, and many difficulties have to be faced and overcome. But, if progress is to be achieved, the provision of better facilities in this respect is of vital importance. The problem is, of course, by no means peculiar to Malaya; it occurs wherever small holdings exist; and I may point out that it was discussed in its general aspect at a Conference of Colonial Directors of Agriculture held at the Colonial Office in July last, when its importance was emphasised in a resolution passed by that body and since endorsed by the Secretary of State for the Colonies. I hope that this Conference may assist in providing some practical contribution towards the solution of the problem in its Malayan aspect.

As you are aware, the Government has adopted the recommendation of the Rice Cultivation Committee that a Department of Irrigation and Drainage should be inaugurated, and work has already commenced on certain schemes. The Rice Committee in its report emphasised the point that, if such schemes are to be fully effective, due attention must be paid to the need for administrative measures to secure settlement of future cultivators on the land under conditions which ensure that full advantage will be taken of the local facilities provided for drainage and irrigation and that in other respects also the needs of the cultivators will be met in an adequate fashion. It is recognised that, if provision of this kind is neglected, schemes, which from an engineering and agricultural point of view are well devised and well executed, may fail to achieve their object; and instances have not been lacking where this has occurred. The question of the most suitable measures to adopt in this respect will come before you for discussion, and I hope that in due course practical recommendations may be forthcoming.

A subject of special interest to me is the utilisation for agricultural purposes of lands that have been mined. To a newcomer one of the most striking and one of the most depressing spectacles in Malaya is the large extent of barren land resembling a desert, where mining operations have been carried out and the lands subsequently abandoned. It seems to me that the mining of agricultural land and the failure so far to devise satisfactory methods for ensuring that the land shall revert to agricultural uses immediately after it has been mined, is a serious menace which we must not ignore.

I am told that no insuperable difficulties exist to the reconditioning of mining lands for agriculture, after mining operations have been completed, the main obstacle being the expense, which the mining industry can ill afford to face at the present time. We have, however, to remember that, if the agricultural lands of Malaya are progressively allowed to be taken up for mining and are afterwards left in a barren condition, so that they cannot be utilised for agricultural purposes, we may be tending towards a condition in which large tracts of this country will have had their mineral wealth removed and their fertility destroyed in the process; and I think it is very necessary that we should keep in view the fact that mineral resources are naturally wasting assets, but that agricultural resources are not.

Interest, therefore, centres on steps that can be taken to restore the fertility of mining lands, once they have been abandoned: and we have before us the example of the Chinese vegetable growers, who in many parts of Malaya provide striking instances of industry and agricultural ability in reclaiming and cultivating these barren

"wastes and in turning them into productive vegetable gardens. I am aware that criticisms are frequently levelled at these people on account of the methods which they employ in manuring the land; but I feel that, if they can be shown how to obtain the same results by means which are unobjectionable, they will be quick to take advantage thereof with great benefit to the country. I understand that the Agricultural Department has this subject under consideration and that some steps are already being taken in an endeavour to solve the problem. I trust that in the discussion on Chinese agriculture, which will take place at this Conference, the subject will be kept in view, and that it may be possible to suggest methods for hastening the substitution of more satisfactory methods of agriculture and of encouraging their use by this type of producer.

The value of the imports of vegetables into Malaya last year was $4,126,000. By the encouragement of vegetable growing not only among the Chinese, but among the Malays, much can be done to keep this considerable sum of money within our own borders. The fact that we have in Malaya a large number of Chinese, who may in many respects be described as the finest market-gardeners in the world, should be a valuable asset at this time both as a means of direct production and as an example to other cultivators, provided suitable modifications can be introduced in their methods of manuring.

In relation to vegetable growing the question of marketing and distribution is again of the first importance. I understand that instances are by no means lacking where vegetables produced in this country are unable to compete with vegetables imported from Sumatra, notwithstanding the longer journey and the fact that the Dutch exchange is favourable to ourselves, simply because the marketing of peasant produce is so badly organised in Malaya. The same remark applies to fruit. An analysis of the economic conditions of fruit growing in Malacca has recently been carried out by the Department of Agriculture, and the results, which will be laid before this Conference apparently indicate that a Malay holding of say three acres in extent, comprising rice and fruit trees, would, if agricultural methods were improved, and above all if the disposal of the produce was conducted on sound economic lines, probably suffice to provide a satisfactory living for a small-holder and his family, notwithstanding the prevalent depression.

The keeping of poultry by small holders also offers great possibilities for development. We annually import a large amount of eggs and poultry from the Dutch East Indies. This should not be the case. The poultry and eggs required should be produced in our own country. But here again difficulties exist which require to be surmounted.

To my mind a picture of the ideal Malay homestead would be a small area of rice field, combined with a smaller area of kampong land. On the latter should be planted fruit trees of suitable types. There should also be an area for vegetables, and a certain stock of poultry should be kept. Such a homestead would provide directly for the requirements of the small-holder and might give him some surplus for marketing beyond his own immediate needs. The question of planting money-crops in addition naturally arises, and here, of course, some provision is very desirable, the nature of which would be dictated by the circumstances of each case. The lesson of the past is, however, that money crops should on no account be

"allowed to supplant food crops. If to a series of homesteads of this type can be linked an organisation which assists in the marketing of surplus rice and of kampong produce as well as of money-crops, when grown, and if the cultivators can be kept out of debt, it seems to me that we should have a scheme of peasant agriculture based upon a safe foundation. Under such a system periods of greater prosperity would still alternate with periods of less prosperity as the market values of the export money-crops fluctuated; but, no matter how prices for export staples slumped, we should be insured against the recurrence of the privations and hardships which we have to face at present.

It seems to me that you might well keep this picture before your minds as an ideal towards the attainment of which this Conference may prove to be a step. I assure you that recommendations, put forward as the result of your deliberations, will receive my most careful consideration. I wish the Conference every success, and I now have pleasure in declaring it open."

In thanking His Excellency for declaring the Conference open, the Hon'ble Mr. T.S.Adams, M.C.S., acting British Resident, Selangor, said that he would like to congratulate His Excellency for the support given by him for what might well prove to be the birth of a new spirit which would in due course owe a great deal to His Excellency's determination to prefer practical efficiency to paper efficiency.

The Hon'ble Mr. Adams continued that he felt that it was only recently that there had been a clear indication that Government really appreciated the fact that the permanent prosperity of the country depended on its native peasantry. The Conference was certainly a sign of Government's firm determination to co-ordinate its various activities to ensure that the foundation was sound. It also indicated that there was a certain amount of technique in administration, and that administrative officers fully realised that their aims could not be achieved without the skill and knowledge of the various technical departments.

In moving the adjournment of the Conference, Mr. A. Cavendish, M.C.S., Director of Co-operation, Straits Settlements and Federated Malay States said:-

"Your Excellency and Gentlemen,

I have been asked to conclude these proceedings and move the adjournment of the Conference until Tuesday next. In doing so, I should like to thank the Director of Agriculture for taking the initiative in inaugurating this Conference. The Departments of Co-operation and Agriculture have been working in close collaboration for the last few years and we realise that it is impossible to find an adequate solution for all the troubles of the peasant without the collaboration and assistance of administrative officials generally and officers of the technical and professional services in particular.

The Co-operative Societies Department is particularly interested in the welfare of the peasant. We all know that the peasant is in a bad financial condition, but we

"do not know the full extent of the economic ills from which he is suffering. This Conference will therefore consider the best means of collecting economic data which will show the economic condition of the peasant in each District and State in truer perspective. The progress of the Co-operative movement in rural areas has been seriously impeded by the lack of such economic data and the difficulty of obtaining it.

The second problem to which we are seeking a solution is the erection of certain machinery whereby the Agricultural, Co-operative and Administrative Officers, particularly District Officers, can consult and confer together and take steps to improve the economic condition and development of rural areas by what has been provisionally termed the creation of District Economic Boards, or Development Boards, or Organising Committees, or District Councils. The actual name of such an organisation is a detail which can be discussed and, I trust, decided at this Conference.

The last problem for which we hope to find some further enlightenment and possibly some practical solution is the financing and marketing of peasant produce. A joint committee of the Agricultural and Co-operative Departments has been considering this subject for some time. The problem bristles with difficulties. In the first place, the peasant is heavily in debt and lacks all credit facilities of a reasonable nature either for the opening up of new land or for the maintenance of his existing land and the sale of his crops.

There are many intelligent people, who, at the present day, scoff at and deride the co-operative movement. Neither I nor the Officers of my Department are bigotedly wedded to the co-operative idea. We are quite prepared to consider that there is some better method of improving the economic welfare of the peasant other than the co-operative method. Many Commissions and Committees have, however, been considering this problem throughout the world during the last two decades and they all with one assent emphasise the fact that there is no other method than the Co-operative movement known to human ingenuity capable of improving the position of the peasant.

In conclusion I should like to reiterate the thanks which the Hon'ble the British Resident has already expressed to Your Excellency for kindly coming to this Conference and giving us the benefit of your direction and an expression of your views on the leading rural problems of the day and for giving the Conference your good wishes and support. I now formally move the adjournment of the Conference until Tuesday next."

2nd August, 1932.

(Dr. H.A. Tempany, in the Chair).

The Chairman said that as the programme had already been circulated amongst the members, he would like to make a start straightaway. The first subject to be considered was rice and the most important among the various problems to be discussed in relation to this crop were those relating to irrigation and drainage. With regard to this question, he pointed out that the Rice Cultivation Committee had devoted a very considerable section of their report to discussions on questions relating to the irrigation and drainage of padi areas. The Committee had made it a point to distinguish between large and small schemes for drainage and irrigation, and had recommended that the carrying out of small schemes should not be done by Government but, as far as possible, by the cultivators themselves with such measure of Government assistance as might be desirable. On the other hand, large schemes had to be undertaken by Government, i.e. by the Irrigation and Drainage Department, and in addition, the Committee had emphasised the need for close co-operation between the Agricultural Department and the Drainage and Irrigation Dept. These recommendations were accepted by Government and were now, he thought, the accepted policy.

Further, Drainage Boards had been established in Malacca, and recently proposals had been approved for the establishment of State Irrigation Boards in Perak and Negri Sembilan. The Krian Irrigation Committee had been in existence for over a year and had shown itself to be a live and active body especially in relation to certain projects.

The Chairman then drew the attention of the Conference to certain documents which had been prepared by Mr. Finch setting out the main points of the programme with regard to new irrigation and drainage works and also to a detailed statement dealing with various schemes proposed for the four States of the Federation, the area involved thereby and the probable total cost thereof. He then asked the Director of Irrigation and Drainage if he could help in the discussion by making a few remarks on the subject.

Mr. Finch said that he felt that the Krian scheme was being taken as a standard for all irrigation schemes in this country, both from a financial point of view and in other respects. The financial point, he added, was very important at the present time and he asked the Conference not to fall into the error of comparing present day estimates with those for the Krian scheme which was undertaken nearly thirty years ago when the cost of labour and materials was certainly higher - $70 an acre compared with present day cost of $40 an acre.

With regard to the Panchang Pedena scheme, the total area estimated to be drained was nearly 15,000 acres. Work was started in the early part of the year, Government having voted for drainage alone $100,000 out of an estimated cost of $350,000 - $25 to $30 per acre. There was no provision for irrigation even to make up a shortage of rainfall. Attempts were being made to make the Malays of that area undertake the work.

Mr. Williams initiated discussion with regard to the question of labour. With regard to small schemes, he was of the opinion that labour should largely be supplied by the Malays themselves and it might even be necessary to apply a certain amount of compulsion towards the furtherance of public works. This would not be contrary to their custom. Also, according to the Land Code and the rules thereunder, it was possible to compel Malays to prepare sawah for planting and to prepare drains. No doubt the urge of hunger would supply a fair amount of labour, but it seemed necessary to implement the rules to a certain extent and apply a small degree of compulsion. He then asked that consideration be given to his suggestion.

The Chairman thought that one could definitely see at the present time in various parts of the country a great deal more willingness on the part of the Malay population to give greater co-operation and assistance in rice growing. He then instanced a certain padi area in the Dindings where Malays had taken into their own hands the work of making a bund to keep out sea-water, the arrangement being that so many days' labour were to be put in by each individual in order to complete the bund. He thought that compulsion would be repugnant, although in certain cases it might be necessary.

Mr. Cavendish said that Mr. Finch might have some knowledge regarding the construction by Malays in Kedah of a canal connecting two rivers. According to the system of "Krah" everybody had to turn out for work. He also suggested that as far as possible the work of drainage and irrigation schemes should be done by Malays themselves.

The Chairman asked Mr. Finch for his opinion and the latter replied that he was not very hopeful. Referring to Mr. Cavendish's statement, he said that the system of "Krah" ceased before he went to Kedah in 1910.

The Chairman said that small works in Malacca and Province Wellesley were contemplated and enquired whether it would be of any use asking the Malays to do the work.

Mr. Newboult said that his experience in relation to the Panchang Pedena was that the main difficulty was with regard to the construction of fairly large drainage schemes. It was probably beyond the capabilities of the Malays and also beyond his mental capacity to grasp the idea. Besides, the area was not affected by the rubber slump and coconuts were still paying. With regard to small schemes, the tendency seemed to be that Government should do the work and recover the cost through a cess. However, he stressed the need for some sort of compulsion in relation to the initiation and maintenance of small schemes.

The Chairman expressed doubt as to the possibility of legislation; whether in fact Government was competent to demand labour from Malays.

Mr. Cavendish thought that Malays would be willing to pay cash.

Mr. Gammans said that for many years past District Officers and other officers had encouraged the Malays to plant padi, and the results had not been what they ought to have been largely because the Malays could obtain from other

products a higher rate of income and at the same time do very much less unpleasant work than working in a padi field. Before getting down to the question whether the Malay was or was not going to plant padi on a greater scale than at present, it was essential to remember that the economic side of the problem should not be lost sight of. If the view was that the Malay should plant more padi regardless of the fact that some other crops might pay him better, then it was most necessary to have some definite padi policy for the future, e.g. import tax, guaranteed price, or quota. If such a policy were to be inaugurated, there were only two ways open: compulsion, or fixing of the price.

Personally he had not very much faith in the "compulsion" idea. It was rather repugnant to modern ideas and therefore consideration ought to be given to the economic side. Some scheme by which the Malays could be made to realise that padi planting would pay them better should be evolved and if by that scheme the price of padi could be fixed over a period, that undoubtedly would be the ideal to aim at, otherwise, they would not plant more padi.

The Chairman pointed out that even from an economic point of view more padi planting was essential so as to render the country less deoendent on outside supplies. Besides, the purchasing power in terms of padi was less than it was in prosperous times. The point was that the price of rubber had slumped far more in proportion than the price of padi. More planting aimed at increasing the production of food in this country and lessening the dependence of the country on imported supplies and such a policy seemed to have particular value especially in places like Kedah. At the present moment, he continued, Kedah was probably less hit by the existing depression than any other part of the Peninsula.

The policy in Java and the Philippines also was to produce enough or nearly enough rice so as to lessen dependence on imported supplies. If padi planting was not extended, it would not be possible to insure against the effects of slump. He pointed out that Java was still imposing an import cess on rice with the idea of stabilising the price of padi.

Mr. Gammans pointed out that large areas would be kept unplanted if the price of export staples rose. Therefore, it was necessary to fix a price for rice.

Mr. Pinkerton instanced that in Kelantan it was a rule that Malays should put in labour for irrigation and drainage schemes. Otherwise, they could be summoned. If that could be done in Kelantan, he did not see why such a system could not be practised elsewhere.

Speaking of his experience in Kelantan, Mr. Craig said that the cutting of drains and tributaries was done by Malays under compulsion. If they did not turn out to do the work, they could be prosecuted under the Land Rules.

Mr. Jagoe mentioned that the dam at Dusan Tua was built by the Malays themselves and Mr. Grist said that in Kuala Pilah dams were made by the Malays under the orders of Ketuas.

Mr. Williams thought that such works were done under the Land Rules.

Mr. Mason said that in the Dindings the question of the bund referred to by the Chairman had been going on for over 40 years and recently Government had turned it down. The work had then been carried out by the Malays themselves as the result of persuation by Malay Agricultural Assistants.

The Chairman then referred to Rule 53 of the Federated Malay States Land Rules, 1930, and pointed out that it definitely provided for the upkeep and maintenance of established padi areas only, and did not give powers to force people to work in new padi areas.

Mr. Williams suggested that the principles in the Land Code might be extended to small schemes.

Mr. Barnes pointed out that in Negri Sembilan where the Malays themselves put up a dam, they made the "tali ayer" and carried out other minor works also. In established areas Malays who did not turn up for work or, in the event of disability, pay for a substitute, could be prosecuted. As a rule, work was done as the result of persuasion by Penghulus.

Captain Hashim was opposed to the idea of compulsion. He said that though the Food Production Ordinance was passed in 1919 when he was Assistant District Officer, Balik Pulau, it did not work. He was in agreement with Mr. Gammans' suggestions generally and in particular with the suggestion to guarantee, if possible, a fixed price for padi. In 1924 the price of padi in Kedah was less than that in Krian and Government introduced legislation prohibiting importation of padi into Krian from Kedah. Further, no one would be willing to put in labour without getting a fair return therefor. Even now, he added, no rubber estate planted foodstuffs though it was compulsory according to the Land Code.

The Chairman remarked that in relation to irrigation works it might be desirable to apply a certain amount of compulsion and enquired whether it would be feasible to extend to the case of new works the powers at present provided under the Land Code for making use of compulsory labour in the case of existing works.

Mr. Nash pointed out that if a man were ill or too old, it would not be possible to compel him to work, and that there was no law compelling any one to provide labour.

Mr. Williams remarked that it would be quite easy to make the registered owners provide labour.

Mr. Gammans suggested that the Malay members might be asked to give their opinion on the subject of compulsion, and the Chairman invited their views.

Tengku Abdul Rahman said that his experience was that Malays in Kuala Pilah carried out necessary work not by compulsion but by persuasion only. However, he was inclined to think that Malays would agree to a certain amount of compulsion, because, after all, it would be the Malays themselves who would benefit.

Tengku Yacob said that he believed a certain amount of work was done by forced labour in Kedah. He thought that

persuasion and a little support from Government would be equally effective however. He then instanced that in one case Government spent about $1,200 to irrigate 3,000 acres at a time of drought. The men were paid 20 cents each per day for their labour and free passage through the land was allowed. He was of opinion that compulsion might work to a certain extent.

Haji Mohamed Eusoff gave it as his definite opinion that compulsion would be greatly resented by Malays in Perak. He observed that in Kinta work in connection with two or three schemes was done voluntarily by Malays, though Government gave assistance by supplying materials, but personally he felt that no forced labour would be effective.

Mr. Nash suggested that some conditions should be imposed on titles.

Mr. Gammans agreed with Haji Mohamed Eusoff's views and said that with the spread of education Malays would become more sophisticated, and the idea of compulsion would become increasingly unpopular throughout the country.

Further, in the early days at any rate, there were not many Malays on whom Government could exercise compulsion. Taking the question of improvement of relatively small existing areas of sawah and the possible extension of powers already in existence, he thought it would be better to put new schemes in front of the Malays of the locality in detail and if the majority of the peasants affected by the scheme were willing to go on with it, then definitely powers should be taken to compel the minority either to put in labour or pay cash in lieu thereof.

Enche' Samah remarked that in the case of established padi areas there were the Land Rules to go by and in the case of new areas - not too big - it was not unfair, in his opinion, for Government to make applicants for land in that area do a certain amount of work proportionate to the area of land to be alienated, provided Government would remit a certain amount of fees payable by the applicants.

Mr. South enquired if, in view of the fact that when a certain area of land had been turned into padi land by the construction of a dam, tali ayer, or other similar work, it had a certain value, it would not be possible to take into consideration the remittance of premium, that is to say practically impose some form of premium on the developed condition of the land.

The Chairman remarked that such a course might be impracticable in so far as large schemes were concerned, but that it might be suggested as an alternative for compulsory labour. Besides, the idea had definitely been arrived at that it was desirable that small schemes should be done by the cultivators themselves, and to make them do so under the instruction and guidance of the Irrigation and Drainage Department, it was necessary to have some means of compelling the raiat.

Mr. Finch said that he was in favour of paid labour for large schemes because when Malays settled on the land they could get money to pay the cess levied on the land later. As regards small schemes most District Officers and Land Officers

had found that they had to pay in some way to get work done.

Mr. Newboult mentioned that the construction and maintenance of large schemes must be done by the Irrigation and Drainage Department and it was almost impossible to get work done in small areas by forced labour. With regard to the maintenance of existing sawah, he thought the rules as at present would be sufficient, with the provision which Mr. Nash mentioned in the case of people who were incapable of doing the work themselves.

As regards extensions of existing areas, Malays would, however, have to put in some labour towards irrigation and drainage before they could use the land. In opening up such areas there was, however, no fear of compelling Malays to do what they did not want to do because where powers might have to be used, Malays would be consulted beforehand either by the Agricultural Field Officer or by the District Officer.

Mr. Williams said he would like to point out one or two limitations to his suggestions. In the first place, in reply to Mr. Gammans' earlier remarks as to compelling Malays to plant a crop of a less economic value, he wished to state that it was not intended that Government should compel the Malays to plant anything like sufficient rice for the whole country, but merely that it should use all means in its power to compel the Malays to plant rice sufficient for the needs of the Malay community. It was not difficult to prove that the average Malay had no rice land and could not get with his own exertions out of his rubber land sufficient for the maintenance of himself and his family. Therefore, he was in favour of a certain amount of encouragement and even compulsion to persuade the Malay community as a whole to plant sufficient rice for their own needs.

The second limitation was that his suggestion could not possibly be extended to big schemes. It must be limited to existing schemes and to small schemes. He accepted Mr. Gammans' suggestion that any one who did not furnish his own labour or pay cash in lieu thereof should be proceeded against.

With the permission of the Chairman, Mr. Williams then moved a resolution on the following lines:-

"That this Conference is in favour of the principle embodied in the rice cultivation rules in the Land rules and subject to the following modifications would welcome its extension to new works provided:-

Firstly, that the principle of compulsory labour should not in any case be extended to major schemes;

Secondly, that the principle of compulsory labour should only be used to obtain labour from a recalcitrant minority in regard to a scheme which had received the approval of the majority of cultivators whom it was destined to benefit; and

Thirdly, that any person who was called upon to provide labour under compulsion might in lieu thereof make a cash payment."

This resolution was agreed to.

Mr. Williams also reminded the Conference of the convention of the International Conference on the subject of forced labour generally, according to which forced labour was allowed in the case of communal agricultural works for common benefit.

Mr. Nash suggested forfeiture of title instead of compulsion.

Mr. Grist enquired whether the powers could be used to provide labour to cover the cost of material.

Mr. Williams replied that he thought a certain amount, at any rate, of the material would be obtained by labour direct.

COLONISATION OF NEW AREAS.

In this connection the Chairman drew the attention of the Conference to paragraph 102 of the Report of the Rice Cultivation Committee and also to the Memorandum which had been circulated. He stressed the need for laying down a definite policy in the first instance as to the nature of the land to be alienated, organised distribution of padi seed, and possibly also the co-operative idea of financing the simple needs of the raiat and the marketing of his crops. It was also important to envisage the attachment of a Malay Settlement Officer if schemes involving the expenditure of a considerable sum of money were to be undertaken successfully. The views of the Conference were then invited.

Mr. Williams agreed with the view that some sort of Colonisation Officer was necessary in regard to big schemes, but enquired to what extent and in what subjects the officer was to be trained. Personally, he took it that such an officer would require a certain amount of agricultural training and it was desirable that he should know enough about co-operation to get in touch with the Co-operative Societies Department, something about the Land Laws, and something about the working of the Irrigation Department. He also expressed his opinion that it was undesirable to attach him as an officer of any particular technical department and suggested that he should be the lieutenant of the District Officer.

Mr. Cavendish said that he thoroughly agreed with Mr. Williams. He said that he had put forward the idea of Colonisation Officer in 1925. The best model colony, he considered, was that in the Lambongs. Javanese from congested areas came over to the Lambongs and the surplus population in the kampongs migrated to Southern Sumatra. As soon as Javanese came to the Colony they had to undergo medical examination. They were financed through the Land Banks. The Colonisation Officer there worked in close consultation with the Resident of the District. In short, colonisation was an operation which would extend over some years and therefore it was essential to have permanent Colonisation Officers.

Mr. Gammans suggested that the Colonisation Officer's activities should not be restricted to agricultural advice or co-operative advice only. There were other factors concerned with the welfare of the raiat, namely, public health, education, and also animals and livestock generally. The Conference was going to consider the question of District Economic Boards the main object of which was to correlate the activities of different departments. He was of the opinion that the

Colonisation Officer should work under the directions of such a Board if and when it was created.

Mr. South envisaged the necessity for a subordinate agricultural officer in addition to be available to give advice to padi planters, and to look after matters of seed distribution. The Chairman said that in his view more than one such subordinate would be required.

Mr. South was of the opinion also that under the existing laws it would be difficult to enforce cultivation of more padi in cases where there was only one title for both kampong land and padi land. He instanced that such cases arose last year in the Sungei Manik area.

Mr. Williams said that he had already advised the Perak Government in the case of Sungei Manik area and pointed out that, where kampong land and padi areas were already adjoining, difficulties with regard to enforcing cultivation could be lessened very considerably by imposing conditions as follows:-

Firstly, that the landholder should plant and maintain his kampong land; secondly, that he must plant rice and rice only on the padi land; and thirdly, that if he committed a breach of either of these conditions, the whole land would be forfeited; fourthly, that the land should not be subdivided. The expense of survey could also be avoided.

The Chairman then summarised the position, suggesting that theConference was more or less agreed that provision for colonisation in new areas was absolutely essential, and that large colonisation schemes would best be under the direction of an administrative officer who should have some special training in relation to the agricultural, co-operative and economic side of the question, if such could be provided. The type of officer to be employed for the purpose would necessarily depend on the size of the scheme, and in any event, some provision might be necessary for the appointment of a Penghulu who had had special training and special orientation of outlook with regard to schemes, say, not exceeding 500 acres. Furthermore, it would be essential to appoint a certain number of agricultural subordinate officers for the purpose of running test plots, demonstration seed distribution and such like business, following the experience gained in Krian.

Mr. Doscas enquired whether it would not be advisable to indicate some policy of land settlement which might be desirable since, if a large area was thrown open for colonisation, there would be a great deal of capital expenditure before the Colonisation Officer could show any return. He added he was envisaging the inclusion of minor works in the original capital expenditure with regard to development.

Mr. Cavendish emphasised that Mr. Doscas' enquiry was quite pertinent and stressed that the financial side of the question should be given prior consideration. He then added that some mortgage institution would be necessary with regard to colonisation schemes and long term development schemes. In the Netherlands India, Central Banks were started in the various States and in 1920 was started the Central Cash Institution which controlled all financial operations by setting aside an initial capital of 4 million gilders.

Encho' Tahir said that the minimum area of land to be

alienated to each applicant should be considered. He was of opinion that three acres of rice land was insufficient for a family to live on when the price of padi was as at present and he suggested that perhaps three acres of padi land and two acres of kampong land in the same vicinity might be the standard.

The Chairman explained at some length how the Land Settlement Scheme worked in West Australia. Definite arrangements were made for taking up areas in forest land by settlers who were employed and paid by Government. Afterwards they had to contribute labour towards the work of establishing the holdings. During subsequent years they were charged.

It was also stated by the Irrigation Department of Ceylon, he added, that the length of time for the disapperance of jungle after an irrigation scheme was started was approximately 35 years. Colonisation could be speeded up if some system could be evolved for settling people in that way.

Finally, it was decided to incorporate in the resolution the words "it is very desirable, if possible, that with colonisation there should be combined some provision for the making of advances to prospective cultivators to clear their land and establish their homes and that the question of accomplishing some system of mortgage on co-operative lines should also be considered."

ORGANISATION OF SUPPLY AND DISTRIBUTION OF IMPROVED STRAINS OF SEED.

In this connection the Chairman drew the attention of the Conference to the memorandum by Mr. Newman, copies of which had already been circulated, and asked Mr. Newman if he had anything to add.

Mr. Newman said that the greatest care was needed in the selection of padi seed for distribution. This year he selected the highest yielding and best eating rice for distribution in Malacca and during the course of distribution came to understand that Radin 2 was not the most popular padi, because it was not the best filling rice though it was the highest yielder. The majority of the Malays preferred Nachin variety, because it had more "filling capacity", which factor counted more than taste. A special vote was also essential as the distribution was not self-supporting especially in view of the high cost of transport.

The Chairman stressed that filling capacity was a factor which should not be overlooked.

Mr. Finch pointed out that uniformity in distribution of strains would render the question of water control much easier.

The Chairman added that milling authorities in Krian also liked to get a single variety. Lack of filling capacity of rice has been brought to his notice in respect of Krian also.

With regard to the question of financing the distribution of padi seed, Mr. Newboult remarked that though Mr.Simpson had

collected seed from various parts of Selangor to plant at Panchang Pedena and three or four other areas of 1,000 acres each, it was found difficult to collect sufficient seed from all over the State. The people were not always able to pay ready cash. He had suggested that Government should buy the seed and the District Officers through the Penghulus should recover the price of the seed and the cost of transport to the sawah from individual owners. Some people asked that payments should be allowed by two instalments - half on delivery and half when the crop was being harvested.

Further, as there was no vote, special warrants had to be approved beforehand and the money received in due course from the planters. It would, therefore, be better if the Agricultural Department could have a special vote out of which to spend beforehand and the money collected later on to be paid into revenue. At present, he was hoping to get a special warrant from Government to pay to the Agricultural Department for seed plus cost of transport and then recover from each person buying seed at 11 cents a gantang.

Mr. South thought that in Krian arrangements could be made for Bagan Serai mill to purchase and store a stock of different pure strain padis. These could be purchased for seed purposes by the Department and distributed. Any surplus available as not being required for seed purposes at the end of the year could be converted into rice and sold by the mill in the usual way. By this means also the Agricultural Department could be sure of seed supply till the end of the season. The procedure followed in Krian during the last distribution was much on the lines of Mr. Newboult's statement. Some cultivators paid ready cash, while others were allowed a fairly extended credit.

Mr. South continued that he was opposed to any system of free distribution of selected padi seed except in very special cases. He thought that at least the price should cover the cost of purchase and transport.

Mr. Newboult agreed, but pointed out that where seed supplies were lost owing to floods and the people had neither money to buy nor padi to exchange, free distribution of seed padi by the Government was justified. He mentioned that a situation similar to this had occurred in Sabak where the Government supplied free seed in consequence of damage done by sea-water.

Mr. Robinson said that water supply was an important factor to be considered. In Panchang Pedena the amount of rainfall was such that even if the growing period was one of four months, there was probably a shortage of about 3 inches of rainfall a month; but the deficiency was actually greater because the time required for growing was five months. On the other hand, Krian was a case in point where time for growing did not apply. There was water supply throughout the season and two crops could quite easily be grown there.

The Chairman then took up the question of intercrops on padi land, pointing out that there were three points to be considered: intercrops, short term strains, and grazing. He then asked Mr. Mason to describe his experiments at Bukit Merah.

In doing so, Mr. Mason said that the recent padi season in Bukit Merah was rather unfavourable. About a fortnight

after the previous crop was harvested there had been afairly good rainfall and the land was in suitable condition for cultivation. The whole of the test plots were ploughed. Soon after, long beans and soya beans were planted. About a week after they were planted dry weather arrived, and there was not enough water to keep the crops going. However, long beans had already produced crops, and ladies' fingers and other crops were just flowering. The remainder of the padi land was now being ploughed. This year all the crops would have to be taken off in order to plant padi though this was not always the case. Of the crops which were tried, long beans and soya beans did extraordinarily well. Groundnuts did not do very well. Sweet potatoes had also been grown. Lopas had generally to be taken out altogether chiefly owing to the nature of the soil.

The Conference adjourned for lunch at 1 p.m.

At 2 p.m.

A copy of a photograph produced by Mr. Mason showing the cultivation of foodstuffs on padi land between the crops was passed round.

The Chairman then called upon Mr. Simpson to describe the efforts in Selangor to grow short term padi as an extra crop.

Mr. Simpson said that the question of growing an extra crop was discussed with the Penghulus and Ketuas in the inland Districts and practically all of them agreed to try short term padi planting. The scheme was on a small scale chiefly owing to the limited amount of short term padi seed available. He thought that if his attempts this year were successful, the majority of cultivators would adopt the policy of double planting after 1934.

The Chairman then asked Mr. Mason to detail his experiments at Glugor Station, Penang, in relation to growing two crops a year.

Mr. Mason said that Glugor Test Station had controlled drainage and also tali ayer for irrigation purposes. The first inter-season crop was planted in 1930, but June floods and damage by rats had spoiled the padi and no conclusive results had been obtained. Last season harvesting was completed at the end of February and the nurseries for the second inter-season crop were sown a month later. Owing to drainage difficulties beyond his control, the progress of crops had been retarded to some extent and he thought that the inter-season crop could not be harvested before the main crop had to be planted. The point worth remembering was that Glugor padi area was not a high yielding area, the rate of yield being only 350 gantangs an acre. In Balik Pulau the rate of yield was 800 gantangs or more per acre for long term padi, while for the short term padi the yield was only 400 gantangs per acre. Therefore, it was very difficult to persuade cultivators to take up double planting.

Mr. Belgrave pointed out that there existed some limiting factor to production with regard to the manuring experiments conducted by the Department of Agriculture, and that limiting factor confined the proposition of double planting to certain particular areas.

With regard to the rotation of pastures, the Chairman instanced that in Italy the padi planters had been able to increase their yields very considerably - more than double - by establishing the rotation crop system. Hence, the point would naturally arise as to whether the same could not be applied to Malaya, and this point was of particular interest in relation to the practice in Kedah and Kelantan where the grazing of cattle conjoined with the practice of growing rice was the rule. Suggestions had been made that if a regular rotation system was practised, it might be of importance both from the point of view of grazing cattle and from the point of view of increasing the rice yield. The Chairman then asked Tengku Yacob to narrate his experience in Kedah.

Tengku Yacob said that he had observed one area in South Kedah (Kuala Muda District) where Malays succeeded in growing onions. In the north, the lack of water supply and the destruction of crops experienced by allowing the cattle to graze in the field had restricted the rotation system. He was of opinion that if cattle could be controlled and means for water supply could be found, the rotation system would be a success.

With regard to pasturage in Kelantan, Mr. Craig said that he did not think rotation crops would be a solution. The crops of rice could not be raised thereby, and therefore it would not be economic. He suggested that fodder grasses should be grown in the kampongs. Under present conditions there were many areas of padi land where yields could not be raised to a point sufficient to pay for the experiment of two crops and the extra cost in cattle.

Mr. Williams mentioned that on his visit to Java some three years ago, he was told that this system was practised there in certain areas by irrigating the land part by part at an interval of about three months owing to the insufficiency of water to irrigate the whole area at one stretch. He thought that such a system, if practicable, would open one avenue of increasing the total crop, and at the same time would permit of inter-seasonal crops also being tried.

He went on to say that agricultural methods and agriculture generally in Java impressed him to an enormous extent. He suggested that though it was the policy of the Government to encourage officers of the Agricultural Department to see what had been and was being done in Java and other surrounding countries, the policy of sending officers to study agricultural conditions abroad might very well be extended even to Civil Servants and others who were indirectly interested in the success of agriculture in this country.

Mr. Belgrave pointed out that visiting officers should remember that many Java soils were undoubtedly far richer than those of Malaya.

Summing up, the Chairman proposed that the whole findings of the Conference be put in the form of a resolution on the following lines:-

(1) That the Conference agrees that at the present time it is very desirable, if possible, that production capacity on sawah land should be increased either by growing a large number of crops of padi, or by growing vegetables and other crops by rotation, or by other means;

(2) That the Agricultural Department should continue to carry on research work in this connection and that if results were available steps should be taken in conjunction with administrative officers to try and find out if work of this description could be done on a large scale by the cultivators themselves.

This was agreed to.

COLLECTION OF STATISTICS.

Mr. Newboult mentioned that everybody had realised the importance of the collection of statistics and enquired what the present method was and what advance had been made in the last few years.

Mr. Belgrave outlined the methods which had recently been tried and gave examples showing the difficulties which lay in the way of obtaining reliable estimates of yield. At the last Agricultural Conference it had been decided that the Hubback method should be tried to get statistics. In Kedah, the Hubback system resulted in an excess of 40 per cent over the true mean, whereas in Krian the excess was 35 per cent. In Malacca the system resulted in a deficit of 28 per cent.

Mr. Newman agreed that something was wrong in the collection of statistics and that something remained unknown at the moment. However, the fact remained that the results were exceedingly unsatisfactory.

The Chairman explained that the desirability of obtaining more accurate statistics in relation to yields of padi had been stressed by the Rice Cultivation Committee in their report. The Department was very much handicapped in any efforts it made to improve the yields of padi in any particular area by this lack of reliable statistics. He was inclined to believe, however, that the Department was getting nearer the truth by taking figures in respect of sample plots of 1/40 acre each. He suggested carrying the work one stage further to see if further information could be obtained.

Mr. South suggested that estimates of yields for comparative purposes could be obtained in certain seasons and in certain areas, such as Budu Valley in Pahang, where there was an exportable surplus of padi. The population and the area planted might be taken in conjunction with the estimated consumption per head, and the amount of surplus for export. The result would be an estimate of the total yield that would form a useful check upon the figure obtained by means of other methods.

Mr. Williams said that the figures could be worked out easily in a country consisting of an entirely Malay population. It would necessitate finding out how much was wanted for consumption by the entire population, the figures for which could be taken from the 1931 Census returns, and taking this in conjunction with the Customs figures of imports. The difference between the two would be what was produced.

Mr. Cavendish suggested that the figures could be compiled from the amount of zakat paid.

Enche' Tahir pointed out that as far as Krian was concerned, there was really no religious department undertaking the collection of zakat and, therefore, it would be difficult to estimate in that way. In the Federated Malay States the payment was voluntary and in the Unfederated Malay States was consistently understated.

Mr. Craig mentioned that in Kelantan yields were always understated owing to the zakat.

Mr. Finch enquired how the yields of Malaya compared with those of other tropical countries.

The Chairman replied that Malayan yields were more or less the same as those of neighbouring countries, viz., Burma, Siam, Java and Ceylon, and the methods of estimation in those countries also were more or less equally vague.

In closing the discussion on the subject, Mr.Williams stressed that District Officers should, by population as well as crop figures, endeavour to discover whether the Malays were feeding themselves.

COPRA.

The Chairman drew the attention of the Conference to a publication in the Malayan Agricultural Journal dealing with the above subject, and to the interesting memorandum put forward by Mr. Newboult giving details of a small venture in Sabak Bernam in which he had interested himself for improving the quality of copra as produced in Malaya and also for the sale of the product.

The Chairman then added that Messrs Cooke and Simpson had been detailed for investigations in relation to the general work of copra improvement and then called upon Mr. Cooke to give his views on the subject.

In dealing with the subject, Mr. Cooke explained that there were three aspects of the question of the price of copra for sale; the first was the quality of the copra, the second was the distance of the place of manufacture from a port for export, and the third was the state of indebtedness of the raiat.

In undertaking a campaign to obtain improved prices for copra he was of opinion that the only sound basis upon which District Officers and Agricultural Field Officers could work jointly was the widespread manufacture of good dry copra.

Copra manufacture in the kampong is so bad that it is the biggest contributory factor towards the low position which Malayan copra holds in the world's market. It must, however, be explained that hitherto the raiat has played little part in the manufacture of copra but has generally sold the nuts to Chinese producers. Now that the raiat is taking up manufacture for himself it is essential that the old mistakes should not be repeated, since wet copra is a product of very doubtful value and is no basis on which to work up a sound organisation.

The Chairman then enquired whether copra produced by the best of the Kuala Selangor kilns was equal to the Ceylon product.

Mr. Cooke replied that there was one producer who was able to produce copra equal in appearance to the best Ceylon product, but since the adequate price was not forthcoming he had reverted to Malayan estate quality. Judging by the exhibits at the recent Malayan Agri-Horticultural Association Show, he was of opinion that the raiat in the Kuala Selangor District could produce extremely good copra when required, but the problem resolved itself into one of organised marketing.

Mr. Simpson added that there were about thirty five kilns in Selangor able to produce good copra. The chief difficulty in Selangor had been that the Malay Agricultural Assistant had not been able to give sufficient attention to the education and demonstration side of the problem. This difficulty, he thought, could be overcome by appointing a Malay Officer who could be specially trained in the subject at Klang, so that he could assist the Malay Agricultural Asst. in training a few kampong people especially Penghulus and Ketuas to give demonstrations and lectures on the same lines as those given by the Rural Lecture Caravan staff.

Mr. Newboult mentioned that the chief difficulty experienced so far was apathy on the part of the majority of the Malays to the need for improving their own product. There were four hundred kilns in Kuala Selangor of which sixteen were capable of producing good copra. The improved type of kiln had been in existence in Jeram for the last three or four months. In view of the fact that the actual time and expense required to make a kiln was practically nothing, there was no reason why the raiat should not be able to put up a kiln himself.

He felt that the lines on which to proceed were to give as much publicity as possible to the work done by those who had taken the matter up with the assistance of the Agricultural Department. The man who got the first prize in the Exhibition would act as a splendid example. He was far in advance of the people of the locality and recently he had got in touch with Messrs Paterson, Simons & Co. Ltd., with regard to the sale of the product.

In Sabak there was keenness and competition, and it was necessary to give people requisite information. He was contemplating having a summary of Mr. Cooke's article in the Malayan Agricultural Journal translated into Jawi for the information of the raiat who could in due course be made to understand how to deal with the subject for his own benefit.

The Chairman then said that it seemed to him that the type of work done in Kuala Selangor could be extended to other parts of the Peninsula. He agreed with the view that there was need for a specially trained Malay Officer for service in the Federated Malay States, who could also visit the Unfederated Malay States if required to do so. It was high time that coconut producing Districts, other than Kuala Selangor, should take notice of facts. However, the essentail thing was that steps should be taken to improve the production and quality of copra by means of propaganda which would ultimately benefit the raiat financially, though it must not be forgotten that attempts would have to be made to overcome difficulties regarding marketing.

Mr. Fairweather said that before coming to the Conference he discussed the matter with one of the Penghulus who was in

favour of a campaign down the coastal area.

Mr. Doscas stated that one hundred and sixty five kilns sprang up in the Bagan Datoh and Rungkup Districts recently and suggested that, in view of the developments coming on so suddenly, it would be better to inaugurate in the first instance a short course on the subject at some convenient centre for the Ketuas of the various mukim so that this new-found enthusiasm might not come to naught from want of instruction.

Mr. Mason added that in Province Wellesley holdings were very small, and therefore, something more could be done on co-operative lines. The Malay Assistants had gone round with the Malay Co-operative Officer following the visit of the Rural Lecture Caravan, and their reports were awaited.

Mr. Jolly mentioned that coconut areas in Singapore were very old and the problem was mainly a Chinese one.

With regard to Pahang, Mr. South said that the number of dealers at Pekan was strictly limited and the growers were very much in the hands of Chinese who shipped the product to Singapore. Since the main difficulty was to get a satis-factory market, he suggested it would be better if direct arrangements could be made with Singapore firms to purchase the product.

Summarising the whole position, the Chairman proposed to put up a resolution on the following lines:-

(1) That the Conference has followed with interest the remarks and the information put forward by the staff of the Agricultural Department and by the District Officer, Kuala Selangor, in relation to the striking results that have already been obtained with regard to the improvement of copra production amongst the Malay small-holders in the Districts of Kuala Selangor and Kuala Langat.

(2) That the Conference considers that these efforts should by all means be extended, inasmuch as they appear definitely to tend to the improvement of the financial position of the raiat and the quality of copra from these kilns appears likely to find appreciably better prices.

(3) That the Conference agrees that in disseminating this information advantage should be taken of the knowledge of Ketuas and such like people, and that steps should be taken to train selected agricultural assistants in the work of erection and operation of these kilns. In addition, if it can be arranged, it is very desirable that an officer of the standing of Malay Agricultural Assistant should be trained and detailed especially for work in connection with the improvement of the quality of copra. This officer would be attached to the Head-quarters staff of the Department of Agriculture and would travel in the various Districts working under the direction of the Agricultural Field Officers.

This was agreed to.

Mr. Gammans suggested the making of a film.

The Chairman agreed it was a good idea.

The Conference adjourned at 4.15 p.m.

3rd August, 1932.

(Dr. H.A. Tempany in the Chair).

The Chairman read out the resolutions drafted by him in respect of the previous day's findings and with the additions and alterations suggested by one or two members of the Conference, all were agreed to. It was then decided to have them duplicated and placed in the hands of members so that they might be discussed further on Friday, when the Conference would be presided over by the Hon'ble the British Resident, Selangor. (The resolutions form part of the Appendix to the proceedings.)

TOBACCO.

In opening the subject for discussion, the Chairman drew the attention of those present to a letter addressed to him by the Commissioner, Trade and Customs, and Superintendent, Government Monopolies, expressing his regret at being unable to attend the session and sending his best wishes for the success of the Conference.

The Chairman then mentioned that all members of the Conference had been supplied with copies of memoranda by the Chief Field Officer, a memorandum by himself and a memorandum by Mr. Leyh of the Customs Department in which he had mentioned that considerable fiscal difficulties existed with regard to the expansion of the industry in Malaya.

The Chairman added that everybody would agree that fiscal difficulties, especially at the present time, were exceedingly great, and that they were complicated by the extremely political system which necessitated the existence of a large number of separate Customs authorities. The imports of tobacco into Malaya cost the country a great deal of money which it could not afford to lose. Besides, there seemed to be very good reason to suppose that Malaya could succeed in producing the majority of the types of tobacco consumed here.

He was of opinion that the most strenuous efforts on the part of the various Government Departments concerned should, from administrative and fiscal points of view, be made to endeavour to get over difficulties for the benefit of the country as a whole. The task which confronted the Government was threefold, namely -

First to discuss questions in relation to the cultivation of tobacco; second to consider what steps were necessary to popularise specialised information among the peasantry in regard to both growing and curing; third to find out what steps were desirable in order to ensure that the produce was marketed in such a way as to secure that a fair share of the proceeds of sale went to the producers and didnot become concentrated in the hands of middlemen or factories who combined among themselves to exploit producers for their own benefit.

If these three requisites were met, he hoped to be able to put forward the suggestions of the Conference to Government and particularly of the Customs and Excise Officials who could assist in solving the problem of revenue which confronted at the present time.

He went on to say that, from results already obtained, there was no doubt that satisfactory tobacco could be grown in this country, but it seemed clear to him that there was a long way to go before arriving with certainty at methods of preparing and curing types of tobacco thoroughly well suited to the local markets. Though experimental work had been done, more work still remained before we could ascertain the best time to plant in different parts of Malaya, the best methods of curing to be employed, and the most profitable type of tobacco to be cultivated.

Experience in Mauritius rather tended to make him believe that the type of tobacco naturally preferred by smokers of many races was the light coloured cigarette tobacco, and he was of opinion that possibly the widest field might lie ultimately in the production of this type.

Another point which struck him in relation to the tobacco industry was the need for an officer with specialised knowledge and training in tobacco cultivation. While he was in Mauritius, an officer had been specially seconded to look after the problem of tobacco. As a start it was decided to train him in methods of cultivation, curing and preparation for sale of tobacco. He was accordingly sent to South Africa and Nyasaland to study conditions there. In six months' time this officer acquired a very satisfactory knowledge of these processes, and when he returned he was able to set things going on lines which avoided a lot of uncertain, preliminary tentative efforts. He pointed out that this method of training existing officers had been successfully followed in this Department in relation to tea cultivation and copra production, and this, taken in conjunction with the experience gained in Mauritius in relation to tobacco convinced him that the best method of tackling the tobacco question in this country was to proceed along similar lines; he, however, invited expressions of opinion on the subject.

To simplify discussion he suggested it would be better to deal firstly with the cultivation side, secondly with the marketing side, and thirdly with the fiscal side of the problem with a view to clarifying the question for further discussion on Friday.

Mr. South said that at the present time there were a considerable number of differnt types of tobacco being grown throughout the country for various purposes. It looked as if the stress of economic conditions had forced a certain number of Malays in the country to give up smoking imported cigarettes and to substitute a very considerably inferior quality of locally grown and prepared tobacco therefor. One would find there were large quantities of this locally prepared cut tobacco for cigarette purposes available throughout the country in general and at district fairs in particular, and also fairly considerable quantities prepared by Chinese for the use of Chinese labourers. That was one class.

The second class was cigar tobacco which could be sub-divided into one or two different types according to weather

it was prepared to meet the taste of Indians or of Chinese.

He thought that it had been proved quite satisfactorily that various types of tobacco could be grown successfully to meet the local requirements of the different communities. The outstanding points requiring elucidation seemed to be to find out the best season during which the crop could be grown, the extent to which manuring might be necessary in different parts of the country, and the best form in which the produce should be sold, i.e. whether to concentrate on encouraging growers to sell merely dry leaf to be cured by the actual manufacturers of cheroots, or to encourage the cultivators themselves to cure.

At the present time the procedure was to sell dry leaves and to leave further fermentation and general preparation of tobacco for use to the buyers.

He also thought that it might be necessary for a good deal of instructional work on the best methods of handling the nurseries, on proper systematic planting, and on methods of curing whatever form of final product was decided as suitable.

Trials had been carried out in one or two places which tended to indicate the possibility that the Department could, by planting at the right season, produce a type of leaf acceptable to cigarette manufacturers in this country, but, up to the present, facilities were not available for curing the leaf and the Department was not sure whether the quality was good enough to meet the requirements of the local firms. However, the work done was promising and was being continued at Serdang and if the results proved satisfactory it might be possible to continue it in other parts of the country. He was inclined to the view that planting would have to be done at definite times of the year in order to secure the wet weather for the growing period and the dry for harvesting.

He understood last year from certain conversations he had had with representatives of the British-American Tobacco Co., that provided leaf suitable for their requirements could be produced, it would be possible for them to take a certain quantity of such leaf in the early stage and to increase the use of it as it became more popular.

In conclusion he agreed with the Chairman that provided it was possible for the tobacco company to make cigarettes containing a very large percentage of locally grown tobacco, the best type for local markets would probably be the yellow cigarette leaf. He also urged that the fact that there was a very considerable market for cheroots should not be overlooked. He supported the view that a specialised officer was necessary, otherwise it would be very difficult to make progress to the extent desired and the department might be expending a large amount of money with results incommensurate with the expenditure involved.

Mr. Milsum pointed out that the growing season lasted for four months, round about Christmas. He also mentioned that Mr. Dority had promised to give necessary assistance in the matter of cultivation, and endorsed the view that the services of a specialised officer were necessary.

The Chairman said that in Pahang there was a strip of land the soil of which was closely similar to the type of soil

known to exist in the tobacco growing areas of Deli. Also the climate of that region was similar to that of Deli and it seemed probable from experiments carried out in that area by the Agricultural Department as far back as 1917 that there were reasonable prospects of being able to find considerable areas of land of this type and under conditions quite suited to the growth of Deli tobacco. As against that, it must be borne in mind that wrapper leaf from Deli was a highly specialised product. The trade was entirely in the hands of the Dutch who were in a position to exercise control over the market, and it was exceedingly difficult to obtain Deli seed. Furthermore, there were conditions in relation to the cultivation of Deli tobacco which rendered it an extremely difficult and technical business.

In Deli district it was possible to grow tobacco on the same lines only once in seven years on the same soil. Attempts were being made to reduce that term but, so far, the utmost success achieved lay in the reduction of the interval to the suggested one of three or four years. In Deli slime disease was very prevalent and this disease definitely exerted a selective action in relation to the particular types grown. The Chairman then summarised the position, concluding that Deli tobacco should to a considerable extent be ruled out of the situation in any policy contemplated in this country for the following reasons:- monopoly of the market by the Dutch, difficulty in obtaining seed, the disease factor, and the replacing of imported by locally grown tobacco.

The Chairman added that fourteen test stations had been established in different parts of the Peninsula and one or two more remained to be opened up. There were large numbers of cultivators growing all kinds of tobacco in different parts of the Peninsula and the Department was not yet in a position to advise which type it was best to grow. Added to that was the inability to advise cultivators as to the best means of curing. Definitely what was wanted was more skilled instruction.

Mr. Doscas said that the cultivation of tobacco so far as his observations were concerned appeared to have developed along quite satisfactory lines. The necessity for manuring was well recognised by Chinese growers who extensively used Bat Guano and also night soil. He had seen in some parts of Perak three consecutive crops of tobacco being raised and also some ratooning being practised, but further information was necessary as to the quantity of manure required and the best manure suitable for tobacco production. Another point requiring elucidation in relation to small Chinese growers was the best rotation crop which could be introduced in connection with the growing of tobacco. In Perak South though very good tobacco was being produced it was susceptible to various diseases and possibly rotation crops would lessen this trouble.

The methods of manufacture were less known and the article produced did not seem satisfactory. The fermentation process took about six weeks. The Malays usually sold the green leaf cheap - four cents per plant - and the Chinese growers too were in much the same plight. The cultivators were definitely in the hands of dealers who were buying-agents for big manufacturing concerns in Kuala Lumpur and Teluk Anson.

With regard to types of tobacco, Mr. Doscas said he quite agreed that the Department ought to try to produce

tobacco which would be acceptable to the local palate. There were some places where local tobacco could be obtained at two cents a tahil. It was also essential that the question of marketing and curing should be bound together because to secure a good market it was necessary to get cured product which meant waiting a long time, and this was just what the Malay or Chinese cultivator could not afford to do.

The Chairman then remarked that the problem of tobacco curing was parallel to that of copra production, inasmuch as both tended to show the necessity for the provision of centres for curing and also for marketing.

Mr. Jolly explained that in Singapore the British American Tobacco Company used four types of tobacco. The curing method was air curing. The type of tobacco grown in Singapore was mostly of the cigar type. The price at present was about fifteen cents a pound, whereas in 1931 the British American Tobacco Company imported tobacco at twenty cents a pound.

Mr. Doscas instanced that Mr. Leighton raised Rangoon tobacco at Kuala Kangsar, the leaf of which after curing was as good as the leaf imported from Burma. He was offered a price of $28/- per picul and the duty payable was $93.33 per picul. The price in Kuala Lumpur was $120/- with duty or $40/- without duty.

The Chairman then pointed out that difficulties existed in the way of producing flue cured tobacco. Firstly there must be sufficient tobacco to fill the barns and secondly, the operation was distinctly a skilled one requiring unremitting care and attention. The process of flue curing would occupy forty to sixty hours during which time somebody must be in charge of the barn controlling temperatures by regulating fires or by regulating air supplies. The process was not, however, beyond the capacity of a fairly intelligent native with but a vernacular education to carry through provided he had patience and initiative. In China, for example, he understood that Chinese were carrying out flue curing on a large scale in home made kilns. In any event if the tobacco industry was to be established successfully among small-holders there would probably have to be centres for curing i.e. flue curing houses which could be erected by groups much in the same way as copra kilns were now being erected in Kuala Selangor.

Mr. South pointed out that in China sun curing was in vogue, but it might not be possible in Malaya. He was of opinion that it would not be difficult to teach people methods of curing. He instanced that Mr. Eu Kee Eng informed him that Burma tobacco cost about $120/- to $125/- a pikul here including duty, though the price in Burma was about $19/- a pikul.

Mr. Craig mentioned that in Kelantan tobacco was grown as an intercrop on dry padi land.

Tengku Yacob explained that in Kedah about 500 acres of tobacco were grown by both Malays and Chinese. The Malays very often planted the small leaf type as a catch crop in rice areas. Curing was very primitive, and their methods was recognised as the Malay method of curing - "makan ulu". The sale price was $80/- a pikul. The Chinese had gone in for

large scale planting (about 20 relong). Their method of curing was also imperfect. They never believed that six months fermentation would result in better prices and as a result Chinese used to sell tobacco about a month after picking. The price ranged from $15/- to $30/- according to quality. The average yield was five pikuls of cured tobacco per relong. Cured leaves were sold to Chinese, Indians and Burmese. There were complaints that prices were too low to make the industry profitable. In Kulim there were eight Chinese shops manufacturing tobacco while in the whole of Kedah there were altogether fifteen or twenty shops dealing with locally grown tobacco.

Malays in Kedah were beginning to like home cured leaves, and even Government officers had gone in for "makan Java" which was said to be not very irritating to the throat.

Mr. Cavendish said that the Rokok industry was passing into the hands of Chinese, and then called upon Raja Musa to give his views on the Rokok industry.

Raja Musa mentioned that the Rokok industry in Lower Perak was dying in so far as the Malays were concerned. In Lower Perak the main trouble was keen competition. He tried to revive the industry some time back, but in vain. In Lower Perak, Malays had begun to give up smoking cigarettes owing to financial stringency. In his circle a good deal of tobacco was being prepared by the Malays themselves, and was being sold at weekly fairs at three or four cents a tahil. Some Malays even bought uncured leaves from Chinese and Malay growers for use as pipe tobacco. He too had smoked such tobacco and could certify it as not too bad.

At present Sungei Rambai was the home of the Rokok industry and the market rate in Teluk Anson was $3.20 a bundle, while in Penang the rate was $5.50 a bundle. A considerable amount of rokok was being sold in Kelantan and Trengganu. The market in these two States was monopolised by Chinese. The Malay producers in Sungei Rambai sold their produce to Chinese who seldom paid in cash but in kind, as the former could not afford to wait.

Mr. Gammans explained that the question whether the country should ultimately export tobacco would depend very largely on the quality turned out. However, it was necessary not to lose sight of the fact that there would be a definite possibility of Empire grown tobacco receiving preferential rights and so it would be only reasonable to look forward to a definite export trade in tobacco.

With regard to technical difficulties, that was a matter more for the Agricultural Department. Consideration should also be given to the revenue side of the problem, because, as it now stood, there was every possibility of a rapid increase in the amount of tobacco to be grown so long as the home producer received a tremendous bounty in comparison with imported tobacco. All the Government would consider was the fact that it was losing revenue and, therefore, it devolved upon the authorities to invent some form of excise duty to take the place of the Customs duty. Excise duty should be lower than Customs duty and could be raised in one of three ways, either by licensing the curers of tobacco, or by imposing an additional tax on the producer of tobacco over and above

land tax, before he could plant tobacco, or by a Government monopoly system, by which tobacco growing would definitely be regarded as a Government monopoly, that is to say, all tobacco grown in this country would have to pass through either Government curing sheds or shed licensed by Government - somewhat on the analogy of the match industry in France. Personally he was not inclined to recommend this latter course, though he made the suggestion, because by that method the grower of tobacco could be protected from the middleman.

This question of protection of growers required very careful consideration, but it was difficult to say at the moment whether co-operative marketing would suffice for the purpose.

The Chairman remarked that his experience led him to the conclusion that the imposition of a tax on the tobacco producer over and above the land tax would result in the stamping out of the tobacco industry.

He then said that it definitely appeared that there was very great scope for the extension of tobacco growing in this country for the replacement in the first instance of the very large imports taking place. The question of export trade was very much for the future. For the extension of tobacco growing it was necessary that the Agricultural Department should continue their experimental work and it was very desirable, if it could possibly be managed, that Government should appoint, or take steps to attach to the Department of Agriculture, an officer with specialised knowledge in tobacco growing and curing who would be available to train in the first instance the various officers in the various States, and in the second instance the small grower himself. As far as the small grower was concerned, Government should aim at organising small centres for the curing of tobacco much on the lines of the small centres being organised for copra preparation and curing, and that in so far as finance and marketing problems were concerned, it would appear that if curing centres were established, they would definitely form starting points for efforts to improve marketing and finance.

As regards the fiscal side, he pointed out that it was understood it was essential that Government revenue should be safeguarded.

Turning to the arguments put forward by Mr. Leyh, the Chairman pointed out that it was agreed that the position was very complicated owing to the method of administration which existed in Malaya at the present time and the position would be complicated still more by the fact that duty on tobacco in the Straits Settlements being brought to the Federated Malay States would have to be paid or tobacco grown in the Federated Malay States could not be exported to the Straits Settlements. Therefore, he suggested that the question should be discussed further on Friday but, being in doubt as to the possibility of any concrete decision being arrived at, he desired that Government should be urged to appoint a Committee representing various interests, customs, excise, etc., to discuss the question of duties and to endeavour to devise some sort of formula which would give adequate protection to the Government interest involved, and which at the same time would not press so heavily on the grower as to deprive him of the protection necessary.

In this connection he explained how a similar, but less difficult problem was solved in Mauritius by a Committee consisting of himself, the Treasurer, and the Collector of Customs.

Mr. Gammans urged that in view of the fact that the Straits Settlements and the Federated Malay States and some of the Unfederated Malay States were equally dependent upon tobacco duty more or less to the same percentage of their revenue, an effort should be made to impose the same duty throughout for the various units. The question of tobacco was rather difficult, but since the Straits Settlements had equal interest with the Federated Malay States in obtaining some of its revenue from tobacco, he felt it should not be impossible to obtain uniform rates so far as Malaya was concerned.

At the request of the Chairman, Mr. Gammans put his views in the form of a draft resolution as follows:-

> "That, if it is proposed to levy any excise duty on locally produced tobacco, every endeavour should be made to obtain the same duty for all units in Malaya and that no obstacle should be placed in the way of free trade in tobacco within Malaya".

FRUIT AND VEGETABLES.

The Chairman said that discussion on fruit opened up a particular side line. He first drew the attention of the Conference to the figures contained in the statistical survey which showed that the net imports of fresh fruits into Malaya amounted to 1,537,000 tons, one half of which came from China and the rest from the United States of America, Netherlands India and Australia. He further directed the attention of the Conference to the fact that in relation to one particular area of Malaya very detailed information had been obtained by an officer of the Department of Agriculture - Mr. Olds - who applied the survey method to Malacca, a typical example of a settled area in Malaya, with a view to investigating the fruit industry. The memorandum was interesting also, because it provided an example of the application of the survey method of enquiry and of the objects sought in this particular way of going to work. The attention of the Conference was also directed to the various suggestions made for the improvement of the fruit industry as embodied on pages 12, 13 and 14 of the memorandum.

The Chairman continued that, as far as the agricultural side of it went, he was fully in accord with the views expressed in the memorandum, and that the Department of Agriculture was already making efforts at all agricultural stations to built up supplies of planting material of fruit trees of good strain with the idea that the Department should supply people with reliable planting material at prices considerably less than at present.

The Chairman then instanced that steps had recently been taken to reduce prices of material sold by the Experimental Station at Serdang. The idea of the Agricultural Department was that Serdang should serve as a centre for distribution and also as a feeder to branch stations in order to help them replenish their stock.

With regard to the desirability of introducing fruit trees into school gardens the Chairman remarked that the subject could

be discussed at a later stage in connection with the question of home gardens in the kampongs. Personally he felt that fruit growing in school gardens might be included and that definite instruction might be given by Agricultural Field Officers and Malay Agricultural Assistants.

The Chairman then asked that the above two points be discussed first.

Mr. Gammans enquired if the Agricultural Department had any information regarding the types of fruit represented by the statistics referred to, and also to what extent those statistics included fruits which could be grown in Malaya. He thought it necessary to differentiate between those fruits which could and those which could not be grown in the country, because it might be found that in the case of fruits which could be grown in this country, Malaya was already self-supporting. If such was the case there was not much point in suggesting an increase in the area under fruit trees.

The Chairman replied that in 1929 the export of fruit from Java was worth somewhere about a million dollars and those fruits could be grown here.

Mr. Grist mentioned, on the other hand, that a good deal of fruit imported into this country could not be grown here. He had included in the statistics a number of dried fruits which undoubtedly could not be produced in this country. The main point was that if people found Malayan fruits attractive, the amount of fruit coming into this country would decrease. He mentioned that it was not possible to put up figures of fruit which could and which could not be grown in this country.

Mr. Milsum said that oranges and liches which came from China could not be grown here.

Mr. Jolly mentioned that quite a lot of fruit came to Singapore from China and other places as deck cargo, and the figures for this were not available for inclusion in the import statistics of the Colony. The figures in the memorandum were necessarily incomplete, therefore, as they were taken from the Customs returns.

Mr. Gammans mentioned that the Conference would notbe justified in recommending that the area under fruit in this country should be increased to any great extent unless it had some idea as to what extent Malaya was dependent on imported fruits which could be grown locally.

Mr. Cavendish agreed with this view and said he would like to see survey work as carried out by Mr. Olds extended to Penang.

The Chairman said that the value of fruits exported from Batavia to Singapore in the previous year was over one million dollars. This amount necessarily excluded the value of those fruits which came as deck cargo.

Mr. South explained that the fruit situation in this country was not the same in different parts. He said that Mr. Mason in his monthly report for June had pointed out that mangosteens in Province Wellesley and Penang had glutted the market at three cents a bunch against the standard price of 10 cents a bunch. There was definitely over production in that

part of the country. In the eastern part of Pahang river there was a considerable decrease in the production of fruit since the flood. In Johore there were areas where fruit was grown in plenty and exported to Singapore.

With regard to attempts to sell Krian mangoes in Singapore, Enche Tahir mentioned that the work was left in the hands of Enche Abdul Majid, Malay Co-operative Officer, Bagan Serai, who sent samples to all the Malay officers in the country. But although fruit produced in Bagan Serai found a market locally, no suitable market could be found in Singapore where people preferred mangoes from Siam and Java.

Mr. Mason said that in Penang Chinese generally fixed contracts with owners of orchards and paid cash down. They packed the fruit in baskets on the plantation itself for shipment to Singapore, and large profits were made by the dealers.

Raja Musa said that in Lower Perak fruits were principally grown for home consumption and not for trade. In spite of that, last season there was a large surplus of mangosteens and limes. The former sold at 15 to 30 cents a thousand and the latter at about 60 cents a thousand. He thought that if fruit growing were to be encouraged among the Malays, the question of marketing should be tackled first. Another factor to be borne in mind was the durability of the fruits and their power to stand the journey. The chiku was a good example; if picked when green it was not sweet, if picked when just ripe it was excellent but would not keep beyond three days.

With regard to the question of school gardens, there was no school in Lower Perak which had a sufficient area for experiments in fruit growing.

Referring to Mr. Gammans' suggestions, Mr. Olds said there were no detailed statistics and it was for that reason he had included in the recommendations the need for further examination of the possibilities of extension of markets. But he was convinced that the main reasons why the fruit industry was in such a bad condition were the indebtedness of Malays, the small size of the unit of production, and the interference of middlemen.

As against this Mr. Dukes mentioned that he had made considerable efforts to get Malays to combine for the selling of durian. He found that people really did have intelligent appreciation of the possibilities of getting slightly better prices but they pointed out that difficulties were considerable especially in regard to packing. Their main objection to any improvement of their crude system was that the fruit deteriorated rapidly. They preferred their present system whereby the middleman took the risks of damage in transport and loss in marketing, while they could mortgage out their crop on some guarantee - otherwise when the markets were glutted they could not get a good price. However, he was of opinion that there was need for further extension, if possible, by demonstrations, and for discovering better methods of packing and preservation.

Mr. South explained that in connection with the question of seasons Field Officers had made records of the various months in the year at which any particular fruit was flowering or fruiting in different parts of the country. Records,

unfortunately, were not complete, but some preliminary conclusions had been drawn. Seasons were not exactly the same in different parts of the country. The durian crop in the north did not come exactly at the same time as in the south. Possibly if these records were continued they might yield information of which it would be possible to take advantage when considering the better distribution of fruit to meet local demands.

He further explained that the demand side should not be lost sight of. There was a source of demand in shipping passing through big ports, especially Singapore. Every big liner must require pineapples, bananas and other fruits. How that demand was met he did not know, but though it was possible that the demand was not met so fully as it ought to be by supplies of local fruits.

With regard to the existence of rings of dealers he instanced that a few years ago a planter in the Bernam river area endeavoured to make some money by collecting durians and taking them up to Penang for sale. They could not be sold there because they did not go through the proper channel and the result was that the whole lot was left to rot.

Haji Eusoff mentioned that attempts were made in Ipoh to organise the sale of mangoes and other fruits, but they failed owing to the existence of powerful rings. He emphasised the fact that the question of marketing ought to be solved first.

The Chairman instanced that in the West Indies rings were broken by running stalls in the market for vegetables and citrus fruits and enquired whether Agricultural and Co-operative officers could do likewise.

Mr. Fairweather said that he felt certain that if something on the lines of marketing could be commenced in Singapore, success would soon be visible. During the last fruit season, Chinese from Singapore bought durians in Johore at three cents each and sold them in Singapore at 30 cents a kati. If there were good collecting centres for Malays in Johore sufficient fruits would be available to run the scheme on a large scale. Malays desired to get ready money and, therefore, they sold at a cheap rate.

Enche Tahir mentioned that three lorry loads of durians were taken from Taiping to Ipoh for sale, and the price offered was less than could be obtained in Taiping. Besides the authorities in Taiping did not allow a lorry to load more than 500 durians.

Enche Baba mentioned that his attempts in Malacca two years back to sell durians on a co-operative basis proved a failure. The lorries had to return to the kampongs with the whole load unsold because they were up against a ring.

The Chairman remarked that there was definitely a case for the inauguration of a system, perhaps experimentally in the first instance, whereby supplies and distribution could be organised by rendering financial assistance to growers to keep them going. Besides, the present time was most opportune to undertake such inauguration since the margin of profit was so small that Chinese would not be able to force prices down very much at any rate not for a long period. He suggested that two

or three depots might be opened in Ipoh or Kuala Lumpur to which the flow of peasant fruit could be directed and whereby the raiat could be sure of his fruit being sold at a fair price.

Mr. Cavendish urged that as a matter of principle there should not be rings dealing with essential foodstuffs and that Government should take or assist in measures for the sale of essential commodities like fruit. He suggested that a Fruit Commission shop could be run jointly by the Co-operative and Agricultural Departments and asked Mr. Gammans to give some information regarding the Co-operative shops organised by the Co-operative Department in India.

Mr. Gammans thought that it was agreed that Government should do something to break the rings both on behalf of the producer and of the consumer. It seemed to him that there were two ways in which one could try to tackle the question, firstly by starting shops as suggested by Mr. Cavendish, and secondly by the co-operative sale of a definite article. There were difficulties inherent in the idea itself and difficulties in connection with the people themselves as well. The four requisites for co-operation were the need, the realisation of the need, the determination to remedy, and the knowledge of how to remedy. Applying those criteria to the problem of marketing fruit, Government had yet to see on the part of the raiat the two factors determination and knowledge. If the co-operative methods were to be relied on, a tremendous amount of propaganda would be required, but if such a method could once be organised, there would be a permanent solution. The only alternative would appear to be what was virtually a form of State trading. Government would in the first instance start a trading depot and a Government officer would be appointed to sell fruit.

The Commission shops in India had not been particularly successful. There were individual cases where such shops had undoubtedly been of great benefit, but on the whole commission shops in India looked after only an infinitesimal percentage of the peasant's produce.

He then went on to relate how the moribund Port Dickson basket industry had been revived through his efforts with the assistance of a loan of $500 from Government. He bought the baskets from weavers and found a market. The amount Government received back was $2,000/-. He was of opinion that such a system should be envisaged for the improved sale of fruit, eggs, and other produce.

The Chairman agreed with Mr. Gammans' views, namely, that there were only two alternatives and stressed that since the latter alternative had not been successful, it seemed to him that State trading by means of Government supervised produce depots would probably be the quickest way to improve the present situation. Such a method would not necessarily be permanent and later on the producers could take over charge.

Mr. Doscas pointed out that definite mention had been made of the existence of rings, and since this matter was one which would give rise to a certain amount of discussion he desired that it should definitely be placed on record that the progress of the fruit industry was greatly retared by the operation of these rings, to break which concerted action should

be taken by Government. This was agreed to by the Chairman.

The Chairman then invited the attention of the Conference to samples of tobacco placed in the hall for inspection and the Conference adjourned for lunch at 1 p.m.

2.p.m.

POULTRY.

The Chairman said that the position in relation to poultry had been summarised in two memoranda, copies of which had already been placed in the hands of all members, one giving figures for eggs and poultry imported last year and the other giving a review of the general position in relation to the poultry industry in Malaya, both of which had been prepared by Mr. Fairweather whose summary of the position, the Chairman went on to say, was very comprehensive and have a very fair review of the total value of the import trade and also of the various breeds of fowls in Malaya. In addition the memoranda also contained some suggestions for the improvement of poultry husbandry in Malaya. The Chairman then asked Mr. Fairweather to open the discussion on the subject.

Mr. Fairweather mentioned that it could be stated definitely that of all the factors which hampered the improvement of poultry, the disease factor was the most outstanding. Every now and again outbreaks of disease caused losses to kampong people which often ranged from 50 to 75% of their stock of poultry. The question of control and prevention of disease was no easy matter. It concerned the Veterinary Department and he hoped that Mr. Stanhope would give the Conference some ideas on the subject. But the chief difficulty on the part of the Veterinary Department was lack of staff and lack of specialised knowledge. The subject of poultry disease was a specialised study, and the Department had no specialist in this branch; hence it was impossible for them to help to any great extent, though they were willing to do what they could. Efforts on the part of Government had been carried out at Kuala Kangsar and were being made at Bukit Fraser but these were of no great extent and were not likely to go very far unless periodical importations of different breeds were made two or three times a year.

With regard to the question of the breed suitable for Malaya his experience was that the Leghorn was a suitable breed for egg-laying, but for meat purposes the Rhode Island Red was to be preferred. Several diseases such as cholera and typhoid were to be found among kampong fowls.

The Chairman agreed that the first problem to be tackled was the prevention of disease, that is to say expert assistance and advice should be given to the Malay on the subject of the maintenance of fowls. Further there was need for the establishment of many centres throughout Malaya where farm people could get birds of improved strain, and not merely eggs. Personally he preferred the establishment of a central poultry breeding station and distribution therefrom.

Mr. Stanhope explained that chiefly owing to the shortage of staff, the Veterinary Department had not been able to do very much in the matter of poultry diseases. Attention was being concentrated more on animal diseases, particularly among

cattle. However, he hoped to take up the question of poultry disease as early as possible. He thought it was essential to disseminate knowledge among kampong Malays, possibly by a series of lectures. Further he thought that the Agricultural Department might draw up a small pamphlet chiefly on the hygienic and sanitary keeping of poultry and their care and maintenance on right lines.

Mr. Barnes said that until the Veterinary Department had the apparatus and staff to prepare vaccines, the Department of Agriculture could not do much. At the moment prevention was the only solution and feeding, housing, and ventilation all required improving.

Mr. Doscas felt that the first step was to try and undertake some general instructional work on the housing and feeding of birds. He further pointed out that the incidence of disease in different parts of Malaya was by no means uniform and that in Perak the outbreak was not very serious.

Mr. Leighton mentioned that in January 1931 chickens in Kuala Kangsar were dying at the rate of five or six a day. The first thing he did was to isolate those infected with disease and put them in new runs. Since then there had been no disease at all.

The Chairman said that his impression was that progress could only be secured by getting down to a scheme somewhat on the lines he had mentioned before. Personally he thought that an essential step would lie in the provision of a trained officer with expert knowledge in relation to poultry, who would be available for work in the various States and Settlements in collaboration with Field Officers. Further there should be some organisation for the importation of fowls, and there should be established a central poultry breeding station which might suitably be located at Serdang. There should also be smaller subsidiary stations to be run in conjunction with the various small agricultural stations in the various States and Settlements. Such a course would definitely require additional expense, but it might pave the way for further collaboration between the Co-operative Department and the Agricultural Department in the organisation of the disposal of poultry. In this connection he said that he understood that some interesting efforts had lately been made by the Co-operative Department in connection with the organisation of the sale of eggs from Krian.

Mr. Cavendish said that he was told by one of the Veterinary officers that there were no appliances for diagnosing poultry disease, and he urged that there should be some co-ordination of the laboratories of the Medical, Veterinary and Agricultural Departments for investigation of diseases. He instanced that he himself had had some fowls in his compound, and out of twelve eggs eleven were hatched. They were fine birds, but they died of beri-beri.

With regard to marketing eggs he mentioned that Mr. Gammans had been doing his best to stimulate the marketing and sale of eggs in Kuala Lumpur. Further, Enche Tahir had been attempting the co-operative sale of eggs from Krian in Penang. He then called upon Enche Tahir to describe his experiments.

In doing so, Enche Tahir mentioned that the sale of eggs on co-operative lines was an entirely new idea in this country. First of all he made enquiries into the supply of eggs in the district through the medium of the Co-operative Societies and also into the chain of marketing that existed. He was given to understand that the members of five societies (about 200) in North Krian were in a position to produce not less than 2,000 eggs a day. A general survey was made and it was found that almost every family kept poultry because they found that poultry keeping was a subsidiary source of income. On a rough estimate the total number of eggs which could be produced a day came to 5,000.

He then communicated with the big hotels in Kuala Lumpur and Penang regarding the supply of eggs, but only received one favourable reply; this was for a trial supply of 200 eggs a day to an hotel in Penang. The hotel authorities found the eggs supplied to be of superior quality and soon after, he got a standing order for 1,500 eggs a week.

The present supply was through one Co-operative Society which had now become a society for the co-operative marketing of produce. Only ten members were participating and the eggs supplied were produced in their own homes. The eggs were normally graded into three qualities and only the first and second grades were accepted. The grading was done both by weight and by size. Sizing was done by passing an egg through a hole made in a sheet of cardboard. The First quality egg weighed about 2 oz., and the second quality about 1½ oz. The eggs were numbered by stamping with the registered numbers of owners; they were also chopped. Candling was done to see that old eggs were not brought in. Payments were made weekly and the members were quite satisfied. The Honorary Secretary did the grading, packing and carrying of eggs to the railway station. He was being paid 30 cents for three hours work daily. Although they were up against a ring, the net profit amounted to $2.17 when the sale price was $2.50 per hundred. He went on to say that he was looking for other markets. He had written to the Sultan Idris Training College and found that they needed 1,200 duck eggs a week. He had quoted a price of $1.90 for 100 duck eggs as against $2.00 for 100 which was the price in the shops in Tanjong Malim. The reply he received from the Principal was that the College was closing for three weeks but that he would inform him soon.

The Chairman remarked that he was interested to note the progress made.

Mr. Gammans said that the three main points to be considered in connection with the question of poultry were the prevention of disease among existing poultry, the improvement of stock, and lastly, marketing.

With regard to the first question his experience showed that there was considerable variation in the incidence of the disease in different parts of the country. At present Selangor was more badly hit than other places, and in almost every kampong poultry were dying in large numbers.

The question of prevention and cure had already been discussed. So far as cure was concerned, a suggestion was put forward by Mr. Stanhope that pamphlets might be prepared and in that case it was necessary to decide what the raiat should be told. He had been giving certain advice to various kampong

people through existing rural Co-operative Societies on the following lines. He had urged that fowls should be kept in an enclosure, and preferably in a movable run, that they should be properly fed, and that sick fowls should be segregated. If they could make an enclosure for their fowls which could be moved, they would incidentally be manuring large areas of their ground which could be used for planting vegetables later on. Whether it was the right advice or not he did not know, but he would like this point to be donsidered, namely that if the Malays were to be advised the recommendations must be definite.

All over the country there were rural credit societies, and many of the members were prepared to experiment. The main point to be borne in mind was that some definite advice was necessary though modifications would be required later in the light of experience.

Regarding the improvement of stock he thought that until the prevention of existing fowls dying on account of disease could be secured, this might be considered as a minor problem. He enquired whether the Department of Agriculture could recommend a cross bred fowl which would be a bigger bird, could stand kampong life and resist disease better, and would be a better layer and able to transmit its qualities to its offspring.

While he was on tour in India he visited Lucknow where the station was subsidised by Government and where experiments had been carried out in the improvement of breeding stock. The whole concern was run by a lady. Improvement of stock straight away had not been aimed at, but after some experiments cross bred fowls had been evolved of the required type. They had been distributed this cross both by settings of eggs and by hens and cockerels through Co-operative Societies, and even in the short time that it had been run, the breeding had improved considerably.

In respect of marketing, eggs were an easier problem than other agricultural produce and egg marketing was highly organised in Denmark. When he was at home last, he visited some of the egg marketing societies, and had found that they were very highly centralised and organised.

With regard to local efforts, he went on to say, that last year the Co-operative Societies Department endeavoured to start an egg marketing society in Kuala Lumpur. At that time eggs in the market were selling at the rate of $3\frac{1}{2}$ cents, and the producer was getting roughly two cents. The producer was selling to middlemen and the retailer in the market was possibly getting four to six cents. The Department had tried to start a system by which kampong people could dispose of eggs direct both to large institutions such as hospitals and hotels, and also to individuals. As a result, it was expected that the producer would get a better price and the consumber could buy at a cheaper rate. The whole scheme had had to be abandoned, however, for want of a sufficient supply of eggs.

In conclusion he observed that the Co-operative Societies Department was quite prepared to organise co-operative sale provided there were sufficient eggs to sell and suggested the desirability of preparing a film on Poultry Keeping.

Dealing with the prophylactic side of the problem, the Chairman pointed out that in relation to the preparation of vaccine elaborate scientific experiments were necessary. Though there was the Medical Research Institute its officers had their hands more than full. He instanced that a similar question arose some time back with regard to the possibility of dicovering a rat virus for use on oil palm estates. The aid of the Medical Research Institute had been invited, but on enquiry it was found that it would take at least two years before they could do anything definite in the matter and that the minimum cost of the work would be $10,000/-. Hence it could be presumed that what applied to one particular case would apply to many other cases too.

The Chairman further remarked that the idea of enclosing poultry would be foreign to the Malay. If the disease question could be eliminated by some other means, the practice of letting the fowls run where they would instead of enclosing them in runs would be by far the cheapest way of raising poultry and a perfectly satisfactory way. His own view of the matter was that it would be preferable to get some officer with fair knowledge of poultry raising to make observations and to work in co-operation with the Co-operative Societies Department. Regarding cross bred fowls, he said that the Department of Agriculture had one or two varieties which were promising.

He then explained how a number of first crosses could be evolved and how after a considerable time a special breed could finally be evolved from first crosses.

With regard to marketing, the Chairman agreedthat before any organisation could be started it should definitely be ascertained whether there would be sufficient supplies of eggs.

Mr. Allen said that in Klang District outbreaks of disease among poultry were normal twice a year and he thought a good deal could be done by finding out the reasons for the incidence of the disease. He was told that in one of the islands off Port Swettenham (Pulau Lumut) there was very little disease and, therefore, he thought that that place would possibly serve as one of the centres where marketing could be concentrated. However, he said he felt great diffidence in urging the Malays in the Klang District to take up poultry farming in earnest unless he was sure that the Malay was really to be benefitted. He felt it would be a great mistake to urge the Malay to do something and then through failure to make him feel discouraged. Therefore, he urged that great care should be taken, and sound advice as the result of experiment should be available, before Government went ahead and urged the Malays to take up poultry-keeping on a large scale.

Mr. South was inclined to share in the doubts of Mr. Allen. He said there was a possibility of the conveyance of certain diseases among poultry by birds such as the sparrow. Hence, however, much attention might be given to improving the conditions of fowls in kampongs, it was quite possible that anticipated results might not be obtained and the Malay would be discouraged. Therefore he urged that full consideration be given to that aspect of the case.

Mr. Fairweather said that it was true that diseases were carried by birds, but by cutting down fowl infections, it would be possible to reduce the number of bird infections.

Haji Mohamed Eusoff pointed out that poultry disease was often due to the use of crude oil in places where concentrated anti-malarial work was going on. In such places there was a free run of poultry and therefore he thought that disease would only increase.

With this view Mr. Barnes agreed.

The Chairman then said that it seemed to him that the magnitude of the problem did warrant the provision of an officer to give whole time attention to the question of poultry. He added that he expected to summarise the main conclusions arrived at during the course of discussionsin the form of a resolution to be presented to members the following day.

COFFEE.

In connection with this subject, the Chairman drew the attention of the Conference to a memorandum and summary of imports and exports, copies of which had been supplied to the members. The Chairman added that the memorandum was prepared from answers supplied to a questionnaire sent out to various Field Officers.

Coffee grew on the whole very well in Malaya and there did not seem to be any reason why in due course Malaya should not meet the whole of its demand by means of locally grown coffee and cut out the necessity for imports altogether. The Agricultural Field Officers in their summaries of the possibilities in this direction considered that the extension of coffee cultivation was desirable. Therefore attention would have to be concentrated on the supply of planting material, provision of suitable land, and above all, the organisation of marketing arrangements.

The Chairman explained that one or two efforts had lately been made to establish a demand for Malayan coffee and it seemed to him that in due course scope may exist for distribution on a Malayan basis. One or two persons were preparing and selling coffee - notably Mr. Aucutts. It seemed that there should be distinct possibilities in the way of organising supply of prepared coffee more or less on those lines.

Mr. Milsum remarked that the question of suitable manures, especially organic matters, required consideration. He instanced that he visited some Chinese estates and observed that the yields were poor and conditions generally were not satisfactory.

Mr. South mentioned that, at the moment, the price of coffee had risen slightly and was now $20/- a pikul. Even this price did not pay properly, though $25/- might. The low price generally was largely due to the competition of coffee from Java and Sumatra which came to Singapore in large quantities at very low prices. He thought that the better quality from Java cost only $15/- to $16/- and urged that if anything were to be done to improve supplies, the possibilities of improving price should also be considered.

The Chairman remarked that Mr. South's observation rather raised the question of protection. An import duty had been put on coffee, but it did not seem to have materially

affected the price. However he agreed that if marketing for this produce was to be improved, some degree of protection by means of customs duties was worthy of consideration. Under present conditions $25/- a pikul would give a reasonable margin of profit. He went on to say that it might serve a useful purpose if the Malay Agricultural Assistants working in the Coastal Districts of Selangor could have their attention directed to the question of assisting the small holders.

Mr. Simpson pointed out that the preparation of coffee was essentially in the hands of Chinese. The Malays generally plucked the leaves. The price paid by the Chinese to the Malays worked out at 9 cents a kati, and the Chinese sold at 15 cents a kati. He was concentrating his attention in Kuala Langat, but the main trouble was the existence of a Chinese ring.

Mr. Allen mentioned that in Klang Chinese were dissatisfied with coffe bushes planted on the hill slopes of Kapar because they were not bearing well. It was then pointed out that low yields were mainly due to soil erosion and that cover crops would assist in stopping erosion.

The Chairman in winding up the discussion on the subject pointed out that the coffee industry definitely possessed considerable openings for expansion and that it was necessary to see that supplies of planting material at nominal prices were available for small-holders at various experimental stations. Improved methods of cultivation and manufacture were also desirable, and scope definitely existed for the improvement of native prepared coffee by means of definite instruction. Scope also existed for the improvement of marketing conditions by means of some form of combination amongst small-holder producers which would ultimately result in the production of better quality and in the breaking down of Chinese rings.

ARECANUTS.

After drawing the attention of the Conference to a memorandum on the above subject, copies of which had already been placed in the hands of members, the Chairman mentioned that in the year before last an effort had been made in Pahang to organise the despatch of arecanuts to Singapore and he hoped to get detailed information regarding this experiment from the Agricultural Field Officer. It seemed to him that there was scope for some form of organisation to assist producers in the way of improving both the standard of produce and marketing conditions. He then called upon Mr. Heath to give further information on the subject.

Mr. Heath said that with regard to the effort made in Budu Valley, the man who actually took the initiative in the matter was a Forest Ranger by whom he was put in touch with the trade in Singapore. The first shipment to Singapore aggregated 10 or 12 pikuls of sundried nuts and the price realised was somewhere about $30/- a pikul. The Singapore syndicate criticised the quality of the nuts and made suggestions for improvement.

Mr. Grist pointed out that freight from Pahang to Singapore was very high and that the real difficulty would seem to be that the firm in question could not bother about a

mere 12 pikuls from Pahang. The scheme was merely an attempt to cut out the middleman who would normally do all the collecting. Mr. Heath thought, however, that a much larger output was possible and he suggested that an effort should be made to obtain information with regard to the area of arecanuts and to commence trading operations again. Incidentally the District Officer, Lipis, had informed him that more land had been given out for arecanut planting.

Mr. Cavendish then called upon Enche Tahir to give details of an attempt made some time back with regard to co-operative marketing of arecanuts.

Enche Tahir mentioned that it was in 1930 that attempts were first directed to the marketing of arecanuts. The chief difficulty was that nearly all the arecanut holdings had been leased out to local Chinese dealers. Under the circumstances he could only advise the holders not to leave out their lands the following year. During the 1931 season three consignments had been sent to Penang. The first consignment was not very successful, but the second and third consignments received much better prices. The last consignment weighed 30 pikuls, and the price obtained was $5.60 a pikul, i.e. 20 cents per pikul more than in Batu Kurau. The cost of transport came to $16/-. There was a big Chinese buyer, and since sales had to be effected through him, a commission of 5% was agreed upon, and after all the Indian dealers were assembled in his shop the consignment was sold to the highest bidder who offered $5.62.

Tengku Yacob mentioned that the arecanut trade in Kedah was entirely in the hands of Chinese - kampong people received a lower price. He was of opinion that scope did exist in Kedah for the improvement of the industry.

Mr. Fairweather said that about 9,500 acres of land in Batu Pahat and Kukub districts had been planted with arecanuts of mixed varieties. A lot of the holdings were mortgaged to Chinese dealers for long periods. Lately the price had been so low that the unprepared nut only had been shipped to Singapore. There was great scope for marketing and curing of arecanuts and he proposed to see the Assistant Adviser, Kukub, to ascertain if something could be done.

Mr. Craig mentioned that in 1931 there was a considerable export of fresh nuts from Kelantan. The freight from Kota Bahru to Singapore was rather high being $1/- per pikul. A considerable quantity of these nuts were sent from Singapore to India. Therefore he saw no reason why nuts could not be shipped direct to India instead of passing through two channels - one at Kelantan and the other at Singapore.

In Kelantan there were only three buyers, one in Pasir Puteh and two in Kota Bharu.

The Chairman then remarked that in centres like Pahang, Kelantan, and parts of Kedah and Selangor, there might be the possibility of introducing not only co-operative marketing but also grading. There appeared to be fairly well established gradesin the markets and should it be feasible to introduce some system of grading, such a system would result in growers getting better prices and in the better recognition by dealers of particular grades coming from particular districts. Thus the industry would be extended along sound lines.

Mr. Grist reminded the Conference of the Committee appointed at the last Agricultural Conference consisting of officers of the Agricultural Department, the Co-operative Department, and the Rubber Research Institute to consider marketing problems. They had done a considerable amount of work and investigation had been carried out by them on rubber and copra. He suggested that the Committee continue its activities and tackle the problem of arecanuts also.

Enche Tahir mentioned that in Perak arecanut was not the main product. The palm was planted along boundary lines of kampong holdings. He suggested that organisations for marketing should be limited to mukim.

Mr. Mason mentioned that some days back he went to see one of the Mohamedan Indian buyers. He had no definite grades to show, but produced two or three katis of split arecanuts and sorted them out into three grades basing his selection on the maturity of the nuts. Most of the local grown nuts were rather immature.

Mr. South mentioned that he understood that in South India local taste was very critical indeed, and the methods of preparation were rather different. The most important point was that nuts were plucked only when fully ripe and growers had to go round daily picking ripe nuts in order to meet requirements; hence local products did not serve South Indian markets, and were shipped to North India instead. Even the North Indian market insisted on nuts plucked when ripe. The points which required attention were stage of maturity, drying and general cleanliness.

The Chairman then remarked that improved methods of preparation, grading and marketing should be introduced, whereby enhanced prices might be obtained by kampong people for their products in the case of this crop as well. He hoped to summarise these findings in the form of a resolution for consideration on the following day.

GROUNDNUTS.

With regard to this crop the Chairman emphasised that the quality of the seed was most important and asked Mr.Milsum to summarise his observations in relation to experiments at Serdang.

Mr. Milsum mentioned that a large number of varieties had been introduced in the tests and generally speaking only the Chinese variety could be considered a success owing to the demand for that variety for use for consumption as food. Recently there had been trouble due to rats and it had not been possible to raise a seasonal crop at all. It was not that the soil at Serdang was unsuited to groundnuts. At the present time efforts were being made to obtain groundnuts from Burma with larger oil content. Groundnuts also formed a valuable rotation crop with tobacco.

The Chairman explained that the Department of Agriculture would not be able to go very much further until it had definite information as to the suitability of the crop in different places.

SPICES AND PEPPER.

After directing the attention of the Conference to a memorandum on the subject copies of which had already been supplied to members, the Chairman mentioned that in Penang cloves were subject to attacks by beetles. There was no such trouble in Selangor. At Serdang cloves looked extraordinary well.

With regard to the question of pepper the Chairman added that there appeared to be considerable possibilities in relation to growing pepper for local consumption and export. There was an increasing tendency to plant pepper amongst small-holders in certain places - particularly in Singapore of late. Also although the production of most spices required time, in the case of pepper it was different.

The establishment of pepper gardens in many of the agricultural stations was being contemplated, and it was hoped to have in due course planting material available, and then to advocate a moderate extension of this crop among small-holders.

The Chairman then asked Mr. Milsum to amplify his remarks on the subject.

Mr. Milsum said that this year pepper was exhibited on a small scale at the recent Malayan Agri-Horticultural Association Exhibition. The main difficulty was in relation to supports. In the past posts were used for the purpose and the cost was 40 to 50 cents. Living supports were being tried, but so far they had not been successful. Rubber trees were unsuitable for supports - dead or alive they were too soft or too shady. The yields were up to the standard, but the question of manuring remained to be solved.

Mr. Jolly mentioned that in Singapore there was only one pepper plantation, of 10 acres, and that was owned by a Chinese. They used virgin jungle trees as post. The youngest plantation was $2\frac{1}{2}$ to 3 years old. Burnt earth was used as manure. When he left Singapore a portion of the plantation was in bearing. The cultivators were satisfied with the result.

Mr. Craig said that in Kelantan the planting of pepper was entirely wiped out due to root disease. He mentioned that the possibility of Malays growing pepper in Kelantan was very limited; the cultivation would have to be opened up extensively, starting on virgin land. He did not think that Malays would take up pepper cultivation properly.

Mr. Cavendish instanced that in 1835 Glugor Estate, Balek Pulau, was a spice producing estate for nutmegs, mace, clove etc. The income of that particular estate amounted to about £35,000 a year.

The Chairman then explained that there appeared to be scope for extension, but the main need at the present time was for further experimental work and also for the encouragement of planters by means of distribution of planting material and dissemination of information. He also mentioned that the finding would be summarised by him in the form of a resolution to be presented before the Conference the following day.

SUGAR.

The Chairman referred the Conference to a memorandum on the subject copies of which had already been circulated. He then mentioned that whether in the present depressed price for sugar any great extension of the industry would be possible was very hard to say. In East Africa the Government definitely adopted a policy of high protection in order to encourage local sugar growing. Whether such a policy could be advocated in relation to Malaya was a matter for discussion. However the facts remained that Malaya imported a large quantity of sugar every year, and that Malaya was once a sugar producing country. The estimated cost for the construction of a factory was about £10 per ton of sugar, that is to say it would cost about £80,000 to construct a factory capable of turning out 8,000 tons of sugar. It was very doubtful if any one would embark on such an undertaking at the present monent unless Government were prepared to offer high protection to the industry. But on the other hand there seemed little to be said for continued importation of cane for eating purposes and he was glad to see that both Province Wellesley and Kuala Lumpur seemed to be growing more. It was possible that by encouraging the growth of sugar cane, Malaya could save a certain amount of money.

The Chairman then invited the views of members on the subject.

Mr. Jolly mentioned that canes imported to Singapore from China were practically all consumed by Chinese. During the last season the import of canes was not much more than 20% of the previous season. Chinese were of the opinion that imported canes were sweeter than locally grown canes.

The Chairman said that he thought that scope for extension was decidedly limited.

TEA.

The Chairman said that tea was one of the hopes of Malaya, but that with the possible exception of Chinese cultivators he personally was very doubtful as to the possibility of extension of the cultivation amongst the small-holding population of Malaya. Tea was a crop which required some time before coming into bearing and the operation of producing tea by hand was such as to render it hardly likely to compete with larger undertakings. If tea was to be grown in Malaya it would have to be a major crop and not a small-holder's crop.

Mr. South mentioned that Government should be careful not to overlook the type of tea demanded by the labouring class of Chinese in this country. While the production in Selangor probably met the requirements of Sungei Besi district, tea production by Chinese on a small scale in Kinta was capable of development in order to meet the demands of Chinese.

The Chairman agreed, but asked whether or not tea was considered a suitable crop for cultivation by the Malays in kampongs.

Mr. Cavendish instanced that Javanese in Java were planting tea and so there was no reason why in course of time Malays could not plant tea as a small-holder's crop.

Mr. Milsum pointed out that in Ceylon, Singhalese planted tea and therefore he did not see why Malays should not do so. They would probably require the "push" of European estates in the first instance however.

Mr. Williams suggested that Government should reserve land on Cameron Highlands for the Malays to plant tea so that they could sell the green tea to the estates. In reply to the Chairman who remarked that Malays might not like to settle in the upland areas, Mr. Williams said that there was an outside hill population in Java who, if they came here, would like the hill country to develop.

Haji Eusoff saidthat in the course of his tours in Perak there were many enquiries about tea planting. He suggested that Malays might be given a chance to see what they could do in the way of tea planting.

The Chairman then mentioned that it was unlikely that there would be any immediate expansion in the cultivation of tea by Malays, but added that the ultimate possibilities in this direction should be kept in view.

The Chairman then said that he expected to have all the resolutions ready for discussion on the following day.

The Conference adjourned at 5 p.m.

4th August, 1932.

The resolutions drafted by the Director of Agriculture in relation to the subjects already discussed were reviewed in detail and after general agreement had been expressed, the Chairman promised to supply the Conference with copies of the resolutions in time for further discussion on the following day. Dr. Tempany then asked Mr. Cavendish to take the chair, and the latter did so after thanking Dr. Tempany.

The Chairman said that items 1 and 3 on the agenda might be taken together. He then stated that wherever the co-operative movement had been started, it had soon been recognised that before prescribing any methods for curing the economic ills of the peasant it was essential to know the extent of those ills. When the movement was started in Malaya the principal economic fact was that the padi planter did not appear to get a fair price for his padi owing to "Padi ratus" and "Padi kuncha" systems.

In 1921, after his visit to India he made a report containing certain recommendations, the basic one of which was that an economic survey of this country be made. (the relevent portion of the Burma report was read out.)

Since then, Mr. C.F. Strickland, I.C.S., late Registrar of Co-operative Societies in the Punjab, had been to the Straits Settlements and Federated Malay States to report on Co-operation in Malaya and the basic recommendations in his 1929 report were the appointment of an Economic and Educational Officer and the formation of a Board of Economic Enquiry. (The relevant portion of Mr. Strickland's report was read out.).

Since the Strickland report had been published, Mr. R. Boyd, M.C.S., had been appointed Economic and Educational Officer and he assumed duty on 1st March, 1931. His first duty was to train the existing Malay officers of the department. He had now gone home on leave and would return only in April 1933 when the speaker would be retiring.

The Secretary of State for the Colonies subsequently enquired whether the recommendations made by Mr. Strickland had been adopted as a whole and he was informed that it had been decided to take no action to constitute a Board of Economic Enquiry until the Department had a fully trained staff of officers. Mr. Boyd was sent on a special mission to India and Europe in 1929 and 1930 and his report had been published. When the training of the staff had been completed it might become possible to consider the formation of an Economic Board. In the meantime a Committee consisting of the Commissioner of lands, the Under Secretary, and the Director of Co-operation, had been appointed to investigate the extent of indebtedness among Malays in the Malay Reservations. Their report of 1931 had not been published, but had been circulated amongst senior administrative officers and the federal heads of departments concerned. The figures obtained on investigation were distinctly alarming and showed that registered debts in Malay Reservations alone amounted to almost $3,000,000. The extent of unregistered debts was unknown.

The Chairman then referred to Mr. Boyd's memorandum on the collection of economic data and stated that the results it was hoped to obtain would be of great utility to Land Officers, District Officer, Agricultural Officers and Co-operative Officers.

The views of the Conference were then invited.

With reference to item 1 of the appendix to the first memorandum (Find out the nature of agricultural cultivation in the district), Mr. E.B. Williams pointed out that it was known already that about 2½ million acres of land had been alienated in the Federated Malay States and no less than 64% was under rubber. Also, there were fairly accurate statistics with regard to the amount of land under rice. That being so, the information sought was not so important as it appeared at first sight, and he warned the Conference that little or no reliable information could be got from such books as Mukim Registers with regard to the nature of cultivation. Hence it would be necessary to make personal examination of the land to obtain accurate statistics.

Item 2. Find out the number, area and nationality of registered small-holders by mukims, Mr. Williams expressed the opinion that the collection of data with regard to this item was going to be a very big undertaking. He told the Conference that some years ago when he was in Seremban he decided to prepare a card index of land owners in alphabetical order. Its compilation took a long time, but was not very expensive. One Junior Malay clerk was engaged on a salary of $20 per mensem and it took about 6 months to finish the work.

Mr. Williams continued that it was essential to have some sort of card index system in every Land Office so that the cards could be grouped by nationality and figures obtained. It would of course be necessary to record these figures at several differnt times, because they would vary from day to day and to

keep the statistics up to date the card indices would have to be kept up to date. Finally he urged the Conference to note that it would be impossible to get all the information required in a short space of time with the existing staff in Land Offices.

With regard to item 5 (Find out the population by nationality, by mukims and by trades), Mr. Williams said that since a full and complete census report was now available he did not imagine it would be very difficult to obtain the required figures. He emphasised the importance of evolving some fairly accurate method of estimating population and added that Mr. Vlieland's recommendations in this connection ought to receive the serious consideration of Government.

With regard to item 7 (Find out what credit facilities are available for the raiat), Mr. Williams said that the greater part of the information would have to be obtained in much the same way as he suggested before. It was going to be a long and tiresome job and possibly expensive. Personally he was of the opinion that the machinery for collecting this information should be such as would supply it anew from time to time, say every two or three years.

He said that he doubted whether this statistical work could be left to the District Officers without a certain amount of guidance and possibly provision of additional staff. As the greater part of the information would have to be obtained from Land Offices there should, if possible, be made available in every Land Office one clerk whose business would be statistics and nothing else. He did not think it was necessary to have highly paid clerks provided they were trained properly and told what to do. In addition, it was most essential that there should be some Federal Officer to go round and organise the work in conjunction with District Officers. The nature of the work was such as would require careful thought and careful working out. Before work was started, methods should be discussed and suitable forms be provided; adequate organisation should be prepared.

In conclusion, Mr. Williams asked the Chairman not to think that he was finding fault with the suggestions. He only thought it advisable to point out in advance the difficulties which lay ahead in extracting from the Land Offices all the information available and in correlating that information in the best possible way.

Capt. Hashim, Acting Economic and Educational Officer, then explained that the department had begun by training the Malay Officers in Economics and Co-operation. The course was finished about March this year and work could not be started until June. One Junior Malay Co-operative Officer had been detailed for statistical work. The lines followed were more or less the same as those suggested by Mr. Williams. So far, economic data had been collected in respect of three mukims, namely, Setapak, Kuala Langat and Ulu Langat, in Selangor.

Capt. Hashim then acquainted the Conference with the details of the data so far collected.

Mr. Williams enquired how much the Junior Malay Co-operative Officer was paid.

The Chairman replied he was paid $130 per mensem.

Mr. Williams remarked that this type of work could be done more cheaply by the appointment of a junior clerk.

The Chairman said that on enquiry it was found that no staff would be available locally and therefore the Junior Malay Co-operative Officer had to be detailed for the work.

Mr. Crawford added that it was part of a Malay Co-operative Officer's work to get definite and practical experience of the economic conditions of the peasantry.

Mr. Newboult mentioned that as a result of his conversation with Mr. Boyd he started an experimental economic survey of Jeram Mukim. The work was done by his office staff out of office hours. There were about 170 holdings comprising about 750 acres and the Penghulus had to work for one month collecting data, going round from house to house. The assimilation of the data took about 4 to 5 months and every time the figures were gone into some new feature emerged.

With regard to the registered indebtedness of each holding, Mr. Newboult said that a large amount of land was held under unregistered agreements. Besides, for every $100 principal on unregistered documents the amount actually due including interest was on the average about $250. Further, Mr. Newboult said that he was of the opinion that one mukim could never be representative of the different parts of the district.

With regard to the question of staff, he supported Mr. Williams' suggestion that there should be attached to the Land Office a junior clerk to deal with statistics alone. The rest of the work he thought could be done by the Co-operative Societies Department in conjunction with the District Officer.

Mr. Gammans said that without economic data it would be impossible for any department concerned with the welfare of the raiat to lay down a really sound and satisfactory policy. As Mr. Williams had pointed out, it did seem very necessary that some permanent machinery should be created to see that work was done on the same lines throughout all districts to secure uniformity and that the records were kept up to date. He then suggested that the Conference might consider whether it would be possible to recommend to Government in spite of the present financial stringency that a Board of Economic Enquiry should be constituted on the lines suggested by Mr. Strickland. His own view was that unless such a Board was constituted, the collection of economic data should be put off indefinitely apart from experiments which might be made from time to time.

Mr. Hunter said that the two questions, one of collection and the other of assimilation, were involved in some confusion. As to collection, he thought it would be very difficult to put any acceptable suggestions forward to Government at the present time.

He also desired to know why such data were required, and with what object they were to be collected. With regardto the work of collection, he pointed out that if in each Land Office a Malay clerk were to be detailed specially for this work, then at least 25 clerks would be required. In his own office the clerical staff had been reduced from fifteen to ten and so he would not be able to spare anybody.

Further, he added, the question should be considered whether the collection of data was necessary in every district. He suggested that the best course would be to concentrate on one State and see how experts in the Co-operative Department would assimilate the data collected. To start an Economic Board straight away and to ask for staff throughout the Federation would, he thought, be inviting a blank refusal from Government. Personally, he was very dubious about the economic data. Malaya being several years young than India it was a mistake in his opinion to have brought down an officer from India to report on conditions in Malaya. He thought that no ill-considered action ought to be taken on the authority of the Strickland report.

Mr. Allen said that at the present time he could not recommend going any further than the appointment of a junior clerk for the collection of statistics. He also raised the question how much supervision would be necessary. Since most of the District Officers were now performing additional work, he thought the appointment of a Federal Officer to look after the work of collecting data would be advisable. District Officers would only be too willing to give the necessary supervision. Further, he urged that no time should be wasted in the collection of data not urgently required and suggested that the economic Boards which it was hoped to establish in each district would be in a good position to decide what data were urgent and what were not.

Mr. South pointed out that Land Office records were not fully reliable and that the collection of accurate data in relation to the area under different crops in any mukim was by no means easy and could not be done at an office desk.

Mr. Newboult agreed with Mr. South and said that he was very much in favour of Mr. Hunter's suggestion that the collection of data should in the first instance be limited to one or two districts in a State so that by experience it could be ascertained what details were necessary and what unnecessary or less important and also the nature of the difficulties which were likely to arise.

Referring to Mr. Hunter's point, Mr. Gammans said that one of the factors which emerged from the discussions on the various agricultural problems, particularly the marketing of peasant produce, which had been considered during the previous sessions of the Conference was the surprising lack of knowledge as to the number of products which were in any way organised. Unless there were definite data, the efforts of certain departments and especially of the Co-operative Department would necessarily be nullified. In support of this contention Mr. Gammans gave the following illustrations:

(i) Finance. Unless it was known whether the Malay was in debt, if so, to what extent, and whether the amount of indebtedness was increasing or decreasing, it would be impossible for the Co-operative Societies Department to achieve its aims, namely, to free the Malay from debt and to build up a sound system of finance and economics.

(ii) Marketing. One was often led to suppose that the existing systems of marketing were rather unsound, at any rate, from the producers' point of view. Hence, to substitute a new system, it was necessary

to have definite information on the specific points mentioned in the memorandum, advocating the collection of economic data.

Mr. Gammans went on to say that whether the activities of the Board of Economic Enquiry, if and when created, were to be limited to a particular State or Settlement was only a minor point. He urged that some definite organisation to co-ordinate the activities of different departments should be created with the Commissioner of Lands as President. In this way the best method for the collection of data could be evolved; whether it should be done by existing organisations in the District Officers or by Co-operative Officers or by Agricultural Officers or otherwise could be decided later on.

Dr. Tempany suggested that, as several departments would be interested in the collection of data, it would be necessary to take precautions to avoid overlapping. Over-elaboration should also be avoided. He felt that part of the information sought in the memorandum was of agricultural interest, while part was of social and economic interest, but that a good deal of it might not be absolutely essential. In conclusion he suggested that the following points should be borne in mind:

(a) How much of the data was essential.

(b) Whether the work could be shared by different departments.

Mr. Nash suggested that in view of the frequency of transfer of Land Officers it would be better to appoint a fairly senior officer from the Co-operative Department or the Agricultural Department, who knew exactly what was wanted. Land Officers could be instructed to give him all facilities.

Mr. Williams suggested that a small co-ordinating advisory board would be essential to decide what was wanted and in what districts to start and to issue detailed instructions to the District Officers and others concerned. Co-ordination on the spot at District headquarters demanded further consideration. He was of the opinion that additional staff would be required, otherwise it might take three or four years before the information could be obtained.

Mr. Grist said that he held the post of Deputy Registrar-General of Statistics and was working as a liaison officer between the Agricultural Department and the Statistics Department. His main line of work was in connection with area, production, stocks of rubber and annual planting of rubber and rice. From the reports of Agricultural Field Officers regarding rice, a general summary was usually compiled. All information available was generally sent to Singapore and published. Of late, it became apparent to the Registrar-General of Statistics that without considerable increase of staff he would not be able to supply all the statistics demanded from various parts of the world. Hence, the Registrar had made it a point to refuse to collect statistics unless he had the assurance that the statistics asked for were of general public utility. In short, statistics collected by the Statistical Department were for the use of Government Departments. If they were of interest to the commercial community, they too could make use of such statistics.

Dr. Tempany said that the statistics collected by Mr. Grist were insufficient to form a basis for the work envisaged in the memorandum and that he favoured the appointment of a Committee in the first instance on the lines suggested by Mr. Williams.

Mr. Newboult said that if the Co-operative Societies Department could concentrate on one District, getting the information detailed in the memorandum, and that information could be placed at the disposal of the Committee suggested, for it to decide how much of the information collected would be useful, how much further work would have to be done and what amount of extra staff would be required, then the departments concerned would be in a stronger position to approach Government asking for extra expenditure.

The Chairman suggested that the question of the collection of statistics be referred to a committee under the Chairmanship of the Commissioner of Lands, consisting besides the Chairman of the Director of Agriculture, the Director of Co-operation and the Deputy Registrar-General of Statistics, which would examine the position in all its aspects and submit recommendations to Government with a view to inaugurating the work. This was agreed to by the Conference.

ORGANISATION OF DISTRICT ECONOMIC BOARDS.

After referring the Conference to the memorandum on the subject, copies of which had already been circulated, the Chairman pointed out that the name "District Economic Boards" was subject to discussion. Some people had suggested "Development Boards", while others desired "District Councils". The name, however, did not mattermuch so long as the machinery got going.

Attempts had been made in two districts in Selangor to co-ordinate the activities of the Agricultural, Co-operative, Veterinary and other Departments. With regard to this, he asked Mr. Gammans to acquaint the Conference with the nature of the work done.

Mr. Gammans said that the underlying idea of such bodies was to correlate the activities of the District Officers and of specialised departments in all work affecting the welfare of the raiat. He suggested that in order to save time the following points be considered:

(a) The desirability or otherwise of forming such bodies.

(b) The name to be given to such bodies if considered desirable.

He pointed out that two informal meetings had already been held and invited the District Officers concerned to give their views on the proposal.

Mr. Allen said that two informal meetings had been held in Klang District. At the first meeting Mr. Gammans, Mr. Simpson and Enche Pateh Akhir were present. The necessity for the collection of economic data was discussed at some length and it was realised that as it would take considerable time they should in the first instance concentrate on the urgent

problem of alleviating the burden of the raiat. It was apparent that throughlack of co-ordination the advice given to the raiats by different officers was not the same.

In Klang district most of the holdings were planted with rubber. The following questions arose out of the present position of rubber, namely, (a) is it necessary to cut out some portion of the rubber and plant foodstuffs so as to enable Malay small-holders to maintain a tolerable existence? (b) if so, to what extent ?

After some discussion it was decided that for the present the raiat should be advised more or less as follows:

(i) That rubber was not likely to rise in price in the near future, but might even fall below its present level, and that the wise man would endeavour in every way possible to grow sufficient foodstuffs for his own use.

(ii) That auxiliary sources of income such as poultry breeding should be sought.

(iii) That in view of falling income, expenditure should be reduced, especially for uneconomic purposes such as weddings.

Subsequently an informal meeting was held at which many Penghulus and Ketuas were present together with Messrs Gammans, and Simpson, Dr. Stanhope, State Veterinary Officer, Dr.Farris, Health Officer, Coast and the Assistant District Engineer, Klang.

These officers were introduced to the Penghulus and Ketuas and the work of the departments which they represented was also explained to them briefly. One or two problems such as poultry disease were discussed. In conclusion Mr. Allen said he felt sure that much good could be done for the raiat by officers of different departments discussing matters together and closely collaborating in taking action on their decisions.

Mr. Newboult said that very similar action had been taken in Kuala Selangor. Personally he felt that these Boards would, in addition to co-ordinating the work from the Government's point of view, also bring the raiat into closer touch with the Government, thereby enabling him through the Penghulus and Ketuas to make his requirements known more quickly and more clearly than before. The work so far done only regarded the immediate requirements of the raiat and he hoped that the functions of the Boards could be extended and formulated more definitely in the light of experience.

Dr. Tempany said that he would like to support the idea of these District Boards. He urged that at the present stage it was not advisable to define the functions of these Boards too closely. Mr. Allen had told the Conference that he had invited the Health Officer and the District Engineer. Hence, it seemed that the work of a Board like that would vary in accordance with the requirements of the particular district in which it worked.

He then pointed out that Irrigation Boards had been formed in Krian and Selangor. From what he had seen of the

District Officer,
Raub.

work of these Boards, their activities were extending and it seemed not unlikely that they might eventually assimilate their functions to the suggested functions of the Boards now being discussed.

He thought that the wisest course would be to suggest that such Boards or Committees should be formed and to allow the various District Officers an absolutely free hand in the initial stages. After they had been in existence for a year or so, a conference of District Officers and other officials could be called and the lines along which to proceed further could be discussed in detail.

Further, he did not think that one such Board in a District would be sufficient. Wherever feasible, such Boards should be supplemented by the formation of local mukim Committees which would form useful adjuncts. Thus with Mukim Committees and District Boards it might be possible at a later date to organise State Boards and ultimately to evolve even a general Malayan Economic Council.

Mr. Williams thought that Dr. Tempany's idea of forming small mukim committees was an excellent one. They would cost nothing and in any case they could do no harm. With regard to the composition of District Boards he thought that the matter should be left to District Officers. They should have power to co-opt members. It might do a certain amount of good if meetings were occasionally attended by Penghulus and other prominent Malay Chiefs. At present every Penghulu knew the District Officer, but did not necessarily know the Health Officer of the Engineer. If he met these people at the office, sponsored by the District Officer, there would be closer contact and greater sympathy between the various technical and other officers than at present.

With regard to the name, one suggestion occurred to him, and that was "Rural Boards", because such Boards would discuss what action should be taken to improve the lot of the rural population. He agreed that the form and functions of these Boards should not be defined too closely at present; District Officers should call meetings to be attended by various persons to discuss common problems from time to time. The Boards should have no executive powers, but should be purely consultative and advisory. Their discussions would soon result in valuable recommendations being put forward to Residents and Government Generally would be willing to help.

Mr. Hunter expressed the opinion that it would be better if the District Officers could have a preliminary talk with representatives of various departments before discussing matters in detail at a conference of Penghulus. He thought it was premature to talk of a Board at present.

Mr. Nash stated that most District Officers even now dealt with the matters referred to in an informal way. Hence he did not see the necessity for the creation of Boards. Besides, Boards were liable to become perfunctory. He was in favour of co-operation, but doubted if it could be shown that such Boards were really going to help Co-operation very much. Personally, he had always found the various departments very willing to collaborate.

Referring to the views expressed by Mr. Hunter and Mr. Nash, Mr. Gammans said that although in certain cases

close collaboration did take place, taking the country as a whole there was definite need for much closer co-operation between administrative and specialised departments and also between the specialised departments themselves. The Co-operative Societies Department was trying to do something for the benefit of the raiat, but if the maximum benefit was to be obtained, it was absolutely essential to have the closest possible liaison between the various departments concerned. The raiat knew the District Officer, but knew very little about other officers. The raiat was always suspicious in the early stages of any new individual or advice. Any officer other than the District officer had to spend a tremendous amount of time before he could get the raiat to do what he wanted.

He was not particular as to the name to be given to these bodies, but it was essential that they should continue to meet in an informal sort of way but under a definite organisation for some time to come. Their functions could then be decided in the light of experience.

There was another point: the raiat was entitled to some sort of explanation as to the calamity which had lately fallen upon him. The speaker was told that in Malacca the view was held that the fall in the price of rubber had been deliberately caused by Government. If such was the belief of the raiat, it constituted a dangerous menace. It was essential that officers should exchange their views and form common decisions as to the advice that should be given to the raiat, especially at this time of slump.

The more permanent functions of a Board would include the collection of necessary data and the control of such projects as colonisation. In former years land had been alienated in lots of three to four acres per individual without due regard as to whether or not such a holding constituted the minimum necessary for a reasonable comfortable living for a family. With the assistance of such Boards it would be easier to decide what the economic side of a holding should be. He envisaged that from these Boards would eventually grow State Boards and finally a general Economic Council. He also pointed out that if such a Council had been in existence during the last 20 years, Government would not have found itself in the financial difficulties in which it was to-day.

Referring to Mr. Nash's plea for informality, Mr. Allen said he would like to enter a counter-plea for formality. The important point was to pool information. The District Officer wanted to know what was going on elsewhere and at meetings of such a Board as the speaker hoped to see established, departmental officers would be present and would be able to inform the Board what was being done by their Departments in other Districts and in fact in other States.

Mr. Doscas then explained the working of the Krian Mukim Advisory Boards. These Boards had been constituted a long time back. For a number of years they did not function, but they were now working. The meetings were usually presided over by a Penghulu and a number of Ketuas attended. Goverment authorities got an expression of opinion on matters discussed and in this way it was possible to introduce a useful element of democracy. If something on similar lines could be inaugurated in connection with the subject under discussion, a strong appeal to the raiat might be made. In Krian, an Assistant

District Officer was the Chairman of the Mukim Advisory Committee, and everything of a controversial nature was submitted to all the Mukim Advisory Committees. Minutes of meetings were submitted to the Krian Irrigation Committee for consideration.

With regard to Mukim Advisory Committees, Enche Tahir said that he had made it a point to attend every monthly meeting and joining in the discussions. The padi Inspector attached to the Land Office also used to attend. Discussions were mostly confined to questions connected with rice cultivation. The points so far discussed related to improvements in planting so as to get better yields than in previous years. All Ketuas took part in these discussions and resolutions passed were sent to the District Officer as Chairman of the Krian Irrigation Advisory Committee.

After every meeting he took the opportunity of discussing other questions not connected with rice cultivation, such as poultry keeping, with the kampong people and the extravagant customs of the Malays. With regard to the keeping of poultry, the Bagan Tiang Committee had decided to address the District Officer requesting him to arrange to send the Veterinary Officer to advise on poultry keeping.

Mr. Nash said that he remained unconvinced as to the advisability of a Board of formal character. Such a Board would tend to adjourn on completion of the discussion of the itemson the agenda. He suggested that it would be a good thing if District Officers would set aside one day every month as Conference Day on which it was hoped that certain officers would attend.

Mr. Hunter agreed with Mr. Nash's suggestion. Penghulus' Conferences in districts existed already and he was of the opinion that such a system could with advantage be extended to mukims. Officers from other departments could be invited to discuss matters with the District Officer, who could later communicate the suggestions emanating from such discussions direct to the Penghulus at their Conference and therefore it was not necessary to give any definite name to the organisation envisaged.

Dr. Tempany then moved a resolution on the following lines:-

" Some form of organisation is desirable to fulfil the general objects set out in the memorandum. Opinion is not yet definite as to the exact form which the organisation should take, but it should be left in the first instance to the initiative of the District Officer".

This was agreed to.

FINANCING AND MARKETING OF PRODUCE.

In connection with this subject the Chairman drew the attention of the Conference to the memorandum, copies of which had already been circulated. He mentioned that there was an old pamphlet entitled "The Principles of Co-operative Marketing" which he had delivered in the form of an address to the Planters' Association of Malaya in 1924. A model organisation of co-operative marketing was the Fruit Growers' Association

of California - a collection of small-holders who had set a very brilliant example of co-operative marketing by small-holders. The pamphlet referred to contained a summary of the lines followed by the California Fruit Growers, which in his opinion were applicable to Malaya.

The present age was one of co-operative marketing. The Department had tried co-operative marketing of rubber. Two officers had been engaged for the purpose and a factory was started at Ulu Gombak in Selangor. Subsequently it was found that the preparation of factory rubber was beyond the capacity of the peasant. Groups selling and improvement of the product were tried under the guidance of the two Co-operative Marketing Officers, at Dusan Tua under Mr. Dukes and at Batu Kurau under Mr. Winter. The idea of co-operative marketing had been extended to copra, and arecanuts. But it must be realised that Co-operative marketing was a difficult and complicated business.

The Chairman then invited the views of the Conference.

Alluding to the memorandum prepared by Mr. Boyd, Dr. Tempany said that he was in favour of one point emphasised in paragraph 6 thereof, namely the need for starting on a small scale. That was the crux of the whole situation.

In Malaya one was most likely to achieve success with cultivators by confining oneself at first to some relatively very small problem. An illustration was seen in the small groups formed in Kuala Selangor for the marketing of copra, with a view to securing combination amongst the small holders for the purpose of enabling them to get better prices. The idea of co-operative credit seemed to suffer to some extent because an elaborate system of book-keeping was required and to understand the principle on which such a credit system was worked required a great deal of education. He was convinced from experience in Mauritius and elsewhere that combination for the sale of produce made the most immediate appeal to the peasant. Get the people together and bring their products together, sell them, take the profit and distribute it. Such a method was simple and attractive.

Another point to be remembered was that Government in endeavouring to introduce co-operative marketing for the benefit of the raiat was facing an opposition which was not necessarily bad - in fact, quite the contrary. The combination of Chinese in rings was similar to that aimed at by the Government on behalf of the raiat. The Chinese dealers were keen businessmen and therefore what was wanted was the training of the raiat to fight the Chinese dealer by co-operation on his own part. The problem was serious, and Government's sympathy should go to the raiat rather than to the middleman because the prosperity of the former was more essential to the welfare of the country as a whole.

He also referred to Mr. Gammans' suggestion regarding the possibility of establishing Government-supervised depots in large towns and said that in this time of financial crisis such a system might be worth trying.

The Chairman emphasised the importance of adequate financial arrangements in co-operative marketing. Mr. Wolff gave his whole life for co-operation and he had said that co-operation should begin with finance by providing capital

and credit. Hence it was obvious that funds were essential for starting any co-operative marketing organisation.

He wished to lay stress on the fact that the fundamental problem was debt and if men were in debt one should be very cautious in starting co-operation among them. In America where co-operative marketing was tried on a very large scale, as soon as the groups started combined selling, outside creditors began to press for their dues and so special legislation dealing with aliens on agricultural produce in co-operative wherehouses and depots had to be passed.

He then referred to Mr. Newboult's memorandum and pointed out that there was an interesting group at work in his district and also another at Dusan Tua. He emphasised the necessity for Government to assist peasant producers to sell their produce on co-operative lines. If the produce were sold on pure co-operative lines, then there would be justification for the perpetual cry that Government was trying to compete with existing business organisations. He then asked Mr. Newboult to give details of the group referred to.

Mr. Newboult explained that the Sabak copra kiln was run by a small group of 17 Selangor Malays and that he personally had had nothing to do with the inauguration of the group but had merely re-arranged their accounts and given a little general supervision at a later stage. The idea of joint marketing was entirely their own and seemed to have originated from a Ketua. This man's son had passed the Standard VII examination at the Victoria Institution, Kuala Lumpur, and he had now been taught to keep the books. A surplus fund has been formed from which they could borrow, but efforts made by the speaker to divert some of this into the Post Office Savings Bank had not as yet been successful. The scheme was not co-operative marketing in the true sense, but he thought it better to allow them to continue their activities in the hope that in due course they would adopt certain by-laws under the guidance of the Co-operative Societies Department.

Sabak was a good market for copra and it was hoped that three or four kilns would be started there. If they were started, the Ketua's son, whom he had mentioned, could do all the clerical work. They were also trying to find a market in Penang. Altogether, the idea was one which could form the basis for a much sounder position for the raiat in Lower Perak.

He further mentioned that he had been present at a meeting at which the Malay Co-operative Officer, Lower Perak, went into great detail regarding the possibilities of forming a co-operative society among these people. Some of them said "We do not want your by-laws", but, left to themselves, they soon had their own by-laws - 14 pags romanised. Most of their rules were unworkable, but the incident illustrated the fact that Malays were not much in favour of Government rules and regulations forced upon them all cut and dried. Left to themselves they would evolve their own rules and these might later be brought into some sort of order.

Raja Musa said that he wanted to make it quite clear that he was not in any way responsible for the 14 pages of by-laws. He had been transferred to Headquarters for training and on his return six months later he learnt the fact from the Assistant District Officer. In Sabak, the price of copra went

up because the leading Chinese had put up the price himself to try and divert supplies to his shop in Penang. The Sabak group was also trying to sell copra in Penang.

Dr. Tempany pointed out that the question of getting such organisations formed was largely psychological. In his opinion it was better to allow these people to go ahead without compelling them to adopt a mass of rules and regulations in the first instance. If they made mistakes as a result, they would then be only the more willing to listen to good advice when offered. He also pointed out that the organisation at Sabak was an illuminating instance in support of his view and he remarked that the prestige of the enterprise was increased by the support of the District Officer.

Mr. Gammans said he would like to lay special emphasis on the human factor. The departments were after all dealing with human beings and they were only likely to get the best results if they had some working knowledge of psychology in general and Malay peculiarities in particular. There was a general lack of credit facilities and want of forethought for the morrow. The raiat was extremely conservative and there was much wasteful expenditure on uneconomic ends. Compared with other countries, India for example, Malaya was largely free from floods, droughts and total failure of crops. On the human side there was no love of litigation and so far there was no need to tackle the problem of excessive fragmentation of holdings. There was no landlordism and there was not very much economic drain in the name of religion. Distances were short and communications were good. In the past at any rate, Government had had ample funds for work of this nature.

There were however some unfavourable features. In the first place, Malaya was not a racial unit and the Malay had to compete with immigrant races who were at least his equals in energy and his superiors in general business aptitude. Secondly, in the past, the excessive profits obtained from rubber tended to give the rural population entirely false sense of economic values.

The chief difficulty was that unless the raiat was convinced that his methods were unsatisfactory, all the efforts of Government Officers would be very largely nullified. Therefore, he said he personally attached great importance to the Rural Lecture Caravan. By propaganda the Malay could, in his opinion, be made "problem-conscious".

So far as marketing was concerned, the ideal to aim at should be that the demand should come from below rather than be superimposed from above. The sabak case was a definitely good example of the urge having come from the people themselves.

In connection with indebtedness of the raiat, he instanced the economic position of a particular fishing kampong in Port Dickson. The total amount owed to the Chinese dealer by the Malays was so small per head that it could have been paid off in about six weeks, but the surprising part of it was that there were men in the kampong who had owed that debt for the last 12 to 15 years and had been tied to the middleman for the whole period. Government had lent money to fishermen in the past to pay off the middlemen; but finally they were in debt again and Government did not recover a single cent. In conclusion he stressed the need for propaganda, firstly to make

the people problem-conscious and secondly to instil in them a spirit of determination to improve conditions.

Speaking on the subject of marketing with special reference to the scope of the Co-operative Societies Department, Mr. Williams urged that members of the Co-operative Societies Department should bear in mind that co-operation in its legal sense was merely a means to an end. Therefore, what was wanted first was education rather than compulsion. The legal side of Co-operation should not be overstressed. Sufficient education should be imparted so as to lead the peasant up by degrees to the final stage of Co-operation.

Mr. Cooke said that the manufacture of copra by Malays, whether co-operatively or otherwise, had resulted in enhanced prices for coconuts. This development had been prophesied at the previous conference two years ago by the Director of Agriculture and it had now been established that whether good or bad copra were manufactured, some improvement in the financial circumstances of small-holders would result if a proportion of them manufactured their own copra.

When it came to establishing copra manufacture so as to obtain the highest possible return to the raiat, the basis must be good dry copra, the market must be explored to find the best buyer and the product must be bulked and transport organised. In his opinion, this could only be done by a single Malay acting alone and there was little hope of success if the committee system of management was adopted. The most successful enterprises up to date, whether the business were on the 'kongsi' basis or were small capitalist enterprises, were all characterised by strong leadership by individuals. If it was proposed to impose committee control on the individual, his best efforts would be thwarted by argument and counter-argument and ultimately the organisation would become in-effective.

In his opinion, considerable benefit would result to the small-holders if the organisations of selected individual Malays were fostered and encouraged by Government. Such business would, of course, be capitalist and not co-operative enterprises but the power of the Malay race would advance as the wealth and financial ability of the individual increased. In any case, the marketing of the produce of individual capitalists was not outside the subject of this sitting and must not be lost sight of.

Mr. Gammans then said that the aim of the co-operative adviser should be to strike a happy balance between too much and too little regulation and to do this three fundamental difficulties had to be overcome. They were the question of credit as opposed to cash, the lack of knowledge of trade, and honesty of administration. Every co-operative authority in the world had laid it down that the strength of the movement would always depend on the knowledge possessed by the individual. The individual member who goes into co-operation frequently does not know what he is going in for and he does not know what the co-operative movement can and cannot do for him.

When a scheme was put in front of the department, the first criterion of its satisfaction should be that it was a co-operative scheme existing for the benefit of all the members concerned and not of individuals.

Mr. Doscas said that if Government was going to help, it was first of all necessary to ask whether people were prepared to sell jointly.

Capt. Hashim pointed out that if peasants were allowed to experiment with sales without establishing themselves as a society according to law, training would become very difficult. There were certain technical processes in marketing such as grading, packing and transport. If the raiat were not trained in these processes beforehand, it would be very difficult to make much headway.

Raja Musa urged that the best way to make a start would be to make the raiat realise that he could work as a member of a group. The problem was both economic and social. What was aimed at was to get a better price for the produce of the raiat whether by co-oprative or other methods; but, so far, authorities all over the world had agreed that co-operative methods were the best. Hence it was only right that officers should try to establish co-operative means to achieve the end in view.

Regarding the price of copra he thought there had been a general rise. The difference between prices in Bagan Datoh and Singapore was about 75 cents a pikul. The scale used for weighing purposes was the 'daching' and the accuracy or otherwise of the weight depended upon the string used. With regard to this, one excuse advanced by the Chinese was that this was the only way in which they could cover their losses on the not fully dried copra that was being produced. He maintained that there was a general rise in the price of copra in Lower Perak and so people were not inclined to sell in Penang. However, there were a few Malays who sold direct to Penang.

Mr. South said that quite a number of Malays were at present anxious to start growing alternative crops and they might even be prepared to cut out rubber; but the difficulty for them was to find money to buy necessary planting material and to keep them going until the crops could produce a return. In connection with marketing schemes the question of capital was most important and the discussions so far suggested two alternatives. In the first place in the Sabak Bernam Scheme the necessary commencing capital was subscribed by fourteen members because they were not so badly hit by the slump as others and had a little reserve money. In that connection one might consider What Mr. Cooke had said.

Another alternative was a capitalistic scheme run for the benefit of the community as well as for that of the capitalist. An intelligent member of the community started with a certain amount of capital, built his kiln and made his profit. At the same time, he gave a better price for nuts to others. Although that method was certainly not co-operative he did not see any particular reason why it should be condemned simply because it happened to be of a capitalistic nature rather than of a co-operative nature. If it was a question of finding capital, all avenues ought to be considered. In this particular instance the community in the neighbourhood had benefitted and therefore he did not feel it necessary to tie oneself down to only one method of marketing peasant produce. He urged that such practical schemes were likely to benefit the community in any locality should be encouraged and made use of as far as possible but that recourse should be had

to the idea of finding capital by co-operative means, where individuals would not provide it themselves.

Mr. Crawford said that capital could be provided through existing Thrift and Loan Societies. With regard to the necessity for by-laws, he pointed out that once any society had been placed on a sound basis the members would consider by-laws necessary.

Mr. Hunter pointed out that, though Co-operation was in a way capitalism inasmuch as it required capital, nothing but co-operation had ever been of any benefit to the peasant. An impetus had been given by the present slump and the ordinary raiat had learnt more than ever before. In the initial stages co-operation was bound to have a lot of setbacks, but in the long run co-operation would be found to be the best means of improving the position of the raiat.

Mr. Newboult said that the Malay in Kuala Selangor to whom he had referred could hardly be called a capitalist. He had worked several years ahead of the rest of the Malays and the result was that he was making a very handsome profit at present, but through him the price of coconuts had been raised and in addition he was doing a fair amount of experimental work in finding out the easiest way for the local man to prepare his copra for the market.

It was hoped to start a small kiln in Kuala Selangor with a capital of $5 which was the actual price of a kiln of the approved type, that is to say, of the required building materials. Labour would be put in by the people themselves. Initial payments for coconuts would not be made in full till copra was sold. People would have to be satisfied with 50% of the price to start with and 50% after the copra was sold. Personally he did not think that lack of capital need necessarily stop anybody from starting a kiln like the one in Sabak.

Mr. Dukes agreed that such organisations could be started with a very small amount of capital. He instanced that the Batu Kurau society was started with a borrowed capital which members were able to repay after seven months. But the Malay was not an economically minded man and he usually had to be awakened in his needs. At first an experimental attitude must be adopted. The Dusan Tua society had been running for two years and the members were just beginning to have an intelligent appreciation of the working of the society.

With regard to the policy of profit making, he expressed the opinion that co-operative methods were better than capitalistic ones. Profits were distributed by a process of patronage rebate or dividend and in this connection he invited the attention of the Conference to the Notes on the year-end accounts of the Dusan Tua Co-operative Rubber Society, Ltd., copies of which had been circulated. As the reserves were considerable, members had been given a rebate in the form of cash for the purpose of assisting them in paying their rents. The Co-operative system would, he thought, have a remarkable effect on the Malay both economically and morally in the way of lessening illiteracy, laziness and pessimism. At Dusan Tua practical advice on crops was being given and co-operators turned up regularly. There was also a co-operative shop and the speaker felt that such facilities for purchasing necessities on the most advantageous terms should, wherever possible, be provided in conjunction with selling organisations.

With regard to demonstrations in Selangor, it was observed that a tremendous amount of interest was being shown by boys. The minds of many of them were active and they were anxious to take an interest in what was being done. Actual demonstration did a great deal to overcome mental intertia and lack of knowledge and even leaving aside the the financial benefit, the gain would be very considerable.

Enche Tahir said that, so far, the Co-operative Societies Department had had no difficulty in raising capital for any project. He urged that the Conference should consider what minimum relief should be given to the peasant and that the authorities concerned should select one or two commodities on which the peasants were suffering especially heavy losses and see if markets could not be found for the sale of such commodities. In his experience in organising the co-operative sale of eggs he had found that the raiat was ready to supply eggs but the difficulty was to find a market.

The Chairman said that the need for the education of the raiat had been recognised and that steps had been taken to satisfy this need by the appointment of an Economic and Educational Officer, whose main duty was to teach people the difference between co-operation and capitalism. The latter was a system liable to collapse on account of its own super-structure. The co-operative system was a highly scientific one, not rigid, but flexible and adaptable to meet changing economic conditions. He had given the matter considerable study and had not the slightest doubt that co-operation alone was going to see the slump through. Co-operation aimed at better farming, or better production and better business, finally leading to the goal of better living, and so far, the co-operative system was the only sound enconomic system which human ingenuity had devised for the relief of the peasantry in any country.

Referring to the question of by-laws, he pointed out that the Department did not want to start any co-operative venture except under a clearly defined programme of work set out in by-laws. Disputes would not then be likely to arise or lead to expensive litigation, but could be settled to the satisfaction of all the members by reference to the written constitution of the society; as defined in the by-laws.

He felt that the raiat was still in a position of serfdom and that as soon as a way out was shown him by co-operative means he would readily respond. In conclusion he said that the Conference owed a great debt to the District Officer, Kuala Selangor, and to Mr. Dukes, the Co-operative Marketing Officer, whose efforts to establish co-operative marketing societies provided an example of great utility to others.

The resolution drafted by Dr. Tempany was then read out and was agreed to by the Conference.

The Conference adjourned at 5 p.m.

5th August, 1932.

The Conference was presided over by the Honourable Mr. T.S.Adams, M.C.S., British Resident, Selangor. After the distribution of copies of the resolutions at ready drafted, the Chairman said that the first item on the agenda was to consider these resolutions put forward as a result of discussion during the previous sessions. He said that they would read out one by one and that amendments should not cover the ground that had already been covered in previous meetings (a copy of each of the resolutions as presented to the Conference is appended to these proceedings).

Resolution No.1.

Mr. Williams said that he feared that the resolution might conflict with the International Treaty obligations to which Malaya was a party. He then read out article 19 of the Convention of the International Conference.

The Chairman pointed out that the matter had actually been considered by Government and while it was possible to construe the words read out as meaning that compulsory labour could be made use of on small and new undertakings, he thought it was extremely unlikely that Government would be willing to permit that as it would be considered a breach of what Government was undertaking to do.

Mr. Hunter proposed that the resolution should be rejected and Mr. Nash seconded.

Mr. de Moubray said that without moving a resolution he could see a way round and suggested that those peasants who took sufficient part in the work might be given preference in the alienation of 'bendang' land.

The resolution was confirmed by majority.

Resolution No. 2.

Dr. Tempany pointed out that the period devoted for training at Serdang was one year and that it might be necessary to modify the present syllabus in order to include a greater measure of training than was normally provided in the course and in order to meet that view, in case the proposal was accepted by the Conference and by Government, he proposed to confer with the Director of Co-operation and introduce any modifications that might be necessary in the scheme so as to make necessary changes in the curriculum.

The Chairman pointed out that in future all Assistant Penghulus who were selected would be given one year's training before they took up their duties.

Mr. Cavendish mentioned that the Economic and Educational Officer should be in charge of training the Colonisation Officers in economics.

With reference to paragraph 3, Che Tahir proposed that "officers of the general public service" be substituted for the Civil or administrative services" in line 3 of paragraph 3.

The Chairman said that an officer could not be transferred to the administrative service from another department.

Capt Hashim pointed out that in Southern Sumatra Mr. Schalwart rose to the post of Colonisation Officer from that of a police officer.

The amendment was seconded by Haji Eusoff but was lost by a majority.

Resolution No.2 was confirmed.

Resolution No.3.

Mr. Finch suggested that "heavy" be substituted for "swampy" in line 3 of paragraph 1.

Mr. Hunter proposed that "particularly those situated in swamy jungle" be deleted.

Mr. Newboult seconded and the amendment was carried.

Mr. Cavendish proposed the addition of "and elsewhere" after "West Australia" in line 2 paragraph 2.

This was seconded and carried.

The resolution as amended was confimed.

Resolution No.4.

Enche' Samah suggested the insertion of the word "padi" instead of "Sawah" in line 2 of section 1.

Mr. Hunter proposed "wet padi" instead of "sawah". This was carried.

The resolution as amended was confimed.

Resolution No.5.

The Chairman mentioned that suggestions from District Officers would be welcomed.

Mr. Hunter said that he was not sure as to what was intended and enquired whether he was right in supposing that the suggestion was to the effect that there should be a vote in the estimate from which the District Officer could pay direct for the seed supplied with the idea of recovering the amount later. He instanced that last year the Agricultural Field Officer got people in two mukims to try short term padi and the only way they could raise money was by charging their land to the Penghulu as security for the loan he gave. If on the otherhand the District Officer had had a vote there would have been no difficulty.

Dr. Tempany replied that the intention of the resolution was the same as supposed.

Mr. Newman mentioned that in the Straits Settlements there was a vote to cover any loss through failure to get back advances.

The Chairman pointed out that under the present conditions of the Federated Malay States, Government would not allow such a procedure if there were no corresponding savings at the end of the year.

Mr. Hunter then proposed that "by a vote in the State Estimates" be added after "service" in line 7 of paragraph 1. This was seconded and carried.

The resolutior as amended was confirmed.

Resolution No.6.

In this connection Dr. Tempany pointed out that everybody recognised that the system of eye estimation in determining yields of padi was not satisfactory. Since the 1930 Agricultural Conference, a new method was being tried in different parts of the Peninsula, but while the results had so far been encouraging they were in some places rather discordant. Therefore he felt it was most important that the matter should be further investigated, so that eventually a satisfactory system could be recommended.

The resolution was confimed.

Resolution No.7.

The Chairman suggested "District Officers, Kuala Selangor and Kuala Langat" instead of "District Officer, Kuala Selangor" in paragraph 1. This was agreed to.

The resolution as amended was confirmed.

Resolution No.8.

Mr. Hunter pointed out that on the face of it the resolutions on tobacco were far too elaborate and tended to go a long way further than anybody would suggest at the present time. He did not know the extent of the tobacco industry in this country, but he did not think that for many years to come the industry would be really worth the suggested expenditure and staff for its development. The tobacco that could be grown was of very poor quality and the stuff could be bought more cheaply outside. Therefore whether it was in the financial interests of the country to put on a heavy import tax was a question on which the Conference was not qualified to give an opinion.

Dr. Tempany explained that considering the extent of the value of imports of tobacco into this country and also of what had been done in other places, it was quite clear that considerable scope for the extension of tobacco cultivation in this country undoubtedly did exist. There was also reason to suppose that quite a considerable part of these imports could be replaced by locally grown tobacco.

He then instanced that in 1920 the Government of Mauritius was placedin a similar position. The value of tobacco imported was about 1¼ million rupees. An inter-departmental Committee, under the chairmanship of the Receiver-General, and including the Collector of Customs and himself was appointed. Eventually they managed to put forward a series of recommendations which were afterwards embodied into law and the Government succeeded in reducing the imports to about Rs. 65,000.

Mr. de Moubray pointed out that in Kinta there were many areas in which tobacco was grown and many varieties were grown, too. The leaves looked excellent and there were no pests, but the critical question seemed to be that of curing. If attention

could be concentrated upon this point, native methods of curing could be improved in a short time and it seemed certain that higher prices would be obtained. In this way revenue could be increased considerably.

The amount spent on repatriating labour from Kinta was roughly $75,000. Last month about 1,800 labourers were repatriated at an average cost of $17/- each. If the price of tin dropped, the bill for further repatriation would be very high.

Mr. Hunter re-iterated that the resolution was going too far and he did not want to be a party to a resolution which in his opinion was unjustified.

Major Stamford Raffles pointed out that, as one insterested in the matter, he did not see any reason why the type of tobacco grown should not be improved further. Personally he was of opinion that excellent tobacco could be grown in Malaya.

The Chairman ruled that the resolution under discussion be held over until item 3 on the agenda was taken up.

Resolution No.9.

Mr. Grist proposed that "are" should be substituted for "must be" in line 2, section 1 and "Netherlands India" for "Dutch East Indies" in line 4.

This was seconded and the amendment carried.

In connection with paragraph 4 the Chairman enquired whether District Officers had any market intelligence services in relation to fruit and other crops as in the case of rubber and tin.

The reply was "No".

The resolution as amended was confirmed.

Resolution No.10.

With regard to the last paragraph of the resolution Dr. Tempany pointed out that the Malay Co-operative Officer, Parit Buntar had been making a survey of the egg production in the District of Krian. He had got supplies of 4,000 eggs a day and could only dispose of 1,750 eggs a week to the Rynnymede Hotel, Penang. The eggs were considered by the hotel as superior in quality to those hitherto obtained. He then enquired if any District Officer could assist the Co-operative Department in the disposal of the eggs.

Mr. de Moubray enquired whether an officer from the Agricultural Department or the Veterinary Department could be trained as an expert.

The Chairman said that he understood there was already a member of the Government service who could take up the work.

Resolution No.10 was confirmed.

Resolution No.11.

Confirmed.

Resolution No.12.

Mr. Cavendish proposed the following amendments:

Paragraph 3 add "Malay Co-operative Officers and " after "and" in line 2.

Paragraph 5 line 3 after "arecanuts" read "from Perak to Penang" instead of "in Perak".

Paragraph 5 last line delete "more important producing countries" and substitute "the other States and Settlements".

The amendments were seconded and carried.

The resolution as amended was confirmed.

Resolution No 13.

Confirmed.

Resolution No.14.

The Chairman stated that he understood that attempts in growing groundnuts at Serdang had not been very successful, but he felt that it might be urged that further work should be carried on. He had observed, he said, that Malay children often had very bad teeth. This had been attributed to the lack of fat in their food and groundnuts had been suggested as a food supplying plenty of fat.

The Chairman then moved the following resolution:

"The Conference hopes that every effort will be made to find methods to grow this crop successfully".

This was seconded by Mr. Williams and Dr.Tempany.

Mr. Williams pointed out that it was a crop which matured in a short time. If the Malays were to replant a certain portion of their land with crops other than rubber, it seemed to him that it was necessary to aim at as many temporary crops like this as possible because it was clear that Malays could get very little out of permanent crops for a considerable number of years.

Dr. Tempany pointed out that Burmese in the dry zones of Burma used to make a tremendous profit from growing groundnuts, and he thought that dry zones in Malaya would be well suited to the growing of groundnuts.

Mr. Allen said that he understood that groundnuts were a suitable crop to grow as a rotation crop with tobacco.

Dr. Tempany pointed out that both tobacco and groundnuts were subject to a common disease, therefore it was possible that groundnuts might carry the disease; otherwise groundnuts would be suitable.

Resolution No. 14 as amended was confirmed.

Resolution No.15.

Dr. Tempany proposed that "quantities of" be added

between "increased" and "sugar" in line 2, paragraph 2.

This was seconded and carried.

The resolution as amended was confirmed.

Resolution No.16.

Confirmed.

Resolution No.17.

The Chairman proposed that "from the viewpoint of small cultivators" be deleted and "with the object of improving the economic position of small cultivators" be substituted.

This was seconded and carried.

Mr. de Moubray said that he was told that a great deal of the information with regard to data should be given by the Land Office. At the present time staff had to be reduced and he could not say how to carry out any further investigations.

The Chairman instanced that one District Officer carried out a survey without additional staff and that in dealing with certain problems he found the report extremely valuable. He added that one should do what one could.

Mr. Cavendish pointed out that in the preparation of the annual report the Secretary of State had laid great emphasis on information relating to the social and economic condition of the people.

Resolution No. 17 as amended was confirmed.

Resolution No.18.

With reference to paragraph 2, Mr. Hunter enquired who was to review the progress made.

The Chairman pointed out that the matter had come up to him before, officially, as a result of the recommendations of the Rice Cultivation Committee regarding the establishment of irrigation Boards. One or two States decided to have Boards, while others held different views. In two districts such Boards had already been started and in reporting the whole matter to the High Commissioner, the Chief Secretary drew attention to the different ideas of the different States and commented in a distinctly favourable fashion on the proposal in Selangor to establish these Boards. It was also anticipated that after a year or so the Residents' Conference might like to have information and then consider which system was better and whether any change should be made.

Mr. Hunter proposed to delete "and that in due course progress made in the various districts should be reviewed". Nobody seconded.

The resolution as it stood was confirmed.

Resolution No.19.

Mr. Hunter said that first of all he would like to congratulate Dr. Tempany for having managed to evolve such a

resolution from the extraordinarily vague discussions which took place the previous day, but he added that pragraph 6 of the resolution required elucidation.

Dr. Tempany explained that in the earlier discussions on fruit it was suggested that the establishment of such depots for the sale of fruit in various populous centres might be considered, hence the paragraph referred to came in only as a definite reference of what took place at an earlier stage.

Resolution No.19 was confirmed.

RICE IRRIGATION POLICY AND COLONISATION OF NEW AREAS.

The Chairman pointed out that this subject had already been discussed and asked if any member wished to ask any questions.

No questions were put by members of the Conference.

TOBACCO IMPORTS AND EXCISE DUTIES.

Major Stanford Raffles pointed out that the fiscal side of the matter was going to be a somewhat difficult one. The Dutch had had for a good many years an excise duty in certain parts of the Netherlands Indies. The Consul General in his letter to the Commissioner, Trade & Customs, had explained the system to a certain extent, but admitted that it was rather complicated. At the present moment a Committee in Batavia was dealing with the question and it was hoped that detailed information could be obtained when the Committee's report was published.

The Chairman mentioned that resolution No.8 was before the Conference.

Mr. Leyh said that his memorandum was written after the views of the Agricultural Field Officer, Province Wellesley and Penang, on the subject had been obtained, and in the light of what he had learnt during the last eighteen months. The information was not obtained through any departmental action and as a result it could only be said to correspond to the local facts.

In 1929 there was little if any tobacco grown in Province Wellesley. Within a period of six months the demand became so great that before the end of the year about 100,000 lbs. of tobacco was actually sold to manufacturers in Penang for nearly $56,000. This involved a loss of 5% of the tobacco revenue to Penang. The position this year was that 10%, but not more, of the revenue would have to be lost, and this loss would be due entirely to replacement by locally grown tobacco of the imported inferior grade leaf used by the tobacco manufacturers exclusively for cigars and cheroots. In some parts of the country cigars were made of entirely locally grown tobacco and in others of imitation Chinese tobacco. As one who had studied the subject he had no doubt that such a practice was a potential danger from a fiscal point of view, though from an economic point of view it was awelcome sign. The feelings of the departments concerned, particularly the Agricultural Department and the Customs and Monopolies

Department, were that local industries should be encouraged to a great extent. Support ought to come from the fiscal side because he knew that steps taken in Penang under the existing fiscal organisation to protect the Penang revenue by a duty on outside tobacco had queered the markets for growers in Perak and Kedah. From what he had seen, however, he was not satisfied that tobacco could be grown to such an extent as to replace the cigarette leaf tobacco which constituted the biggest importation at the present time. One of the large importers was Kedah and yet that State produced probably the largest crop. He then left it to the Conference to decide whether the matter should be taken very seriously in the light of experience. The resolution covered the whole ground and might be accepted without prejudice to anybody in particular.

Mr. Allen said that he found that Malays were very interested in the growing of tobacco in small holdings. It was an attractive proposition in that it was quickly grown and they got quick return for their money, but he urged that it should not be encouraged to such an extent as to disincline them from planting sufficient foodstuffs.

Dr. Tempany explained that Mr. Leyh's remarks raised the question as to the possible production of leaf that would replace imports into this country. Two classes of leaf were required for replacement, yellow tobacco leaf of the type used for making Virginia cigarettes, and leaf as filling for the type known as Burma cheroots. The particular type of yellow leaf for cigarettes would demand the provision of rather specialised forms of curing. The operation was known as flue curing. The leaf would have to be placed in a barn the temperature of which should be rigidly controlled. The process of curing by means of these barns was a bit complicated. Forty to sixty hours would be required and the temperature would have to be maintained, rising successively until a certain stage was reached. The temperature would require to be watched very closely all the time and relaxation of effort during the time of curing would result in the contents of the barn going bad. Further he instanced that when he was in Mauritius attention was concentrated on the question of producing yellow tobacco and it had been found possible to replace, to a very large extent, imports of foreign tobacco by locally grown leaf. From his experience in relation to other matters and from the knowledge he had gained of the mentality of the Malays, he was convinced that the Malays would be able to handle this product safely.

Information had also been obtained from the British American Tobacco Co. Ltd., to the effect that large quantities of yellow leaf tobacco were used to make cheap brand cigarettes turned out in tobacco factories in the Federated Malay States and in Singapore. Quite a considerable percentage of these leaves were produced up the China coast. The Chinese too had their own type of barn. Also in Java and Sumatra barns were operating.

The production of flue cured tobacco in any country depended to a certain extent on climatic conditions. In Mauritius there was definitely one period of the year - December to May - when it was impossible to produce satisfactory tobacco owing to atmospheric humidity which would be so high that satisfactory fermentation could not be obtained.

Owing to curtailment of funds, he added, it had not yet been possible to erect a flue curing barn in this country, save at Serdang where experiments were being tried.

In Singapore the Agricultural Field Officer in con- junction with some Chinese had been able to make experiments which more or less amounted to flue curing and they used in that process a copra kiln. At any rate the results were sufficiently satisfactory to make it clear that under Singapore conditions it would be possible to cure the yellow type of tobacco.

Dr. Tempany further mentioned that considerable importa- tion took place into this country of fillers for the type known as Burma Cheroots. In this connection he instanced that samples had been prepared and submitted to the Chinese manufacturers who stated that they were as good as the best types of Burma and Sumatra fillers. He felt it a pity that the latter quality fillers were imported into this country at the present time. Under these circumstances it was practically certain that tobacco equal in quality to the imported kind could be grown in Malaya.

With reference to the policy advocated by Mr. Leyh in his memorandum to the effect that at present free import of tobacco into a Settlement should not be allowed until locally produced tobacco met the needs of the Settlement concerned, Dr. Tempany said that such a course might possibly be justified as a temporary measure; but he did not think it was fair to bar the Malay States producer from entering the Singapore Market (the principal market in the peninsula) especially as there was no hope of Singapore Island ever being able to produce anything approaching the amount of tobacco necessary for con- sumption by its inhabitants.

Dr. Tempany explained that realising the extent to which there was competition in manufactured and other articles between the Colony and the Federated Malay States and the effects of raising duties, it might be in the interests of the Federated Malay States to export manufactured tobacco to Singapore, but it would be necessary to guard the industry in this country to greater degree than at present. On the other hand the Federated Malay States would be able to consume the whole of what they could produce and therefore he did not feel that this country should look to Singapore and be dependent on it for what could be done here.

With regard to Mr. Allen's point, Dr. Tempany pointed out that when the High Commissioner opened the Conference he drew the attention of the members perfectly correctly to the necessity for the peasantry's cultivating foodstuffs first and dealing with money problems later.

There was however one danger, and that was that if the native peasantry were to grow food crops only, leaving money crops alone, it lay itself open to even greater exploitation than at present.

He then moved an amendment as follows:

"The Conference hears with pleasure the opinions put forward by members of the Customs & Excise Department and trusts that means may be found to overcome any

"difficultics which may exist." to be substituted for "In relation .....overcome them" in paragraph 5.

Mr. Williams mentioned that the Malay community did not at present feed itself entirely and therefore had to find sufficient cash. A large part of the rice consumed by the Malay community in this country has, as statistics showed, to be paid for. Therefore it was essential that money crops, for example tobacco, should be encouraged.

Mr. de Moubray said that the District Officer, Upper Perak, furnished him with details of an economic survey he had carried out and one of the striking points was that with a few exceptions, the individual kampong Malay had been unable to buy clothes for a considerable time for want of cash, though he had no difficulty regarding food.

Regarding the question of tobacco, he gathered that tobacco could be cultivated in rotation with foodcrops and therefore he thought that the exclusion of tobacco under fear that the Malay would not produce enough foodstuffs would be unjustified.

With regard to the possibility of manufacturing tobacco grown in the Federated Malay States, he instanced that when he was in Penang in 1916, a differential duty in the Colony between leaf imported and the manufactured articles was imposed and within a comparatively short space of time Burmese cheroots were being manufactured in Penang by a Burmese gentleman who had fifteen girls working under him.

Mr. Cavendish said that the three vital economic necessities to human beings were food, clothing, and housing. Therefore, he was of opinion that money crops also should be encouraged.

Major Stamford Raffles suggested the addition of "that the fiscal question is such an important one as far as revenue is concerned that a Committee be appointed to consider the whole question".

The Chairman pointed out that the suggestion was implied in paragraph 6.

Mr. South desired the substitution of "The Conference definitely recommends" in place of "It considers....." in paragraph 6.

The Chairman then proposed the following amendments regarding paragraph 6:

Delete "probably" in line 1.
Delete "in" in line 2.
Delete "with possibly the addition of unofficial members" in lines 2 and 3.

Mr. Hunter thought that there was no need to make elaborate provision for the agricultural side before the economic and fiscal sides had been worked out, and therefore he proposedthe deletion of paragraph 3 in toto. The proposal was not seconded.

In this connection Mr. de Moubray asked whether it would not be possible for an officer of the existing staff to be trained in tobacco growing and curing, to which Dr.Tempany replied that that was what the Department had in mind.

The amendments proposed by the Chairman were seconded and carried.

The resolution as amended was confirmed.

AGRICULTURAL SHOWS AND KINDRED EFFORTS.

Initiating discussion on the subject Dr.Tempany drew the attention of the Conference to papers on the subject already circulated. In relation to the first part - Agricultural Shows, the question had been ventilated to a considerable extent in official correspondence, but he thought that at the present time an expression of opinion from the Conference as to the desirability and utility of holding Agricultural Shows might serve a very useful purpose. Notwithstanding the fact that provision existed in the Estimates for holding these Shows, the Department had been faced last year, and to a certain extent this year, with the contention that Shows had better be eliminated as a measure of economy.

On his return from leave he expressed the view that Agricultural Shows, especially at a juncture when agricultural conditions in the country were very depressed, were one of the most valuable methods which could be utilised in the search for additional sources of income, and the general views, too, of the Residents was that such shows were desirable. For his own part the experience he had gained as the result of the Agricultural Show held the previous week, only strengthened his views: a time of depression was the very time to hold a Show. It was the opinion of some members of the service that agricultural Shows had become associated, in the minds of Malays, with festivals and were regarded as occasions for jollification. What matter if such were the case ? It was entirely wrong to suppose that such ideas constituted the underlying principle of an Agricultural Show. He could definitely state that these Shows had a decided effect upon the quality of the produce grown and constituted a very important means of disseminating information and fostering competition. As for wayangs and ronggengs, a good deal can be said in their favour too. They helped to put people in a good humour and keep up the hearts of those who were struggling against adversity.

HOME GARDENS COMPETITIONS.

Dr. Tempany explained that Home Garden Competitions originated in connection with School Gardens. The idea was that school children should be encouraged to start gardens of their own and eventually assist their parents in the cultivation of vegetables for the use of the kampong producers themselves. Such a course would lead not merely to improvement of the surroundings of kampongs, but also to stimulating their whole outlook on life on the part of the village population.

The movement started in Malacca and for the last two years very successful home gardens had been made. Province Wellesley followed suit and the signs of the influence of such gardens were perceptible. In Selangor at the present time there was a wave of enthusiasm for home gardens which was really difficult to cope with.

The Agricultural Field Officer, Selangor, put up a scheme for organising home garden competitions in Selangor. Further, the Principal of the Sultan Idris Training College, Tanjong Malim, had been acquainated with the attempts so far made and the idea underlying the principle. He had agreed to give the necessary support.

In conclusion Dr. Tempany suggested that a resolution from the Conference indicating the desirability of encouraging such gardens would serve a useful purpose, so that the views of the Conference might be circulated to the various District Officers who might help the technical officers of their respective districts and see what could be done to give an impetus to the movement. Personally he felt such a movement would at the present time prove of extraordinary value.

Mr. Cavendish mentioned that the subject was discussed at a meeting of the Agricultural Advisory Committee and the concensus of opinion was that ideal homesteads should be created. It had also been suggested that a small prize might be given to the peasant who had the best homestead in any particular mukim or district, much on the lines of the Railway Department's system of prizes for the best kept station.

Mr. Gammans pointed out that though he did not disagree with the views of Dr. Tempany, he would like to ascertain the views of the Inspector of Schools as to whether Home Gardens should be taken up by the District Organisations.

He understood that in the Phillipines there was a rule that no boy from a rural district would be given his School Leaving Certificate unless he had maintained a home garden. The idea behind that rule was that some knowledge of agriculture generally should be acquired as part of the school curriculum.

The Chairman mentioned that the Inspector of Schools had already mooted the question officially and it was under consideration. In Selangor it had been suggested that it might be un-desirable to refuse a Leaving Certificate to a boy who had not maintained a home garden, but that a first class certificate might be granted to a boy who maintained his home garden and a second class certificate to one who did not.

He instanced that during his tour in Selangor he came across an exceptionally well grown vegetable garden in a kampong and enquired whether the Malay Guru had given any instruction about gardens. The owner replied that no instruction had been given, but added that his son of only twelve years old had been his teacher. In that particular kampong there were only four houses in which vegetables were not grown.

Mr. Hunter agreed that what Dr. Tempany had said about enthusiasm was quite true and he added that at the suggestion of the Inspector of Schools made some time back, Mukim

Committee meetings were held with a view to organising a movement for home gardens. The movement was going forward. Some days back he had attended some school sports and found that prizes were given for home garden competitions.

He went on to say that the raiat preferred Mukim Shows to District Shows because of the expense. The idea of holding District Shows seemed to be hopeless. Personally he would prefer to have shows in different Mukims, say Kuang, Batang Kali, Kalumpang, etc. Such a course would entail an expenditure of, say, $600.00 including $150.00 to $200.00 for prizes. He was not sure if Government would be prepared to assist District Officers to that extent.

Mr. Allen suggested that District Agricultural Shows might very well be held and that exhibits might be accepted from everybody in the District. The exhibits might be shown at three or four centres in the District, if possible, and three or four days consecutively. Also the Rural Lecture Caravan might be made use of to attract the raiat to these centres.

Mr. Blelloch mentioned that in his experience it was the same persons who won the prizes every year, and that therefore the others were dejected. He instanced that kampong competitions were tried in Raub, and marks given for vegetable gardens surrounding the houses, the way in which buffaloes were kept, and so on. The places were inspected on the spot for the purpose, but it seemed to him that only the few gained by these competitions and not the many.

Mr. de Moubray said that he would suggest agricultural shows of finished products. It seemed to him that at this time it was very important to consider methods of improvement in the process of agriculture, particularly the rotation of crops in dry cultivation. However good the produce a man would be able to put up, it did not necessarily follow that he would rotate the crop. Further, the show would act on a few people only at one time, and he thought it would be possible to get more satisfactory results by concentrating on one area in a particular district or mukim and by trying to work on one or two crops which could be improved. In this connection he referred to paragraph 2 of resolution 4 reading "and as soon as promising results are obtained steps should be taken in conjunction with administrative officers to endeavour to arrange for large scale trials by the cultivators themselves if possible" and added that it struck him that such a course would be very valuable, especially because it would be extremely disappointing for agricultural officers if after they had chosen an area they could not get people to follow their instructions. He instanced that dry padi cultivation had made much headway in Kelantan and Besut, and in short when once an idea was established in a given district, it would seem to spread rapidly and people would benefit far more by this practical process than by mere sight seeing at a show.

Capt. Hashim instanced that in 1925 the Dutch authorities had carried out an interesting experiment on the following lines. The peasants of a certain area were informed that the place would be opened on a certain date for competitive cultivation, and that judging would commence within a certain period of that date. The land was plotted out and divided into small blocks. Competitors were allowed to take a plot

each and to start planting. The Agricultural Field Officer was there, but he was not allowed to interfere with the work of the competitors, and he merely took notes of the steps taken by each. Judging was done on the appointed day and those who worked hard got the prizes. He thought that something on those lines, perhaps on a small scale, might be tried in this country.

Mr. South mentioned that since Mr. Hunter suggested Mukim Shows on the grounds of hardship he would go a step further and suggest that small local shows might be held occasionally in conjunction with weekly fairs. If plenty of notice were given as to the date on which the show would be held, he thought there would be sufficient response, because the exhibitors would lose nothing as after the show the exhibits could be sold.

Tungku Yacob said he would support Mr. South's suggestion. He pointed out that such a system worked very well in Kedah. Notice was generally given to people three weeks in advance and on each occasion cultivators came in person, and there was never complaint of people losing money. At these fairs, too, the sale of meat began to increase, and he was informed that on one occasion as many as fourteen bulls were slaughtered. Vegetable cultivation also had increased considerably. Further the Alor Star market had become known as the Malay market because only Malays were allowed to sell there, whereas in other towns the Malays were displaced by other people, and he had made certain tentative rules to help them - Malays could sell anything, other people only certain things. There was, too, a good deal of exchange of goods; people from the coast who brought fish exchanged them for vegetables with people from up country. Sale of agricultural implements was also encouraged, and such implements could now be bought more cheaply. He was trying to work in co-operation with the Forest authorities so that people making ploughs might get wood free.

Mr. Hunter pointed out that it was intended that Mukim Shows should be fairs as well.

Mr. Cavendish remarked that it would help the Film Propaganda Committee if District Officers could let them know when the shows were to be held so that arrangements could be made for visits of the Rural Lecture Caravan, during the continuance of the show.

Referring to the question of the loss of value of produce, the Chairman instanced that when he was in Larut, it was decided to hold a show every year. After the first show, a lot of people complained of loss of fairly considerable sums of money, because they won no prize and their produce was not returned. For subsequent shows, arrangements were made with the local market people, mostly Chinese, for the auction of all produce on the last afternoon of the show at about 4 p.m. The exhibitors were paid whatever amount was received for their produce. Such a system, he thought, might be followed with success.

With regard to Mr. Allen's suggestion to takethe exhibits round the district, the Chairman pointed out that this course would obviate the necessity for buildings. However, with the assistance of the Education Department it would be

possible to use Malay schools as centres for Mukim Shows. The school halls and benches could be utilised, and in this way the cost of hiring buildings could be avoided. He instanced that the Lenggong show was held in the Lenggong school.

With regard to funds, the Chairman said that he managed to find $200 or $300 for Kuala Selangor and Kuala Langat and would be delighted to find another $300. if necessary, for Ulu Selangor. He thought that it would not be difficult to find small sums for District Shows. He added it would be a good thing to organise centres and take round exhibits in conjunction with weekly fairs and that such things might be done by District Officers as they deemed fit.

With regard to films and demonstrations the Chairman said that for the show at Lenggong referred to, the District Officer had collected half a dozen microscopes for showing slides of malarial mosquitoes. An Assistant Surgeon had explained to each Headman the details of work with the microscope, and later in the afternoon two of the Headmen were able to give actual demonstrations and talks on the subject of malaria.

There was also a kiln about 100 yards away, and great interest was taken in that.

The Chairman pointed out that continuity was essential so that the lessons could be relearnt by the raiat every year, otherwise it was possible that they might forget, and fresh attempts would have to be made.

With regard to prizes the Chairman pointed out that at the Larut shows one man from Taiping won prizes every year for certain products. On enquiry it was found that the products were not his. On the other hand one man from Kinta won prizes for his produce every year, and it had a good effect because people began to go to him for advice regarding details of production. If however a man consistently won prizes each year it would be advisable to vary the schedules slightly from time to time so as to prevent this. Whenever possible there should be demonstrations going on during the show. One year a man was taken down to Taiping from the Rubber Research Institute to give demonstrations on budgrafting. He also stressed that it would be advisable to demonstrate some improved methods of cultivation.

Summing up the Chairman said that the main points for elaboration in the resolution were:-

(1) The Conference was in favour of Agricultural Shows to be accompanied by demonstrations, particularly in areas where Malays showed most aptitude.

(2) Weekly fairs should by all means be encouraged.

(3) Regular financial provision should be made by Govt.

(4) Several centres should be selected in each district and exhibits should be taken round.

(5) Shows should be accompanied by demonstrations by the Health, Agricultural and Co-operative Departments.

Mr. Heath said that it would be difficult to take round exhibits because articles would often be perishable.

Mr. Williams said he would like to draw the attention of the Conference to the necessity for encouraging cottage industries as part of agriculture. There did not seem to be any department whose specific business it was to encourage cottage industries. The Co-operative Department no doubt very largely interested itself in any village industry where there was need for co-operative marketing, and the Education Department was concerned largely with the encouragement of industries of that sort through school children, but he urged that Government should give more definite encouragement to and training in village industries generally.

The Conference then decided to incorporate this point also in the resolutions.

Dr. Tempany then read out a letter received from the Officer-In-Charge of Fisheries, Mr. Birtwistle, dealing with the subject of marketing and canning of local fish.

The Conference adjourned for lunch at 1 p.m.

2 p.m.

THE WORK OF THE LAND OFFICERS IN RELATION TO EFFORTS TO EXTEND AGRICULTURAL OUTLOOK.

In opening the above subject for discussion Mr. Williams said that it seemed to him that one of the main duties of the Land Office and the Survey Office was to provide land, and it must be obvious to anyone who had attended the various sessions, and studied the resolutions, that in the ensuing few years a good deal of land would be required - land for further padi cultivation and for various kinds of new crops which were considered at some length at the conference, and he feared it would be necessary to replace that very large area of rubber land owned by Malays which would pass out of their hands into the hands of Chetties at a not very distant date. If the Malays were going to take up land, it seemed essential that that land should be cheap, and the greatest obstacle he saw in the way was the cost of survey.

It was stated in a special publication written by Mr. Bridges of the Survey Department and published two years ago that the average cost of surveying a small holding was $42. He was not quite sure whether that figure included a sufficient amount of what one might call the super overhead charges, the expense of the head office in Kuala Lumpur. Any way it was bad enough. The utmost that Government could recover under the present law was $25 per lot. In addition, that sum of $25 might be and frequently was further reduced to $9 per lot under the Land Rules, and in certain areas to $1 an acre, i.e. $3 to $5 a lot. It appeared clear that neither the Government nor the peasant could afford any longer to pay that sum for surveying a piece of land. Government could not afford to go on with this loss. The peasant certainly could not afford to pay over $40 for taking up land and, he thought, it was necessary to consider whether the cost of survey, or rather the cost of measurement of the land, could not be substantially reduced.

Survey had been described as a pillar of the system of registration of titles and registration of titles involved full proprietary rights. Therefore, full proprietary rights could not be given without actual survey and he was making that statement without fear of contradiction since it had been made before by people far more competent to speak in this matter than he. Therefore, it devolved upon Government to enquire whether it was desirable to reduce that cost of survey by brittling down these proprietary rights.

One of the chief things involved in proprietary rights was the right to borrow money on the security of the land. Had that right of charging been for the benefit of the Malays or the benefit of the country as a whole? Of course, it had enabled the Malays to plant up a very large area of land with rubber. He did not think that Dr.Tempany would contradict his statement that half a million acres of rubber land were owned by Malays at the present time. The right of charge had further enabled the Malays to spend during the last 15 to 20 years a very, very large sum of money in absolutely uneconomic ways. He said he need only instance the numerous marriage and funeral feasts and the purchase of jewellery. The right of charge had now resulted in many of the Malays being owners of no land but rubber land, and likely to lose that at any moment. He therefore suggested that it was necessary to create a new system of title - something between the unsatisfactory temporary occupation licence and a full survey title - to which full proprietary rights would be attached.

He thought it might be possible to select areas of land and put round them an outer ring of survey which need not be enormously expensive and within that are to subdivide and alienate on a basis of measurement without survey. The details of the scheme of course required working out, as to the expense which would be involved and the systems which should be used in the interior measurement. He had seen measurements in Kelantan done by Malay Officers with far less education than the vast majority of Malay officers in this country, and the system there of measurements by Malays had seemed to work out very well.

Attached to any such system there would have to be a large deprivation of proprietary rights, that is to say, there would be no right to charge or lease and on the other hand the land would not be liable to attachment, execution or sale for debts. It would be transferable with the permission of the Collector and on cost shown after consultation with the Penghulu or local headman - something on the lines in Negri Sembilan where customery tensure land was only transferable with the permission of the Lembaga of the District. He thought that such a system would enable the Malays to take up lands <u>quickly and cheaply</u> - both quickness and cheapness appeared to him to be essential in the days to come - and it would enable them to get on with the essential business of planting up further lands, be it with rice or with other crops.

He was glad to see present a number of District Officers of the various States, and he raised the question because he hoped it would be put to the test of criticism both by the land officers and by the survey officers and possibly also by the officers of the Co-operative Societies Department. It might be that the taking of the right of charge might be criticised, that a man must have some way of raising money to develop the land, but he suggested for Mr. Cavendish's consideration that

possibly that difficulty might to a large extent be overcomed by some form of co-operative credit and that the security for the repayment of any loan would not be the land itself (because the land would not belong to the holder), but a system of guarantees by other members of the Society with which officers were familiar in Thrift and Loan Societies.

In conclusion he added that he put forward the scheme for what it was worth.

Mr. de Moubray suggested that as a general principle, the accuracy of survey should depend on the value of the land.

In this country, the survey of land was extraordinarily accurate. In India, on the other hand, survey was inaccurate, but trigonometrical survey was of an extremely high grade. The ordinary settlement in India was done by measuring one line of a holding diagonally, and on that the area was calculated. Besides, there were two different types of land in India. Large areas of land were used for dry cultivation with little coming from them, and for that reason such lands were cheap. Very little produce could be obtained from such lands, and the peasants working on them were extraordinarily poor. In marked contrast to those lands were irrigated lands where padi, tobacco, jute in the northern parts and wheat in the north-western parts were grown. He was only familiar with padi and tobacco areas. In India, owing to survey or lack of survey, there were innumerable cases going before the courts. The obvious need in India was a fairly high type of survey for irrigated land, and for cheap land merely a system of boundaries.

In Malaya it was necessary to have lower proprietary rights because the cheapness of survey did not largely depend on the value of the land; besides the subject of survey was being dealt with in a purely practical manner. The intermediate type of survey suggested by Mr. Williams had been enforced in Trengganu. This system was worked by a member of the Survey Office (present at the Conference) and was extremely successful in the aims that it had. The method adopted was that twelve lots were included within a theodolite survey, with a prismatic compass within the boundaries. The two sets of results had to agree, or the survey was not recognised. Those surveys worked out at from $2 to $3 per lot. Further the cutting of rentices meant probably two extra coolies per surveyor, and getting a demarcator. The great advantage of the compass survey was that it cost less to get an officer, say $20 to $30 a month, whereas the theodolite surveyor would have to be paid say $70.

With reference to Mr. Williams' point regarding the cutting down of proprietary rights for registration of titles, Mr. de Moubray pointed out that under the New Zealand Enactment of 1926 which introduced compulsory registration of titles; there was provision for lots to be endorsed. The endorsement ran indefinitely - possibly meaning that the survey boundaries were open to dispute. Right of charges and so on would be fixed, but disputes were possibly with regard to boundaries.

With regard to the actual ownership by small-holders of land not liable to charge Mr. de Moubray mentioned that to his knowledge various District Officers had been urging such a policy very strongly for some time past.

With regard to the suggestion that in theory full rights involved accurate survey, the Chairman pointed out that in Kedah even without accurate survey, full rights were being enjoyed. The method adopted by the Kedah Government as an intermediate step was to survey the lots demarcated in the old days and to complete title by giving "surat kechil" which was a preliminary title based on the title of the survey. They had full rights for transfer, charge and leases. The system had been working perfectly well and disputes were extraordinarily few. These few arose because of family quarrels on questions of title. It was felt that the surveys were inaccurate in the mathematical sense but the Supreme Court took advantage of the arbitration Enactment and transferred to the Land Office all appeals in the Kedah High Court pertaining to titles. The Commissioner of Lands and himself were arbitrators and their awards were accepted. The demarcations were extraordinarily accurate, but the area actually contained was slightly less than the alleged one.

With regard to the difficulty of distinguishing between values of land in this country, the Chairman mentioned that there was really no cheap, bad land in Malaya. It would be very difficult to say what the value of a piece of land in any area was going to be in course of time. If there was cheap land in Malaya, it was so because the land had been opened up but recently.

The Chairman further suggested that it was really not necessary to attempt to cover survey charges in the alienation of land because Government obtained its revenue by way of land rent, premia, licences, customs, etc. At the same time it should not be assumed that the cost of survey should be brought down in any particular manner.

Mr. Cavendish said that on his first appointment in this country, his first job was to re-settle the southern district of Province Wellesley. He referred to mukim registers and found that people there had not heard of theodolite survey. Plane-table survey had, in fact, been in force in the Colony till 1922. For re-settlement work plans made under the plane-table method were received from the Survey Office but they never agreed. Yet so far as he could recollect there were practically no disputes. The peasant used natural boundaries - a line of pinang or kapok trees was common. He then referred to figures supplied to him by a Penghulu showing what it would cost a man before he started work on land.

Survey fees	$29.00
Premia	$50.00
Rent	$10.00
Total	$89.00

Under present conditions this cost was absolutely prohibitive.

Mr. Gammans then referred to the following points raised by Mr. Williams:-

(1) Reduction in Survey Fees. He said that he thought the Conference was in general agreement with Mr. Williams.

(2) Different Forms of Title. The point whether a different form of title was desirable or not opened up a very big question. There was no doubt that under the present system of land tenure a tremendous amount of land had been charged to the Chetties who were only waiting for the land to be worth something before they could realise their amount. Even where Malay Reservations had been constituted such charges had been taking place in the form of leases and so on, but in view of the lack of really satisfactory data it was impossible to be dogmatic. It was now being asked whether in the light of experience something more was not necessary to protect the Malay. There was a fundamental question and the Malay Reservation Enactment was a precedent so far as the basic idea was concerned.

(3) Meeting of Credit Requirements if a man could not Charge his Land. In this connection Mr. Gammans pointed out that it was not known to what extent it could be claimed that the land charged already was charged for a definite purpose. Here too lack of data hampered the work. Personally he was of the opinion that the area of land in the Malay Reservation which could be claimed to have been charged for definitely production purposes was distinctly on the low side, since a lot of land had been charged to satisfy the needs of social festivals. From the co-operative point of view there were no insuperable difficulties in the formation of a Co-operative Bank in an area where people had not the opportunity of charging their land as security. Besides, personal security which was the basic form of security in all primary co-operative societies which the department hoped to form, could also be taken. In India co-operative credit societies were working quite successfully amongst people who were not the owners in any sense whatever of the land they tilled. They were only peasants.

On the basic point, whether the Malay peasant really required a further degree of protection, he invited the views of some of the Malay members present.

Raja Musa said that with regard to the rule of survey fees, he was in entire agreement with Mr. Cavendish that the rate was too high. At the same time, he continued, a fair degree of accuracy in the survey of land was required so as to avoid dispute. The only way out of the difficulty that he could suggest was that Government should, if possible, collect survey fees and premia over a period of years, together with rent on the land.

With regard to the charging of land by Malays to other people, he pointed out that credit was absolutely necessary before you could produce a type of man capable of looking ahead to his future. Unless a system of credit was established, the danger of Malays charging their land to others was always present. In India the land itself was not charged; the charge was in respect of the produce on the land for a fixed period, after which the owner could get back his land. Such a system was in his opinion much more desirable.

Mr. Kitching referred to the survey fees quoted by Mr. Cavendish and pointed out that two-thirds of the survey fees was frequently remitted, thereby often reducing them to $8.66. If Government thought that fee too high it could be reduced further.

With regard to the question of accuracy of survey, he mentioned that in Trengganu prior to 1925 few surveys were made on behalf of the land owners. Private surveys were made and the occupants had no security of tenure, so much so, that development did not take place to any great extent. However, he was of opinion that it was necessary to have absolute security of tenure.

The position at the moment was that in the Federated Malay States lands were surveyed with a certain amount of accuracy. If Government decided to have a system of less accurate survey, the Survey Department would be quite prepared to fall in with the decision.

Mr. Newboult suggested that Mr. Williams proposal should not be confined to one form of cultivation only. In this connection he referred to the scheme under progress at Panchang Pedena where the layout of the drains was such that the land available for planting padi was in rectangular blocks. Therefore he did not think it would be beyond the possibilities of the local Settlement Officers to mark off with reasonable accuracy whatever lot it was decided to allot. He thought there might be objections to such a scheme, but most of the lots in Kuala Selangor were of a rectangular pattern so as to facilitate any form of prismatic work. The main objections might be with regard to the probability of boundary disputes, but such disputes were always liable to occur especially in wet padi areas. Further, he did not think it would be beyond the power of Government Departments to find some other system of boundary marks. Mr. Cavendish had instanced one form. There were also other kinds which would serve the purpose. The new form of title would complicate Land Office work and it would only be worth trying if the benefits to be derived demanded such a system. Personally he was inclined to think that a simplified form of title would not only be worth while trying but would also mean considerably less work in the long run. Survey should also bear some connection with the value of the land which it was to cover.

Mr. Sewell mentioned that the cost of prismatic compass survey was practically the same as the cost of theodolite survey. With regard to the Panchang Pedena area, the estimate of survey was based on a unit of 1,000 lots of 3 acres each. The estimate excluding overhead charges and materials for use worked out at $3 per acre or $9 per lot. Mr. de Moubray referred to Mr. Newboult's point regarding the nature of survey marks and pointed out that the boundaries of the ancient ancestral padi fields in Negri Sembilan were batas, and provided some mengkuang was grown the position was quite well defined. When he was in Rembau in 1919 and 1920, certain disputes regarding boundaries of berdangs did arise, but they often boiled down to the conflict between the straight line adjoining the boundary marks put in by the Survey Department and the curved lines which existed before. To accept curved lines as previously existing proved perfectly satisfactory.

He had also been told by officers who served in Johore that in the Muar and Batu Pahat plains which were opened up

for cultivation, a big drain had been built to dry up the land. There were minor drains going off at right angles to the big drains and they served the purpose of boundary marks.

With regard to Mr. Gammans' point as to whether Malays would like proprietary rights to be reduced, he thought that all District Officers who put forward their views had considered that charges to Co-operative Societies as distinct from charges to individuals were desirable. In connection with the correspondence relating to the protection of the small-holder he had wondered whether the protection should not extend to Chinese small-holders, and through the Chinese Protectorate in Perak he got into contact with four Chinese towkays in close touch with the Chinese small-holding population. One of the towkays was opposed to protection for the peasant; two were for protection at any cost. On asking if what they really desired was loans for development through land banks or co-operative societies they said they had doubts about co-operative societies, because the Chinese peasant would be too suspicious to join. Two of them were for preventing the peasant from charging his land whether or not loans were available. The fourth was in favour of preventing the Chinese peasant charging the land to individuals provided loans could beraised at low rates of interest from a bank.

Mr. Cavendish said that co-operative societies were being regarded as privileged creditors and instanced that a precedent had already been created by the modification of the Customery Lands Enactment and desired that that principle should be extended throughout the country because co-operative societies did not lend money on the same terms as the ordinary individual.

Enche Tahir thought there would be difficulties before the new system proposed by Mr. Williams could be put into practice. Malays would be suspicious over their rights in the new form of title, and he instanced that some collectors of Land Revenue found it very difficult to get the Malays to surrender their old grants. But if they once realised the advantages of the new system he felt they would agree to the proposed change.

Mr. Hunter mentioned that, even if it would be possible to bring down the cost of survey, he did not think the conference was in a position to recommend a recasting of the present land-laws to meet a temporary crisis. Cheaper methods of survey meant less accuracy, therefore, he did not think it was worth while.

With regard to the restriction of proprietary rights there was no need to fear that as soon as economic conditions improved, chettiars would try to sell the land now charged by Malays. Land in the Malay Reservations could not be sold save to Malays. In the District of Ulu Selangor the majority of the Malays were living in the Malay Reservations and they could not be dispossessed by chettiars.

There was a similar economic crisis in Sumatra also where much of the land was under rubber. If the position of rubber improved, Malays would benefit; if not, rubber lands would go out of cultivation. By introducing drastic changes Government would be instituting an economic and social revolution in this country which would surpass conditions

in Soviet Russia. Furthermore, the Malays would not be so stupid as to learn nothing from past years.

Mr. Williams mentioned that $42. - actual cost of survey - was made up as follows -

$16.40 for field work, $7.60 for computing and docketing , and $18.00 for overhead charges.

He added that it was not right that Government should be prepared to meet a portion of the actual cost. The point he wanted to stress was that Government could not afford to meet the difference between $9 and $42 in the alienation of large blocks of land.

The actual cost of a boundary mark was about 25 cents; the charge made for boundary marks was $1, and the Survey Department did not make a profit out of the sale of stones. It had been suggested to him by a Malay District Officer in Pahang that it might be possible to go back to the old Perak system of 50 or 60 years ago in which they used certain types of small hard-wood trees for different types of dry land and padi land. Planting some sort of such trees or bushes as boundary marks would be cheaper and at the same time as effective or even more effective than concrete marks in that they could not be shifted about. If they were a success 60 years ago for kampong lands and padi lands there was no reason why they should not be an equal success again.

Mr. Sewell mentioned that his estimate was based on 1,000 lots at a time.

Mr. Kitching mentioned that there was a great difference as regards boundary marks of ancient customery land and totally new areas.

Capt. Hashim said that unless the Malay was sure that the land was his, he would not work. He doubted whether the change suggested would produce any good at all.

Mr. Nash pointed out that there was no suggestion for abolishing any of the existing forms of titles. The system proposed would only be an alternative for Malays taking up new land.

The Chairman then explained that the question of limitation of rights had been under discussion for several months. At present there was an Enactment relating to the sale of holdings and since that Enactment could not go forever, it was hoped to find some other way of preventing the recurrence of such a state of affairs which necessitated the enactment. He had been asked by Government to draw up in detail the necessary amendments for consideration by the Residents' Conference and by other administrative officers with a view to limiting the rights on existing titles, as well as on titles which might be issued to future. He added that the discussion which took place at the Conference had been of great assistance and he appreciated the views of those who were in close contact with the problem.

One of the first difficulties was that mentioned by Raja Musa, namely, that some credit must be allowed. In this connection the suggestion was that a creditor should be able

to obtain an attachment of land or of produce when the decree was for not more than $30 as between the creditor and the debtor within a given period, and that particular claim should bar any claims between those two particular parties or persons drawing their rights from them. Therefore it would mean that the small-holder would not get more than $30 from any one particular person.

With regard to reservations, the Chairman pointed out that the Kedah Enactment had been extraordinarily successful. The original enactment was incomplete because it did not apply to existing holdings. Since the last two years the new Enactment applied to all holdings, whether alienated before or after the Enactment. There was a clause which provided that the State Council could resume any land if it had a de facto interest in it. He also mentioned that the Committee which sat last year and reported this year had recommended that a similar clause be inserted in the Federated Malay States Malay Reservations Enactment. This was under consideration.

The Chairman then moved the following resolution:-

(1) That this Conference would welcome full consideration by Government of the present cost of survey and of the necessity for the present standard of accuracy.

(2) The Conference is aware that the question of limitation of rights is already under discussion and expresses its view that the complete freedom at present allowed by law is not in the interests of the small-holder.

Mr. Hunter seconded this resolution which was carried.
Dr. Tempany then read out the resolution in respect of Agricultural Shows and Home Gardens.

Mr. Williams seconded.

Mr. Doscas suggested "local shows" for home gardens. This was carried.

The resolution as amended was confirmed.

In moving the adjournment of the Conference, the Chairman said that it would be a pity if such a Conference was never to be held again. Although he had not been able to attend all the sessions of the Conference, the sessions which he had attended and the resolutions which were passed had satisfied him of the advisability of holding such Conferences. The emphasis laid at the opening of the Conference was on the pooling of the resources of the various Government departments, and he thought there had been no time in the history of Malaya when that was more necessary.

He would always welcome any officer who desired tocome and discuss matters with him. In going round the State he always made it a point to have an opportunity of discussing matters with representatives of different departments. Such a course was essential if work of different departments was to be co-ordinated.

The Conference had been called into being through the

efforts of Dr. Tempany and Mr. Cavendish; therefore it was to them that all the members owed their thanks, firstly for the idea of holding a Conference of other departments with their own, and secondly for the trouble they had taken in carrying this idea to realisation. It had meant a great deal of work, and all those who had come should express their thanks to both these officers for the trouble taken and congratulate them for the idea born in their minds. He then moved the following formal resolution:-

> "The members of this Conference thanks Dr. H.A. Tempany and Mr. Cavendish for having called the Conference into being and for the labour undertaken to bring it to a successful termination, and they also express the hope that such conferences will be held in future whenever there are matters to warrant them".

In seconding the motion Mr. Williams mentioned that when he heard of the Conference he was not quite sure whether it was going to do any real good, but he had entirely changed his view after attending the Conference for three out of four days. He was able to realise that the District Officer was not the only friend of the small-holder and that an enormous amount of work had to be done for the small-holder by officers of the Agricultural and Co-operative Departments, and not only, also, by State Officers and local officers but by the headquarters' staff as well. He said he would also like to add that the members owed a great debt of gratitude not only to Dr. Tempany and Mr. Cavendish, but also to the various officers who had written the various memoranda which formed the basis of the deliberations. He also added a special note of thanks for the secretarial work performed by Messrs Thompson, Blacker and Staynes.

Dr. Tempany, in thanking the Conference both on his own account and on behalf of the officers named by Mr. Williams in connection with the secretarial work, said he was very deeply sensible of the words of appreciation which the Chairman had been good enough to utter. As head of a Federal Department, he felt, and thought Mr. Cavendish felt too, that in making a move for the holding of the Conference there was some risk involved. However he was glad to see that everything so far had gone successfully. He felt that these two organisations, the Agricultural and Co-operative Departments definitely ought to help the peasantry, but that if they were going to do anything they must have the administrative officers on their side. In addition it had been clear to him ever since he had been in Malaya that if the Departments wanted to do anything in the districts it was essential to have the support of the District Officers. Perhaps there had been a tendency to regard the travelling head of a Federal Department as being a little bit of an intruder on occasions when he visited districts, but he hoped that that idea was breaking down. The Agricultural Department had to work in districts through its local officers and the role of Director of Agriculture in such matters was a co-ordinating role. The Agricultural Field Officer's work was to keep people informed and give them suggestions, and if at the same time District Officers were in close touch with the Agricultural Field Officers, the Department of Agriculture would be securing that co-ordination which was essential to progress.

Mr. Cavendish said that on behalf of the Co-operative Department he should like to express his grateful thanks for

the appreciation expressed by the Chairman and others for the small part played by him in convening the Conference. The bulk of the secretarial work was certainly performed by officers of the Agricultural Department and he said he owed a great debt to the Agricultural Department for summarising the position with regard to the various agricultural products grown in this country so that co-operative and administrative officers alike might further their efforts in improving the economic position of the raiat.

He was glad that the Conference was considered to have achieved something and he trusted that the resolutions passed would be circulated and acted on in all Districts. He was also glad to hear that the Chairman would always welcome any officer of any department going to him at any time. As head of a Federal Department he would heartily echo that, and hoped that every efficer would assist Malay Officers and local co-operative officers in the execution of their duties and keep in close touch with them. Officers had to get in personal contact with each other and devise schemes to be put into practical effect without long correspondence and submission to Government through the usualchannels.

Dr. Tempany then expressed his thanks to the British Resident for presiding over the meeting and added his personal appreciation of the great help given to him in relation to the organisation of the Conference.

In thanking the British Resident, Mr. Cavendish mentioned that he thought there was no officer in this country who had the welfare of the local peasantry more at heart. He wished to see him in the chair again to go into problems such as rural industries and rural finance, which were two very big questions and which he hoped would be touched upon and something done before he left Malaya on retirement.

Enche Patch Akhir said that on behalf of the Malays he would like to thank the Chairman, Dr. Tempany and Mr. Cavendish for convening such a Conference to discuss the problems connected with the welfare of the Malays and also the members of the Conference for the sincere way in which they had dealt with the various subjects.

The Conference adjourned at 5 p.m.

6th August, 1932.

(Dr. H.A.Tempany in the Chair)

The Chairman mentioned that it was the last session of the Conference and there were two items on the agenda to be dealt with. He suggested that the simplest way was to take them together. During the course of the Conference a lot had been said about vegetable growing in relation to the Malay kampong side of the question and a good many of the resolutions passed were readily applicable to the question of vegetable growing, but the main point in relation to this question really hinged on the work of the Chinese Market Gardener.

As His Excellency had pointed out to the Conference in his opening address there were in Malaya at the present time a large number of Chinese vegetable growers who in certain respects might be regarded as being the finest market gardeners

in the world. They had the knack, courage and enterprise to open up lands and make them productive. It was also known that strong objection was, with a good deal of justice, raised to some of the methods they employed. It had been suggested by His Excellency that, if steps could be taken to induce these people to modify their practices in relation to manuring vegetables, most of the objections which existed from a hygenic and health point of view would be removed.

The Agricultural Department was the only Department which definitely had an organisation for reaching the Chinese Agriculturists. The organisation was still small, but it was hoped that it would grow. There were already Chinese Sub-Inspectors of Agriculture in Perak, Selangor and Singapore. There was also provision in the Estimates for the appointment of a similar officer in Malacca and it was hoped to post the Chinese candidate, now being trained in the School of Agriculture, Serdang, to Malacca for work in that Settlement after his training was over. Similar provision would also be required for work in Province Wellesley.

The Department had had under discussion for some time past the question of the possibility of substituting other methods of manuring than by night soil and an interesting step had been taken in this direction.

In the Cheras Agricultural Station, situated in the middle of an area of Chinese vegetable gardeners, an area had been set apart for vegetable cultivation by a Chinese market gardener. The arrangement was that in growing crops he should accept the advice of the Agricultural Department and that the use of human excreta be ruled out. It was hoped that the Department would, through this man with the Chinese Sub-Inspector as intermediary, be able to succeed in due course in arriving at modifications of present methods in relation to Chinese market gardening. Further, the experiment would also give the Department a deeper insight into the details of the methods employed by the Chinese gardener such as types of rotation and methods of cultivation, and in this way considerable improvement could be effected.

The Department was also endeavouring to start similar efforts in Penang and Province Wellesley, but was handicapped by the prevailing financial stringency. There was provision in the Estimates for the appointment of a Chinese Sub-Inspector, but owing to the need for economy at the present time, it had not been possible to fill this post. Under the direction of Mr. Mason, Agricultural Field Officer, Penang and Province Wellesley, the Department was endeavouring to get hold of one or two Chinese gardeners and to persuade them to use artificial fertilisers sold by certain companies in Malaya at the present time with a view to seeing whether satisfactory crops could be raised by the substitution of artificial fertilisers for the type of manure at present used. The work had only just been started and it was impossible at present to say exactly in what directions improvement might be possible.

With regard to the marketing of vegetables, the Chinese market gardener was just as much in the hands and at the mercy of rings and combines among his own community as was the Malay market gardener. This prevented his obtaining full benefit from the produce he grew and the solution of the problem must be the same as that of the problem in relation to Malays, that is to say, the formation, if possible, of marketing groups and

organisations for sales so as to break the operation of rings and combines. Nevertheless it would be much more difficult to accomplish anything on those lines with the Chinese than in the case of Malays because the Chinese were much more specialised and much more conservative than the Malays as far as foreign ideas were concerned; and then again there was no organisation for dealing with Chinese on the co-operative side.

The Co-operative Societies Department had, up to the present, concentrated its efforts on the Malay agricultural population, and on the Indian population in so far as the labourers on Estates and Government Departments were concerned, and in relation to Thrift and Loan Societies. On account of the complexity of the problem Mr. Cavendish had not so far been able to see his way to do anything in the case of the Chinese. There were a number of points which enhanced the difficulties therein present. The first was the great diversity of race among Chinese, such as Cantonese, Hylam, Hokkien, Kheh, and it had been impossible to form co-operative marketing of produce which would naturally include more than one race of Chinese in their operations.

Something had been done in Selangor by the Agricultural Department through the medium of the Chinese Sub-Inspector of Agriculture - Mr. Lau Sing Nam, who had had a rather surprising degree of success in certain respects. He had been able to interest groups of Chinese in the work done at Serdang. He had also been able to influence them considerably in the methods of cultivation and preparation of tea and to convince them of the advantages likely to accrue to them from utilising the facilities offered by the Agricultural Department in the provision of pure bred pigs, at reasonably cheap prices, for crossing and other purposes.

The Chairman instanced that he had had an opportunity of going round a Chinese settlement in the neighbourhood of Sungei Buloh about three weeks ago and he was surprised to find the way in which the new strains of pig had penetrated throughout the holdings there. In fact the tendency was for these strains to spread throughout the Peninsula. Such developments seemed to indicate that the problem of influencing the Chinese cultivator to adopt improved methods might not be nearly so difficult in the future as it had been feared. It had been found that means could be taken to establish contact through the Agricultural Officers of their own race, and once contact and confidence had been established and the Chinese saw there was something definite to be gained, they would be only too anxious to take advantage of all facilities available.

Further, Mr. de Moubray had pointed out that it was essential to minimise as far as possible the hardships which the Chinese agriculturists had been suffering at the present time, and in view particularly of conditions in the mining industry it was necessary to try and find some means of retaining the more desirable elements in the country for resumption of mining operations at a later date, otherwise they would return to China and the Government might find it difficult to bring them back again.

With reference to the question of marketing, the Chairman mentioned that in Lower Perak particularly at Kampar there was a large area under Chinese vegetable gardens and it was surprising to note that the produce in these gardens went from Kampar to

Singapore. Latterly, the producers had found great difficulty in selling their produce owing to the operation of rings and combines, so that many of them were being forced to give up vegetable growing. There had been some suggestion to endeavour to organise marketing, but so far it had not been possible to do very much. But if only something could be done in that direction, it would fit in with the programme in other directions and prove of great benefit to the country at large. In addition Chinese methods might well constitute an excellent model for the Malay cultivator. He then invited the views of the Protector of Chinese, Selangor and Pahang, on the subject.

Mr. Jeff mentioned that the Protectorate had little or no information regarding rings which were said to exist in a very strongly organised fashion. He thought that the matter required examination. Quite a number of gardeners sold their produce themselves, and with regard to co-operative marketing he was of the opinion that what the Chinese market gardener wanted, was help in the way of loans to open up land and to meet cost of transport. There would be difficulty in getting them to combine because they would not trust one another, but personally he thought this difficulty could be overcome. On the question of assistance by the Agricultural Department in improved methods of cultivation, personally he did not think there would be any great difficulty in the matter. If the department could show them methods better than their own, financially or otherwise, Chinese would be quite willing to follow such methods.

A good number of Chinese gardeners knew very little Malay and since it would be impossible for the officers of the Agricultural Department to study both spoken and written dialects of Chinese, it was essential to have Chinese Agricultural Officers to undertake work amongst Chinese gardeners.

The department now had a very fine magazine and he suggested that it would be better to extend the scope of that magazine by the issue of local pamphlets on particular aspects. Such a course would benefit both the department and the market gardener.

Mr. Doscas mentioned that the question of providing the population of the country with supplies of fresh vegetables was just as important as providing them with any other commodity. The only people who were endeavouring to meet this requirement at the present time were the Chinese market gardeners. Before discussing the question of marketing and improvement of methods of agriculture, he was of opinion that it was necessary to touch breifly on the question of permanency of tenure and the undesirable manner in which they were moved about from time to time, and the consequent risk of affecting the supply of vegetables.

Fortunately the market gardener was thrifty and industrious and so long as he kept up the supply of vegetables nobody seemed to worry about the source of that supply. The produce of market gardeners went from Kampar to Singapore and from Chemor to Kuala Kangsar, Bruas, Sitiawan, and other places. Permanency of tenure should be afforded to Chinese market gardeners.

Apart from the lines of activity already indicated as having been undertaken by the Agricultural Department, a campaign was inaugurated to endeavour to produce vegetables under more hygienic conditions in the Chinese vegetable gardens at the Chinese cemetry in Kuala Lumpur, and at the moment there appeared to be a very good prospect of unhygienic methods being

supplanted by the more desirable practice of using artificial fertilisers.

Mr. Lau Sing Nam was then asked to give details of the experiment.

Mr. Lau Sing Nam remarked first of all that the Sanitary Board objected to a man keeping pigs but there was nothing to prevent his accumulating night soil in a pit. Prawn-dust and night soil were used as manure. The experiment he was about to describe had been carried out with the aid of 'Malayan Fertilisers Ltd.' and a Chinese market gardener. Two plots were opened and mustard and onions were grown - one bed by the Agricultural Department using artificial fertilisers and one by the Chinese market gardener referred to, who was allowed to grow his bed in any manner he liked so long as he told the department what it cost. The result was that the crop grown with the aid of artificial fertilisers was ready for harvesting earlier than in the other bed. The quantity was also greater by 20% to 25%. When it became apparent that artificial fertiliser could help to produce more, he, Mr. Lau Sing Nam, had organised a demonstration for other market gardeners in that area, to make them realise the economic advantages of using artificial manures, and the result was that in some gardens at any rate night soil accumulation was no longer undertaken. The same system might be applied not only to vegetables but also to other crops such as coffee, tea, fruit, spices, but it would hardly be fair to try and interest a man in growing a permanent crop on land in which he had no permanency of tenure.

The Chairman then enquired about the system of tenure in various areas.

Mr. Lau Sing Nam replied that in Chemor the land was given on Temporary Occupation Licences. Chinese coolies generally came down from mines. They had no money to buy seed, but the middlemen advanced money to pay land rent and to buy seed, and they also had an arrangement with the coolies to buy their produce at their headquarters in Chemor. At the time of his last visit to Chemor he came to know of a market gardener selling sweet potatoes to the middleman at 40 cents a picul; the middleman sold at 60 cents a picul to the stall holder, who in turn realised $1 a pikul. All the produce of market gardeners in Chemor was operated by four middlemen. The gardeners received advances in kind, such as rice and dried fish, from these middlemen who had shops.

Mr. Lau Sing Nam said he would like to appeal to Mr. Cavendish to do something for the Chinese market gardeners in the way of co-operative marketing of produce. In relation to artificial manuring, improved stock, and kindred efforts, the Chinese market gardeners were quick to realise the advantages offered and quick to act upon them. Unless something was done for them it was difficult to see how the market gardeners could get out of debt. The position in Perak was considerably worse than in Selangor.

The Chairman then asked Mr. Simpson to acquaint the Conference with details of his efforts in Selangor in relation to a market garden stall in the Kuala Lumpur market, and to other matters.

Mr. Simpson replied that with regard to the question of a stall he understood that it was a failure because of the trouble caused by marketing rings.

Regarding security of tenure, a lot had been done by Mr. Doscas when he was in Selangor in respect of an area at Cheras - six miles from Kuala Lumpur. When he, the speaker, came down to Selangor on transfer he understood that Chinese were not keen to take up the land because they were not in favour of hilly land for vegetable cultivation. After some discussion the Collector of Land Revenue had now agreed to give the land on 15 years for cultivation of tea and coffee at a rent of $1 per acre per annum. The land was divided into four acre blocks and special conditions had been inserted regarding conservation of soil. There was another area at Kapar, Klang, for which he understood the District Officer was going to give permanent titles at a premium of $35 per acre. The manuring experiments started by Mr. Doscas at the Chinese cemetry were being carried on and about 100 pikuls of artificial manure had been used. Night soil was still used, but efforts were being made to stop that practice. The use of artificial manure had made little headways so far because of the low price of vegetables.

On the subject of the distribution of pure bred boars, he pointed out that sows were usually kept by gardeners although the headman kept a boar. He remarked that one particular boar could often be seen, an awful looking creature, which travelled about the district for hire by keepers of sows. He suggested it would be better if the Agricultural Department could supply the owner with a pure pure bred boar on condition that the boar now kept by him be dispensed with.

In this way much progress could be made.

Mr. Lau Sing Nam mentioned that the squatters' area at the Central Market, though earmarked for market gardeners, was occupied by tradesman, and it was necessary to draw the attention of the Sanitary Board authorities to this matter.

With regard to pigs he mentioned that in each locality there would be a Poland China boar in the care of some dignified member of the community. This boar would travel about the district for service and he would suggest that pure bred boars be supplied to boar contractors instead of to gardeners to replace these Poland China boars. In this way good litters would result in future.

He then gave details of the different methods of manufacturing tea in Sungei Balak. The methods employed were rather primitive and often extraordinarily tedious and requiring a great deal of attention. The first grade tea produced by alternate heating in a pan and "rolling" in bamboo baskets was far superior to the second grade, in the preparation of which hand-rolling was employed. Sun-drying was also employed and yet another method, that of "withering" the leaves. Here the leaves would be spread on the ground for about twelve hours. They would then be collected, put in a basket and shaken. Successive beatings at intervals, frying in a hot pan, rolling in a bamboo frame, further heating and pressing, finally resulted in the production of the dry leaf. It was a method altogether new and not known to the general public.

In Sungei Balak settlement there was an area of about 200 acres under tea cultivation. Each small-holder had from two to five acres, each being worked by himself and his family. Sometimes Chinese women and grown-up children were engaged for plucking. The land concerned was undulating with some steep hills, and it suffered from erosion. After several demonstrations at Serdang to these small-holders, soil conservation methods had been applied with success.

With regard to the vegetable growing area at the Chinese cemetry, the manures used were artificial fertilisers and prawn dust. In Sungei Buloh and at the 4th mile Ampang, night soil was still being side by side with artificial fertilisers. By using artificial fertilisers, the vegetables produced were much better, and it was only reasonable to suppose that in a comparatively short space of time, replacement of night soil by artificial fertilisers would take place. Night soil was generally supplied by coolies at 15 cents a pikul, whereas artificial fertilisers cost $6 per pikul. A report was made to the Health authorities about the sale of night soil and several prosecutions were made.

In reply to the Chairman who enquired whether Chinese could grow vegetables using fertilisers and still make a profit Mr. Lau Sing Nam replied that they could, but the profit would be very small.

Regarding fish ponds he said that the anti-malarial coolies frequently oiled the ponds and the fish died. If this could be stopped there would be more fish ponds. There were a lot of complaints about these coolies extracting money under threat of oiling the ponds.

Encho Tahir instanced that when he was on the Kinta Sanitary Board some time in 1918 the Board tried its best to prevent Chinese market gardeners from using night soil as manure. Though several prosecutions were made and heavy fines imposed it was yet very difficult to control such a practice. When he was stationed in two vegetable growing centres subsequently he found that Chinese night soil coolies were selling night soil to Chinese vegetable gardeners.

In Kuala Kangsar his experience was that the market gardeners took away night soil from the trenching ground. He suggested that if action could be taken by the Sanitary Board authorities, coupled with advice given to gardeners by the Agricultural Department it would help to a great extent to stop the practice of using human excreta as manure.

Mr. Jolly mentioned that a Chinese Sub-Inspector of Agriculture had recently been appointed in Singapore and very good work was being done by him. Undoubtedly the best site for market gardeners was close to the town, but in Singapore efforts were being made to get the market gardens further out. When the gardens were close to the town, a large number of squatters could either dispose of their produce direct to the Municipal market in Singapore or go from door to door, or, of course, they could sell their produce to local shop keepers. The removal of these gardens from the Municipal area meant reducing the supply of vegetables in Singapore for various reasons.

The Chairman enquired why, under these conditions, Kampar vegetables were difficult to sell in Singapore.

Mr. Jolly replied that at certain seasons the market was glutted. Besides, rubber lands were also being reconditioned to plant vegetables. About 200 acres of rubber land had actually been reconditioned by squatters and the whole area was better than the adjoining lands.

Normally not much night soil was used as manure, but the high cost of artificial fertilisers ($6 a pikul) did not make for increased consumption. He mentioned that once he had obtained artificial fertilisers at $3.50 a pikul.

Very little had been done with regard to the distribution of improved strains of pigs. The first batch of pigs from Serdang was received six weeks ago. The distribution was hampered to a certain extent owing to the high cost of freight. The price of a pig was only $15 but the freight came to $13 extra.

The Chairman enquired why pigs could not be sold from their farm by the Singapore Cold Storage Co.

Mr. Jolly replied that the Singapore Cold Storage Co. could not do it for business reasons. Further the type of pork sold by the Singapore Cold Storage Co. was not much liked by Chinese. With regard to the cultivation of pepper and tobacco Mr. Jolly mentioned that pepper was grown only in one area. Tobacco was also grown by a Chinese in an area of about 30 acres. This man knew, thoroughly the Chinese method of curing, and did not care to listen to the new methods suggested by the Chinese Sub-Inspector of Agriculture.

Mr. Mason said that on investigations regarding vegetable growing in Penang and Province Wellesley he understood that night soil was being used to supplement other forms of manure, namely, prawn dust, pig manure and cow dung. His impression was that Chinese market gardenrs within easy reach of the town had an extremely guilty conscience regarding the use of night soil. The Health Officers he understood were determined to prosecute users of night soil as manure, but the fundamental fact to remember was that it was a cheaper form of manure and in his opinion there was no way to stop its use except by legislation. If the use of night soil were stopped the price of vegetables would rise.

Vegetable growing by Chinese had extended in Province Wellesley along the railway lines, often on padi land, because vegetable gardeners could take their produce to Penang cheaply and quickly by train.

Mr. Newman mentioned that in Malacca the position with regard to manure was practically the same as in Province Wellesley. A certain number of prawn dust and fish waste was used but night soil was the main standby. This was collected by vegetable growers and also bought from night soil coolies. The majority of vegetables were grown on sawah land, and in most cases the land was permanently under vegetables. In a few cases vegetables were planted on sawah land during the off season only.

An announcement had recently been made by the Health Officer regarding the substitution of artificial manures for night soil. There were regulations before but they had not been enforced. Attempts were now being made to prosecute

offenders. He suggested it would be of assistance if firms dealing in artificial fertilisers could have depots in the markets because if Government were to enforce the use of manures other than night soil it was essential that they should be easily obtainable.

With regard to the provision of some sort of legislation to regulate the sale of fertilisers the Chairman pointed out that some time back a draft Enactment was put up and after consideration by Residents, Resident Councillors and the Legislative Council, the opinion was expressed that in view of the slump it was necessary to postpone action, but as a result of the discussions at the Conference it did seem to him that a fresh case was emerging for legislation of that description because if a definite move were made by the Sanitary authorities to counteract the use of night soil and cause it to be replaced by artificial manures there should be made available supplies of artificial manures at a cheap rate and there should be legislative control of the composition of these fertilisers so as to ensure that people were getting good value for their money.

Mr. Newman mentioned that it would be difficult to control the price according to the analysis of artificial fertilisers because of the ignorance of the Chinese gardeners.

The Chairman pointed out that the manure merchant with his own formula could defraud the public.

Mr. Newman replied that the Chinese were highly intelligent as regards economic questions, and if the stuff bought the first time proved to be a failure they would not buy it a second time.

Mr. Jolly mentioned that if the quality of the fertiliser was better, less quantity would suffice.

Mr. Baker said that about 2,500 acres of land in the neighbourhood of Labis had recently been alienated to Chinese for market gardening. In Muar and Batu Pahat the chief phases of Chinese agriculture were pig keeping, tobacco growing and market gardening. As regards the first there was one factor peculiar to Johore; pigs were being fed on water hyacinth. Attempts were made to stop such a practice, but without legislation success would be impossible.

Tobacco cultivation had extended to about double the original area, but pig manure and night soil were being used.

Commenting on the question of the supply of land for Chinese market gardening in the earlier days Mr. South mentioned that the gardeners appeared to have settled round all the large towns, and very largely to have developed waste mining lands for the purpose of vegetable growing, possibly because they were then near the markets. As time went on, towns were extended and those gardens had to be moved out to make way for developments of different kinds, and to meet with developing views regarding health. It seemed to him that no definite policy had been agreed to for the whole of any administrative unit in dealing with these gardeners.

In the earlier days one of the reason why the gardeners came in close to the towns was the lack of facilities for transport; motor lorries were not in existence in those days.

Nowadays facilities for transport were better. In Selangor and in Perak too, but to a less extent some of the administrative officers realised that a policy was necessary, and they definitely earmarked suitable areas for Chinese market gardens as close to the towns as possible. There were also instances in Ulu Langat and Kuala Lumpur districts were definite areas had been selected by Land Officers and communities of Chinese market gardeners had been settled there. Although individual District Officers had adopted different policies he thought that one of the first essentials was to have a definite policy with regard to land for vegetable growing.

With regard to tenure, the old tenure was on Temporary Occupation Licence for a year at a rent of $1 an acre. Now it was $3 to $5 an acre. There was absolutely no security of tenure; a man did much useful work to improve the soil and was then moved away. He added he was strongly in favour of giving these gardeners, if they were considered a necessary unit, better security of tenure. The policy adopted in Selangor was to give them Temporary Occupation Licence for three years during the preliminary settlement, and when they had proved to be genuine market gardeners intending to make a living out of that area they were given leases - mostly for 15 years. He said security of tenure would enable them to grow permanent crops. There were different sects of Chinese who were vegetable gardeners to varying extents. Genuine vegetable gardeners were usually Cantonese and Hokkiens. Khehs were mostly mining coolies. They got lands near the mines and raised sweet potatoes for feeding pigs. Sometimes there were modifications and such people became professional vegetable gardeners.

With regard to the existence of various marketing rings, he drew the attention of the Conference to the prices of live pigs and pork quoted in his memorandum already circulated and emphasised that the rings operating in different places prevente the growers from getting a reasonable proportion of the profits.

The provision of stalls were the gardeners could sell their own produce seemed to be open to the difficulty that the regular stall holders might undersell and drive them away.

He then instanced that recently he had noticed from the reports of Agricultural Field Officers two contradictory facts. In Singapore it was difficult to get tapioca refuse refuse to feed the pigs, while in another State there was no market for the refuse.

Mr. Milsum suggested that some boars should be supplied free to a few users to popularise the breed. He also pointed out that an article on pigs at Serdang would soon be published in the Malayan Agricultural Journal, and the Chinese Agricultura Journal and desired that the exact number of pigs disposed of should if possible be ascertained and published.

Vegetables were being grown in Kuala Lumpur at the present time for European consumption using entirely organic fertilisers and the results showed a distinct improvement. If the industry were put in the hands of intelligent Asiatics he thought there would be an extraordinarily good living for them in Kuala Lumpur.

Regarding tea, he said that a lot of applications were coming in for Chinese tea seed and those applications could be

met from Serdang. He said he would like to see some Chinese taking up the cultivation of Indian tea. The Indian variety produced better yield and provided Chinese could take it up experimentally and acquire a taste for it, it would be an advantage to grow that particular variety. The yield of Chinese variety at Serdang were only half of the Indian, particularly the Assam variety, and the crops could be harvested six months earlier.

The Chairman asked if Indian tea would suit the Chinese palate.

Mr. Milsum replied that the question was under experiment. He suggested putting up a small drier in the Sungei Besi area so as to demonstrate to Chinese and Indian growers that tea could be produced cheaply. He had a number of enquiries regarding what area should be planted and whether a small area of, say, 20 or 30 acres would be an economic proposition.

Mr. Belgrave said that he had had no evidence to date which convinced him that artificial fertilisers alone would be generally suitable for vegetable growing. With regard to Mr. Doscas' point he said he would like to remind Mr. Doscas that the soil at the Chinese cemetry area was inevitably, what might be termed "ripe". Further, the use of artificial manures alone would not give satisfactory results even on "ripe" soil. He thought, however, that it would be possible to replace the organic matter in night soil by simple organic material such as green leaves and lallang, but proper experiments which could be controlled and in which the experimentor had no financial interest with regard to the results, were necessary first of all.

Experiments had been tried with regard to blood meal, but this was found to be most expensive. He suggested that further experiments be carried out on waste mining land, so that the Department might be on safe ground regarding the introduction of artificial fertilisers before trying to control the use of night soil by legislation.

Then again it must be remembered that the use of night soil for manuring purposes was a very common practice and was the usual method employed in China, the most densely populated country in the world. In Java, where the water was very unhealthy, the average high class Javanese and all Europeans were innoculated at least once in two years. On the other hand, the average low class peasant was not innoculated, drank this bad water, and developed no attack of disease; and Java was the second most densely populated country in the world.

With regard to the economic side of the question, he pointed out that the price of artificial fertilisers at $6 a pikul was far too high for present times, and it would be difficult to make both ends meet. He pointed out that Malayan Fertilisers manure contained a lot of organic matter, but here again, experiments were necessary. Phosphate was very necessary and there was a large supply of natural phosphate in this country. He would like to know whether it could be arranged to make it available.

Mr. Doscas mentioned that there were plenty of phosphates in Malaya, but they were not used to any great extent. In Kinta they were being sold at 70 cents a pikul and used to the extent

of one ton an acre. He understood that phosphates could not be exported from Kedah where they were being produced.

Mr. Cavendish instanced that some years back a Dutchman who had a depot in Penang got phosphates out of caves for sale. The chemical contents varied tremendously. The phosphates from Elephant Caves near Alor Star were inferior in quality. In Perlis, Government was getting phosphates for the use of local padi planters.

Mr. Jolly informed the Conference that a Singapore firm had a concession regarding phosphates in Kedah and so phosphates could be obtained.

Mr. Gammans said that he agreed generally with Mr. Belgrave regarding the possible substituion of another form of manure for night soil. With regard to the question of immunity from the effects of night soil manure, he pointed out that in Japan night soil was not only used, but was highly esteemed. The use of night soil was common in Japan for padi growing as well as for vegetable cultivation. However, he was of the opinion that if it were possible to do away with this form of manure its abandonment should be encouraged.

Regarding the point made by Mr. Doscas and Mr.Belgrave's comments thereon it struck him that the whole crux of the matter was economic. The Chinese market gardener could not be expected to use phosphates unless it was definitely cheaper for him to do. He suggested that some experiments should be carried out as suggested by Mr. Belgrave both as to the efficiency of the new forms of manure and as to the economic side of its use.

With regard to the possibility of applying some form of legal compulsion against the use of night soil, he pointed out that it was no good trying to attempt anything in the form of more efficient control, because it was not likely to be carried into effect. From the very nature of the work people engaged in the collection of night soil were not likely to be particularly proud of their profession, and would always be on the look out for opportunities to dispose of their product at a profit however small. It would be too much to expect the Chairman of any Sanitary Board to spend part of his time in watching over night soil, and the only possible solution of the problem in his opinion was the adoption of a modern system of sanitation.

So far as the question of Land Settlement was concerned he pointed out that the present system was undoubtedly unsatisfactory because the individuals who brought mining land into cultivation had no security of tenure, and he urged that some definite policy was necessary in relation to vegetable gardens. Personally he thought that some title midway between Temporary Occupation Licence and permanent title would be the solution, because very few vegetable gardeners would be able to pay for cost of survey, premium, and other expenses.

Another possibility to be considered was the allocation of a definite area round each large town for vegetable gardening in blocks, and licences to be given only so long as work was done efficiently. He thought that possibly the Agricultural Department and the Chinese Protectorate could take the matter up with Government and suggest that it be given more consideration than would appear to have been given it in the past.

Referring to the suggestion made by Mr. Jeff that the Co-operative Societies Department might do something in the matter of co-operative marketing amongst Chinese gardeners, Mr. Gammans pointed out that the practical difficulty was that the Department had no Chinese Co-operative Officers and that until it was in a position to suggest an extension of co-operative work amongst Chinese, it would not be possible to organise Chinese co-operative marketing. He added that he would strongly urge that no rush be made in that direction before collecting definite facts. Further, it was necessary to educate the general public in the wider use of vegetables in view of the fact that many vegetables which could be eaten were not eaten.

Mr. Milsum pointed out that the Department of Agriculture had issued a bulletin in 1917 which had been recently republished. If people would care to read it, full information was available concerning several vegetables. In addition, a pamphlet had recently been issued with regard to the cultivation of vegetables by Tamils and it was proposed to translate it into Tamil. He had also suggested to the Tamil Overseer that more attention should be given to the growing of the better varieties of Asiatic vegetables in preference to the vegetables grown in European countries.

Mr. Doscas mentioned that the basis on which the manuring experiment referred to was conducted was strictly a financial one because for every 10 cents worth of prawn-dust used, 10 cents worth of artificial fertiliser was also used.

Haji Eusoff mentioned that in an effort to go into the possibilities of organising a marketing society amongst Chinese at Chemor the main difficulty he experienced was in respect of language. The people were of low mentality and were hopelessly suspicious. The dealers had also made them feel so contended with their present lot that they did not like the interference of outsiders.

With regard to marketing, he found that although rings were in operation dealers entirely refuted the existence of those rings. Big dealers certainly had an understanding among themselves and independent outside dealers had no chance of marketing their produce.

With regard to land settlement, he mentioned that in Ipoh the need had been realised and definite areas had been gazetted for the use of people on Temporary Occupation Licence. They could carry on with their work and they were not deprived of their lands afterwards.

Mr. Cavendish said that he saw a Secretariat paper containing a resolution of the Residents' Conference to the effect that definite areas should be ear-marked in all big towns for the purpose of growing vegetables. That being a point kept in view by District Officers, Sanitary Boards, and others, he doubted whether it was necessary for the Conference to call particular attention to it.

With regard to tenure and co-operative organisation of holders, he pointed out that big allotment holders in the British Isles were organised on co-operative lines by the agricultural organisation. The control of allotments had been taken over by the Ministry of Agriculture and Fisheries.

He did not know the terms of tenure, but urged that the tenure should be such as would not subject the occupant of land to dispossession with considerable loss.

Co-operation amongst Chinese was a matter that was taken up by the Co-operative Societies Department some years ago. The Co-operation Board pressed for the appointment of a Civil Servant and a Chinese Officer and the result of the negotiations between the Board and the Protector of Chinese was that the Department would have to pay a salary of more than $200 per mensem for the Chinese Officer. The matter was put before Government who decided that Co-operation amongst Chinese was a matter to be left alone for the time being with the result that the Department would not at present be in a position to help the Agricultural Department in organising the Chinese on co-operative lines, and it might not be advisable to try to do so except with a trained officer who could understand the methods of organisation.

The root problem was that of finance. It was true that the peasant in this country was not getting the biggest proportion of the consumer's dollar. The bulk of the Consumer's dollar went to the middleman and the distributing agent.

In the East generally, the peasant was quite satisfied with his present position. He was a fatalist and did not seek a way out. Until the way was shown him he would remain in serfdom.

America was trying to see that Agriculture from an economic point of view did not fail. One of the great benefits of the slump was that the world in general now realised that people had to get back to the land for a living and not depend on commerce, and that something had to be done to provide the population with primary products at a price in regard to which the primary producer would be prepared to work for the benefit of the urban industrialist.

The Chairman then asked if Messrs Jeff and Middlebrook would offer any remarks or suggestions in relation to the points already discussed.

Mr. Jeff said that first of all he would like to express his thanks to Dr. Tempany and Mr. Cavendish for having given him the opportunity of attending the Conference. After having heard the views of all the technical officers he was of opinion that first of all information was required as to the quantities of vegetables already grown in the country and the quantities which might be assumed necessary on the basis of the population.

There were imports of vegetables from China and elsewhere, so that, it was also necessary to find out whether such vegetables could be grown in this country commercially so as to yield a profit. If an idea as to the demand for vegetables could be obtained, the question would arise as to the amount of land to be devoted. That, of course, was a matter for investigation by Land Officers.

Then again there were various types of gardeners. To some vegetable growing was only a side line to supplement their main earnings to others market gardening was their whole livelihood. Now this distinction was important and he felt it was

necessary to try to ascertain the relative number of these two classes. He would give the following illustration as an instance of what he meant. In all the States of the Federation applications were being submitted by Chinese for land for vegetable growing, and very great care indeed should be taken in ascertaining whether the applicants really intended to make their living out of vegetable growing or not. About one hundred applications had been received recently for land in the Sepang Valley, and it had been arranged that he should go and interview the applicants. Very few men turned up, it was found later that the applications actually came from a Chinese contractor who put up the names of his coolies; he intended to make use of these coolies as an extra means of profit. It was for this reason that he urged such carein dealing with applications for land for vegetable growing.

With regard to the question of organisation for sale, Mr. Jeff said that further enquiry was necessary to ascertain from growers how much they grew for themselves , and how much for the market. He thought that possibly the best people to undertake this enquiry would be the Agricultural Field Officers. On receipt of detailed information regarding profits made by wholesalers and retailers, the Co-operative Societies Department might be able to devise some means of assisting growers.

The whole problem would depend on how the attempts of officers appealed to the Chinese peasants who intended to make a reasonable living out of market gardens. He then mentioned that the Protectorate would only be too willing to assist the Co-operative and Agricultural Departments in carrying out investigations and in considering what should be the policy to be recommended to Government. If any policy of opening up land for vegetable growing was to be successful, it must depend entirely on the Chinese in this country and whether they could make a reasonable living out of it. If the price of tin and rubber rose, there was no prospect of the new Chinese market gardeners remaining on the land.

Mr. Middlebrook emphasized Mr. Jeff's statement that the officers of the Protectorate would be pleased to do whatever they could to help and he further instanced that Protectorate officers had attended meetings of the Sanitary Board in connection with pork rings at Seremban.

He also suggested that more publicity might advantageously be given to the activities of the Agricultural Department through the Chinese papers (20 in all) all of which, he thought, would insert articles on agricultural topics and he promised that the Chinese Protectorate would assist in the translation.

The Chairman then summed up the whole position in the form of a resolution on the following lines:-

Firstly, the improvement of Chinese agriculture in Malaya for the supply particularly of vegetables to the various markets throughout the Peninsula is of very great importance. There was a tendency to regard it as more or less of an established service, and probably there had not been sufficient realisation of what might happen if an economic crisis interfered with that supply. The effect would be a very considerable inconvenience, if not downright distress and want.

Secondly, in relation to the further organisation, stabilisation, and improvement of the work of the Chinese agriculturist, more investigation into the economic condition of the Chinese grower was essential. In this connection the Department of Agriculture should make use of its existing resources and of the methods proposed to be employed for the collection of economic data.

Thirdly, in relation to work among Chinese agriculturists, successful work can only be accomplished through the efforts of officers of Chinese race. It was also desired to place on record that the work so far accomplished by the Chinese Sub-Inspectors of Agriculture had been of considerable value, and that an extension of this line of work, as and when funds permitted, was extremely desirable. Additional Chinese Officers for other areas where Chinese agriculturists existed in considerable numbers were necessary.

Fourthly, in relation to cultivation of vegetables from a general point of view it was desirable that, if anyway possible, the use of night soil as a manure should restricted, but at the same time, it was important to remember that the substitution of artificial manures for night soil might result in a considerable economic reaction which might enhance the price of vegetables and cost of their production. It was not impossible that insistence in this direction might definitely tend to raise the cost of living. Definite investigations were needed to show what was the most satisfactory way of replacing this type of manure. It was also pointed out that one of the efforts of this type of manuring might be to cause not, indeed, a high rate of mortality among the population, but certainly a general lowering in the vitality and in the efficiency of the population owing to the fact that this form of manuring is the best method ever devised for spreading disease. Further investigation was necessary too, to ascertain the cheapest and the most efficient combination of manures and methods of manuring applicable in such circumstances.

Fifthly, in relation to the position of these vegetable growers it was very desirable that greater uniformity of procedure in relation to the treatment of the areas given out to them for cultivation of this sort should be adopted. There was great diversity of procedure in this respect, and the security of tenure was closely connected with the security of supply.

Sixthly, in connection with the question of marketing and co-operation amongst Chinese, difficultics existed in relation to organisation which did not exist in the case of the Malay raiat. There was abundant evidence to show that rings for controlling prices paid to producers existed and these rings unfavourably influenced the price which the grower received. This was definitely in accord with the evidence that had been adduced in other connections in relation to Malay peasant agriculture, but a suggestion had been put forward by Mr. Jeff that it would be of advantage if further detailed information could be had regarding the way in which these rings operated, and it was suggested that steps should be taken to collect information on this point.

Seventhly, that additional steps were desirable for increased publicity in certain directions. Additional

publicity was required with regard to information concerning the yields of certain Chinese vegetables, and with a view to popularising to a greater extent certain vegetables which are at the present time known only to a comparatively small circle. Further, it was desirable that steps should be taken to ascertain whether in connection with manures it might not be possible to organise the use of local phosphates to a greater extent in manuring.

Lastly, further provision was wanted in the way of providing printed and written instructions on topics of interest to Chinese agriculturists, either by means of printed pamphlets or by publication in the newspapers, and it was noted in this connection that the Chinese Secretariat had promised assistance.

Mr. Gammans then enquired whether experiments in manuring were contemplated.

The Chairman replied that they were.

Mr. Gammans then suggested that a report on experiments would be valuable for further discussion at the next conference.

The resolutions were in general agreed to.

The Chairman then said that he would like to express his thanks to the officers of the Chinese Protectorate for their presence at the Conference and for having participated in the discussion.

The outstanding feature of the Conference, he continued, was that they had had the advantage of both technical and administrative officers participating in the discussions all through, and it was abundantly clear that such association was likely to lead most readily to satisfactory and adequate results.

Mr. Cavendish said that on behalf of the Co-operative Department he would like to add his tribute of thanks to the members of the staff of the Chinese Protectorate for their presence.

The Chairman then thanked all the members for their presence and the Conference terminated at 1 p.m.

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A P P E N D I C E S

A N D

R E S O L U T I O N S.

Appendix I.

IRRIGATION.

The new Department of Drainage and Irrigation came into being from the beginning of the year and up to the present the following active operations have been put into execution:-

(a) A controlled drainage scheme for 15,000 acres at Panchang Pedina, Kuala Selangor district;

(b) Irrigation and drainage of 5,000 acres in the Sungei Manik Area, Lower Perak;

(c) Reconstruction of the damaged spillway at the Krian Irrigation Reservoir;

(d) Dredging in the lower reaches of Batang Padang River to facilitate drainage of potential areas;

2. The following investigations have been completed or are at present in hand:-

(a) Irrigation of a padi area at Triang Ilir, Jelebu and Bentong districts, 4,400 acres;

(b) Scheme for irrigating riverine mukims, Perak River, 2,500 acres.

(c) Further extension of the Sungei Manik area, Lower Perak;

(d) Controlled drainage scheme, Sungei Blat, Kuantan district, 3,000 acres;

(e) Irrigation work at Kubong Karak, Kuantan district, 400 acres as well as a number of smaller schemes for the purpose of budgetting in the 1933 Estimates.

3. As regards the Colony, plans for irrigation work at Chohong are awaiting the concurrence of the Johore Government. The scheme for draining the Bachang Swamp near Malacca, had been deferred by the S.S. Retrenchment Commission, but work is now proceeding apace to complete the plans for the Tanjong Minyak Area which it is hoped to start this year.

4. The work in Province Wellesley has been held up owing to the non-appointment of staff for the purpose. Several reports and estimates have been submitted dealing with the existing water courses and channels to improve water control in Province Wellesley.

Sd. F. G. Finch,

Director, Drainage & Irrigation, S.S.
& Adviser, Drainage & Irrigation, Malay States.

Kuala Lumpur, 15.7.32.

Appendix 2.

DRAINAGE AND IRRIGATION DEPARTMENT, 1933.

PERAK.

SPECIAL SERVICES.

Item.	Service.	Probable cost. $.	Reasons.
1.	Sungei Manik Padi area.	100,000 (Instalment)	To continue works commenced in 1932.
2.	Sungei Chior padi area.	70,000	To irrigate some 800/ 1,000 acres.
3.	Pumping scheme to irrigate riverine areas, Perak river.	75,000	To irrigate some 2,500 of bendangs at Lambor Kanan, Laiang Laiang and Bota Kiri. Maintenance costs will be incurred.
4.	Extension and improvement of Bagan Datoh delta drainage	20,140 (Instalment)	Total estimate 140,000. $11,200 of suggested instalment is on account of new coolie lines.
5.	Syphons and Pipe Gates, Krian Irrigation area.	10,000 (Instalment)	To continue work commenced in past years on a programme of 50,000 - $25,000 voted to end of 1932.
6.	Krian Irrigation Area extension	100,000 (Instalment)	It is suggested that a further 10,200 acres in Krian and Province Wellesley can be irrigated by diverting the Sungei Ijok Ijok and increasing the capacity of the main canals. Perak share 50% of estimate of $375,000.
	Total ...	$375,140	

Sd. F. G. Finch,
Adviser, Drainage & Irrigation,
Malay States.

Kuala Lumpur, 17th May, 1932.

Appendix 2.

DRAINAGE AND IRRIGATION DEPARTMENT BUDGET, 1933.

SELANGOR.

SPECIAL SERVICES.

Item.	Service.	Probable Cost. $	Reasons.
1.	Improvement of Klang River in Kuala Lumpur.	155,000 (Instalment)	It is necessary to fill in the old river bed for health reasons and also to provide a dumping ground and funds for the maintenance of dredging if not voted under A.R. expenditure.
2.	Irrigation dam at 7th Mile Ulu Gombak.	11,500	To replace temporary dams which irrigate 280 acres of land at 4½ and 7 miles Ulu Gombak Road.
3.	Sungei Buloh Irrigation	12,000	600 acres can be irrigated if the existing works are re-modelled and replaced.
4.	Panchang Pedina Padi Area.	125,000 (Instalment)	Works commenced in 1932. The total area concerned amounts to 15,000 acres.
5.	Sungei Burong Padi Area.	10,000	Probably 14,800 acres can be treated and converted into a good padi area. Total approximately $35,000.
6.	Deepening Tap drains, Sabak Bernam Bridle path	5,000	Necessary to improve communication to padi areas in Sabak district.
7.	Clearing Sungei Tinggi	16,000	Necessary to develop padi areas in this little known and remote district. A dredger was purchased in 1926 for exploration work and will otherwise be idle.
8.	Drainage and Bunding of Sabak Bernam peninsula.	50,000 (Instalment)	Probable cost $180,000. Some 30,000 acres of agricultural land are affected by tides.
9.	Sungei Tamu Padi area.	30,000	The irrigation of 400 acres can be effected.

Appendix 2.

DRAINAGE AND IRRIGATION DEPARTMENT BUDGET, 1933.

SELANGOR.

SPECIAL SERVICES.

Item.	Service.	Probable Cost. $	Reasons.
	Contd.		
10.	Sungei Surian Padi area.	4,500	Some 300/400 acres can be irrigated by a permanent dam - tali ayers being constructed by cultivators.
11.	Investigation of the area North of the Sungei Tengi for drainage purposes	3,000	
	Total ...	$432,000	

Sd. F.G. FINCH.

Adviser, Drainage & Irrigation,
Malay States.

Kuala Lumpur, 17th May, 1932.

Appendix 2.

DRAINAGE AND IRRIGATION DEPARTMENT BUDGET 1933.

NEGRI SEMBILAN.

SPECIAL SERVICES.

Item.	Service.	Probable cost. $	Reasons.
1.	Dam at Kampong Solok, Rantau.	3,850	To replace temporary dam irrigating 75 acres.
2.	Dam at Kampong Sungei Machang Ilir	3,850	To replace temporary dam irrigating 200 acres.
3.	Outlets to drains falling into Temiang Channel	1,000	A provision against erosion and land slips into the deep cutting of the river deviation.
4.	Dam at Ampang Jeram	3,300	To replace existing temporary dam and irrigate 200 acres.
5.	Inas padi area	3,300	To adapt a natural dam in place of temporary dams which now irrigate 300 acres.
6.	Tide gate at Sungei Chuah	1,500	Necessary to protect 800 acres from tides.
7.	Triang Ilir Irrigation Scheme	87,000	A portion of the Pelangai padi area in Pahang, the estimated cost of which is $250,000 of which the N.S. share is $87,000 for 1527 acres out of 4,400 acres.
	Total ...	$103,800	

Sd. F.G. Finch,

Adviser, Drainage & Irrigation,
Malay States.

Kuala Lumpur, 17th May, 1932.

Appendix 2.

DRAINAGE AND IRRIGATION DEPARTMENT BUDGET, 1933.

P A H A N G.

SPECIAL SERVICES.

Item.	Service.	Probable cost. $	Reasons.
1.	Pelangai Padi area	100,000 (Instalment)	This is a continuation of the Durian Tipus or Triang Area in Negri Sembilan, the total cost of which is $250,000 and the Pahang share on account of 2,873 acres is $163,000.
2.	Pulau Manis padi areas	12,000	Bunding and drainage to improve existing areas.
3.	Minor padi areas in Temerloh	5,000	Improvements to small areas by constructing water gates, canals and drains.
4.	Paya Besar padi area	23,000	A revote on work commenced in 1932 ($25,000).
5.	Drainage and Irrigation of small padi areas	4,000	To be apportioned to districts with reservation of $1,000 for headquarters.
	Total ...	$144,000	

Sd. F.G. Finch,

Adviser, Drainage & Irrigation,
Malay States.

Kuala Lumpur, 17th May, 1932.

Appendix 3.

Drainage and Irrigation of Existing Potential Rice Land.

A. Policy.

The Rice Cultivation Committee in its Report published in 1931 emphasised the importance of water control in the cultivation of rice, pointed out that to achieve this both irrigation and drainage were necessary and emphasised that, while a combination of a system of irrigation with a system of controlled drainage is the ideal, yet with the abundant and well distributed rainfall normally experienced in Malaya a system of controlled drainage alone is capable of very greatly improving conditions in relation to padi planting.

2. The Committee distinguished between schemes of drainage and irrigation involving large and those involving at most two or three hundred acres.

3. The Committee recommended that the entire carrying out of small schemes by Government should be discontinued and that in future small local irrigation scheme should be carried out by the cultivators themselves with such measure of Government assistance as may be desirable, funds for this purpose being placed annually at the disposal of the Executives in the various States and Settlements.

4. The Committee also recommended that large schemes should be undertaken by Government and that for this purpose a Department of Drainage and Irrigation should be found, executive in the Straits Settlements and Federated Malay States and advising in the Unfederated States. That this Department should be reasonable for suggesting new schemes to Government and also for the upkeep of all established irrigation schmes including in particular the Krian Irrigation Scheme.

5. The Committee recommended that State Irrigation and Drainage Boards should be found for each State and Settlement including representatives of Land, Agricultural and Irrigation Departments.

6. Government has adopted the recommendations of the Rice Committee. The Department of Drainage and Irrigation, Straits Settlements and Federated Malay States, in charge of the Adviser was established at the beginning of this year.

7. The Rice Cultivation Committee stressed the need for close co-operation between the Drainage and Irrigation Department and the Agricultural Department. In persuance of this recommendation an inter-departmental arrangement has been made whereby the Adviser for Drainage and Irrigation notifies the Director of Agriculture when rentices have been completed in new areas under survey, so that soil samples representative of the area can conveniently be taken in land under heavy jungle. As a result of this arrangement soil samples have this year been taken from several areas, among which may be mentioned, Pachang Podina in Kuala Selangor District, Triang Ilir on the boundary of Negri Sembilan and Pahang, three small areas in Ulu Selangor District, one in Port Dickson District, the Bachang Swamp Malacca and land near

Alor Pongsu in Krian. Reports made by the officers taking the samples and by the Soils Chemist on the results of the analyses of the samples have been or will be sent to the Adviser, Drainage and Irrigation to show the suitability of each area for padi cultivation. In some areas in which the Department of Drainage and Irrigation is working the Agricultural Department has already obtained and analysed soil samples which show that the land is suitable for padi cultivation. It is, therefore, assured that the survey of possible padi areas shall include both the possibility of adequate water control and the suitability of the soil for rice cultivation.

8. A Drainage and Irrigation Board has been established for over a year in Krian and recently in Malacca. On both of these the Agricultural Department is represented. The work of the Krian Board has already proved of definite value and has brought to light a number of points concerning both irrigation and agriculture which require improvement or investigation and on some of them work has already been begun.

9. Under the pressure of existing economic conditions padi cultivators are manifesting an increasing tendency to undertake for themselves irrigation, drainage or other necessary works in small areas. Elsewhere it has been suggested that small mukim agricultural committees should be formed, consisting of the Penghulu, the Malay Agricultural Officer, the School Teacher and one or two other prominent Malays. Such committees are capable of giving a lead in the execution by the local population of small schemes for improving or creating water control in existing or potential padi areas and of calling attention to those details in such schemes for which the aid of the local Government might suitably be enlisted.

10. In conclusion it may be mentioned that the Rice Cultivation Committee recommended that experiments in the economics of pumping water for irrigation of padi should be undertaken where possible. Work conducted at the Pulau Gadong Padi Experiment Station during the season 1930 - 31 indicated that the type of pump installed should be capable of augmenting the minimum rainfall records for the locality during any month of the normal padi season, rather than of providing the entire supply of irrigation water theoretically required for the area under consideration. In this connection it may be mentioned that the use of the pump at this station for 15 hours during June last enabled the work of preparing the land to be carried out when without its aid the soil would have been too dry and in consequence the season's operations would have had to be postponed. In some localities delays of this nature may result in heavy losses caused by floods or by wet weather during harvest.

Appendix 4.

IRRIGATION OF SMALL AREAS BY MALAYS.

The water supply to a number of the older padi sawahs in Malaya has been provided by the local population and shows clearly that Malays have a considerable empirical knowledge of water control.

2. When need arises for additional padi land or the extension of an existing area to provide additional food supplies for the local community, more especially under such adverse economic conditions as prevail at present, Malays given local leadership, will construct dams and irrigation channels for themselves without thc aid of Government, or will construct bunds to prevent the ingress of sea water.

3. Instances of such work are fairly numerous, mention may be made of minor irrigation and drainage schemes under-taken in Kelantan last year on the suggestion of the Principal Agricultural Officer; of a dam recently built at Bruas under the supervision of the Agricultural Field Officer, Perak Central and of a bund under construction in the Dindings to keep out sea water, which is being built at the instigation and under the supervision of the Penghulu and the Malay Agricultural Assistant by the local padi growers who gather once a week for this purpose.

4. Dams built for irrigation purposes by Malays are liable to be wrongly placed and weakly constructed; while water courses often start too near the dam and have no guarded entrances with the result that during floods thc dams are liable to break or the rivers to be diverted. With some advice from an Irrigation Engineer, or even an Agricultural Field Officer with experience of Irrigation and of dam con-struction, these faults could be remedied.

5. Thc tendency of Malays, noticeable at thc present time, to undertake irrigation works on their own behalf in small areas suitable for padi cultivation, should, therefore, bc encouraged and guided by local administrative and agricultural officers such as penghulus and Malay Agricultural Assistants and can best be assisted by thc provision of technical advice where needed and of small quantities of materials suitable for constructing permanent or semi-permanent dams. Such a procedurc is far less expensive than thc entire construction of thc irrigation system of Government in a small area and is also likely to prove morc satisfactory, in that it renders thc local population more self-reliant and more likely to attend to thc upkeep of a system which has been constructed by their own labour than they would be to look after a system provided for them.

6. Thc possible utility of mukim Committcc of which thc Penghulu and thc Malay Agricultural Assistant among others are members, needs consideration in this connection as provid-ing thc nccessary encouragement and leadership and being able to apply for necessary advicc and materials for thc execution of any scheme contemplated.

Appendix 5.

COLONISATION OF RICE AREAS.

In the report of the Rice Committee paragraph 102 is as follows:-

" In schemes for the development of new rice areas consideration should be given to the future wants of the forthcoming population both in the way of communications and other respects; we advocate that where such schemes are contemplated they should proceed step by step and should be accompanied by definite provision in the way of administrative officers, who will assist in the settlement of the people on the land. It should be made clear that lands rendered available for rice cultivation will be expected to be cultivated in rice, but in such areas reasonable provision must also be made for house sites and "kampong" lands. Obviously consideration must be given to the future wants of the forthcoming population in the way of communications, reserves for villages, mosques, etc., and the District Officers in their capacity as Land Settlement Officers should be required to give special attention to these settlements and to devote a part of their annual reports to a description of the progress of development of such areas."

2. The preceding paragraph in the report indicates how the omission of provision in this respect adversely affected the Krian scheme. Experience in Krian also tends to show that if this principle had been more fully realised the scheme might have attained a considerably enhanced degree of success.

3. To me it appears that to secure the desired aim it may be necessary to attach to such schemes trained Malay Officers who might be attached to the Departments of Agriculture and/or co-operation and would work in close accord with District Officers on lines to be laid down.

4. At present two points require attention, (1) that the provision of such officers cannot be made at a moment's notice; they will require training; (2) that the duties of these officers will require defining.

5. In view of the fact that work has already commenced on two schemes it seems opportune that some consideration should be given to the question by the conference, otherwise there may be risk of difficulties arising.

Appendix 6.

SUPPLY AND DISTRIBUTION OF PURE STRAINS OF PADI.

With a view to encouraging the use of pure strains of padi in Krian arrangements were made in 1930 with the assistance of the District Officer to ascertain the needs of planters through the penghulus and to convey the padi packed in convenient quantities to pre-arranged centres on definite dates for sale at market prices to applicants. This arrangement gave only moderate results as a number of applicants did not certainly take up their padi when they found that it was not given away free.

Small quantities of pure strains from the various Padi Test Stations are distributed each year to applicants willing to purchase them or change them for equal quantities of local padi, while free distribution of small parcels of seed to approved cultivators for trial and demonstration purposes have also been made.

After serious floods in certain Districts such as the Perak and Pahang mukims large supplies of pure strain padi have been provided by the Department for seed purposes to replace that destroyed by the floods.

The method employed by the Agricultural Field Officer, Malacca, for encouraging the distribution of seed of pure strains of local padi is described as follows:-

Preliminary Organisation.

In the 1929-30 season, in addition to the small replicated trial plots, multiplication plots of all selected strains undergoing final trial were planted at Pulau Gadong Experimental Station, so that whatever strains came out best in the trials, a fair amount of seed of those strains would be available.

The following season, enough seed of the best strains was retained to plant up all available plots at Pulau Gadong, and the whole of the remaining seed of those strains was distributed free in small quantities to selected cultivators - chiefly Penghulus and Sidangs - in all Districts for planting as Demonstration Plots, which at the same time would afford information as to the suitability of these strains to the varying conditions met with in Malacca.

Organisation of General Distribution, 1932-33 Season.

This season general distribution of the multiplied stocks of the best strains was carried out, the organisation being as follows:-

The results obtained on the Demonstration plot last season were circulated to the District Officers and their assistance enlisted in propaganda work. A circular to Penghulus and Sidangs was printed in Jawi in which they were asked to use their influence to promote wide use of improved strains of padi, the advantages of which were summarised, and which announced that seed of these strains was available at 8 cents per gantang, or, for the benefit of those who had seed of kampong padi but no money, would be exchanged for an equal amount of kampong padi. Below followed a list of centres (ten in all) and the date on which the distribution would take place at each, a note to the effect that padi brought in for

exchange must be of reasonable quality, and lastly a request for the Penghulus to arrange to collect seed for those who wanted supplies but could not go to the nearest distributing centre. These circulars were sent to the District Officers for distribution with the request that they be read in the mosques.

The Malay Agricultural Assistants were instructed to find out from each Penghulu the approximate amount of seed required in his mukim, and the amount sent to each centre was largely based on this information. The seed was sent out by lorry, the pre-arranged amount being dropped at each centre prior to or on the day of distribution as most convenient.

The actual distribution was done by the Agricultural Field Officer or the Malay Assistant in charge of the District. The cost of transport was not charged, but a uniform price of 8 cents fixed for all centres.

The method outlined proved satisfactory, and the success achieved is largely attributable to the co-operation of the District Officers, and through them the Penghulus.

It is intended that in future the Padi Test Stations and Plots should serve as centres for distributing seed of pure strains, the seed being either sold at local market prices or exchanged for equal quantities of local padi.

Pure strains have been gaining in popularity of recent years. The increase in the number of Test Plots which provide demonstrations of their merits has assisted in making the strains better known, while the lecture given during the tours of the Rural Lecture Caravan on the specimens carried have also had a useful effect.

The important points for successful distribution of pure strains appear to be:-

(i) Practical demonstration of their superiority to as many growers as possible by means of the Padi Test Stations and small plots grown by approved local growers.

(ii) Propaganda by means of the Rural Lecture Caravan and leaflets such as were used in Malacca.

(iii) Co-operation of District Officers, Penghulus and Ketuas.

(iv) Carefully organised and well advertised arrangements for distributing seed at definite centres on definite days in parcels of convenient size and in accordance with local requirements as previously ascertained.

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District Officer,
Raub.

Appendix 7.

POSSIBLE CHANGES IN SYSTEMS OF PADI CULTIVATION.

(a) Intercrops on Padi Land.

It is considered that the system which allows a bendang to lie fallow during the period of the intercrop should be definitely recognised as wasteful, and it is desirable to consider -

(i) What, if any, crops can be grown during this period;
(ii) What, if any, steps are practicable to give demonstrations of intercrop cultivation on Padi Test Plots.

The following crops have been suggested:- maize, tobacco, gingelly, gourds, pumpkins, long beans, cucumbers, sweet potato, soya beans, groundnuts, ladies fingers and loofahs. The possibility of maize encouraging stem borers requires consideration.

An experiment with certain crops is being carried out at Bukit Merah Padi Test Station on an area of ¾ acre, which has been divided into 1/20th acre plots with 8 beds in each plot. The crops planted are - long beans, ladies finger, loofah, groundnut, cucumber, soya bean and sweet potato (2 varieties). Local Malays have shown an interest in the experiment and recently a number of them planted their fellow padi land with quick maturing food crops. One cultivator stated that he was making 70 cents per day out of these crops.

Some Chinese padi cultivators in Malacca are now growing vegetables and tobacco on padi land in the off season.

It has been suggested that small trial plots should be established at various Padi Test Plots to test the effect of intercrops on soil fertility and subsequent padi yields.

Difficulties to be anticipated include:-

(i) The difficulty of establishing dry land crops in stiff bendang land without ridging.

(ii) Dry weather during, and following, the padi harvest so that the fallow period with sufficient water may be too short to allow the crops to ripen before the land is required for preparation for padi planting.

(iii) Lack of suitable land in some districts owing to drainage difficulties.

(iv) Damage by buffaloes and poultry.

(b) The growing of short term strains.

An interseason padi crop of short term strains is being grown experimentally at the Glugor Test Plot, Penang. At Kuang and Kajang plots in Selangor all the available short term strains are being grown in order to discover which of them are likely to be suitable. In Selangor an interseason crop is being grown this year in some districts, but mainly with a view to readjusting the displaced planting season to suitable weather conditions.

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Appendix 7.

In Perak South there has been a demand for short-term strains - e.g. Radin Siak, Padi Acheh, - for the purpose of obtaining two crops in twelve months.

Enquiries are being made with a view to obtaining Javanese varieties - e.g. Padi Lampong and Udang Ribun - which are said to be ready for harvest 90 days after sowing.

(c) Rotation with pasture as practised in Italy.

In Italy, rotation with rice, wheat or other grain or grass is practised, and it is suggested that, in Malaya, the question of rotation of rice, maize and pasture land (the pasture to occupy the land for a period of two years) should be considered.

Information is needed as to whether it would be preferable to encourage natural establishment of suitable grasses in sawahs, or whether it would be necessary to plant the land with grass cuttings or else to sow grass seed. The cultural and manurial operations likely to assist in the formation of pasture land require to be studied.

An ecological study of the plant associations occurring in sawahs is also indicated as necessary. In some localities such as Kedah where there are wild expanses of level padi land, irrigated by rainfall only, it will be found difficult to keep the pasture fields dry enough during the padi season to permit the growth of suitable grazing grasses, and semi aquatic or aquatic sedges, rushes and grasses of low food value are likely to become established.

It seems obvious that the success of any such scheme of rotation is dependent on the possibility of adequate water control.

An experiment in rotation is being laid down at the padi experiment stations, Pulau Gadong, Talang and Bukit Merah and it is hoped to utilise the slimed plot at Kamunting also in this connection.

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Appendix 8.

Rice.

Net Imports of Rice into Malaya for the past four years were shown as below:-

	White Rice.		Cargo Rice.		Total Rice.	
	Tons.	$	Tons.	$	Tons.	$
1928	494,505	60,378,957	29,265	2,313,815	523,770	60,692,772
1929	524,958	65,251,133	26,703	2,178,496	551,661	67,429,629
1930	566,180	62,370,820	25,575	1,934,342	591,755	64,305,162
1931	493,540	33,975,470	23,292	1,144,689	516,832	35,120,159

The net imports of padi into Malaya in 1931 were 1,398 tons, valued at $55,860. The average annual net imports of padi for the preceding 8 years were 3,672 tons valued at $257,703.

In addition, the net imports of rice meal in 1931 were 109,786 tons, valued at $2,984,497.

Approximately 50 per cent of Malaya's gross imports are from Siam, 43 per cent from Burma, and 5 per cent from French Indo China.

The average area annually planted with padi for the ten years 1921-1931 was 592,919 acres of wet padi and 69,844 acres of dry padi giving a total average annual area of 662,823 acres.

The area planted and yields obtained in the season 1930-31 were as follows:-

2.
Appendix 8.

Area of Land planted in Malaya and yields padi 1930-31.

	Wet		Dry		Total.	
	Acres.	Gantangs.	Acres.	Gantangs.	Acres.	Gantangs.
F.M.S.						
Perak.	85,540	21,923,000	10,690	1,502,000	96,230	23,425,000
Selangor	19,530	2,835,000	2,240	423,000	21,770	3,258,000
Negri Sembilan	29,590	7,189,000	460	59,000	30,050	7,248,000
Pahang	28,440	3,758,000	2,440	291,000	30,880	4,049,000
Total	163,100	35,705,000	15,830	2,275,000	178,930	37,980,000
S.S.						
Province Wellesley	32,290	15,673,000	Nil.	Nil.	32,290	15,673,000
Penang	4,620	1,488,000	"	"	4,620	1,488,000
Dindings	270	Nil.	250	16,000	520	16,000
Malacca	19,920	9,132,000	"	"	29,920	9,132,000
Total	67,100	26,293,000	250	16,000	67,350	26,309,000
U.M.S.						
Johore	7,290	585,000	7,370	1,107,000	14,660	1,692,000
Kedah	196,930	71,825,000	9,670	1,620 000	206,600	73,445,000
Perlis	37,010	8,989,000	1,990	90,000	39,000	9,079,000
Kelantan	111,460	20,262,000	63,950	3,248,000	175,410	23,510,000
Trengganu	20,180	3,186,000	5,610	766,000	25,790	3,952,000
Total	372,870	104,847,000	88,590	6,831,000	461,460	111,678,000
Total Malaya	603,070	166,745,000	104,670	9,122,000	707,740	175,867,000

On a basis of 420 gantangs of padi equal to 1 ton of padi and a conversion padi at 62 per cent rice, the estimated production of rice in Malaya for the padi season 1930-31 is as follows:-

Production of Rice in Malaya 1930-31.

	Wet tons.	Dry tons.	Total tons.
F.M.S.	52,012	3,459	55,371
S.S.	38,813	24	38,837
U.M.S.	154,774	10,084	164,858
Total	245,599	13,467	259,066

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Appendix 8.

Production 259,066 tons and net imports 516,832 tons gives a total apparent consumption of 775,898 tons of rice, or a consumption per head of Asiatic population of 74.7 gantangs per annum (based on 1931 population census).

The average Malayan yield per acre of wet padi was 276 gantangs and of dry padi 87 gantangs.

On the basis of 1930-31 season figures therefore in order to render Malaya independent of imports of rice the yield per acre on existing wet padi lands must be raised to an average of 540 gantangs per acre, or on present yields the area must be increased by 577,644 acres to a total of 1,180,700 acres (neglecting the produce of dry land cultivation).

2. Prices. The average retail market prices in cents per gantang of No. 2 Siam rice in 1931 were - Singapore 32, Penang 35, Malacca 31. The average annual prices from 1923-1930 inclusive were Singapore 53, Penang 56, Malacca 53.

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Appendix 9.

COCONUT PRODUCTS.

Trade. The Malaya imports and exports of copra in 1931 were as follows:-

Imports 87,026 tons, valued at $6,730,685.
. Exports 187,835 tons, valued at $16,408,361.
. . Net export 100,809 tons valued at $9,677,676.

The declared trade value of imports was thus $77.3 per ton and of exports $87.3 per ton.

The difference in value of imports and exports is accounted by the fact that the former are usually low quality copra used mainly in copra oil mills in Malaya and to a lesser extent in grading down the Malayan product.

The average annual net export of copra and coconut oil for the past three years was as follows:-

Net exports of copra and coconut oil from Malaya.

	Copra		Coconut Oil.	
	Tons.	$	Tons.	$
1929	112,429	19,662,622	8,725	2,507,279
1930	102,014	15,307,511	9,473	2,359,357
1931	100,809	9,677,676	9,909	1,637,591

While the net exports of copra show a slight decline (1929 was a year of exceptional crops), this decline is compensated for by the increase in net exports of coconut oil.

There is also an export trade in fresh coconuts. The net exports in 1931 were 10,468 tons (approximately the average annual net export) valued at $243,058.

Thus net exports of coconut products from Malaya in 1931 were valued at $11,558,324, while the average annual value of net exports for the preceding 8 years was $21,794,120.

2. Markets. Based on the 1930 figures, the most important market for Malayan copra is the Netherlands which took 62,000 tons. Other important buyers were Germany 31,000 tons, United States of America 27,500 tons, France 23,000 tons, Denmark 16,000 tons, Norway 9,000 tons, United Kingdom 7,500 tons, Spain 7,000 tons, Sweden 5,000 tons.

The chief buyers of coconut oil in 1930 were Sumatra 4,500 tons, China 2,300 tons, Siam 1,600 tons, Hongkong 500 tons.

3. Areas. The area under coconuts in Malaya in 1930 was nearly 600,000 acres of which nearly 249,000 acres were in the F.M.S., 82,000 in the S.S. and 278,000 in the U.M.S. (Johore 165,000 acres).

Of the total area under coconuts, approximately 125,000 acres are contained on estates of 100 acres and over, and 435,000 acres on holdings of under 100 acres each.

4. Production. The net exports of coconuts and coconut products from Malaya is no indication of the total value of such products harvested annually, for there is a considerable local consumption of fresh coconuts, coconut oil for cooking, lighting, toddy and amongst Indians coconut oil is used on their bodies. The local consumption of coconut products, stated as its equivalent in nuts is 459,720 nuts, which at 2 cents each is worth $9,149,400.

It is possible therefore that in 1921, the value of coconuts and its products harvested in Malaya was worth $20,500,000 while in a year of normal prices, based on the previous 8 years, the value would be about $31,000,000.

5. Prices. The average annual market price of copra in Singapore hasvaried since 1922 from $12.20 per picul for sundried to $5.09 in 1931. The "mixed" quality commands a price generally from 30-40 cents below that of sundried.

6. By-products. (a) Poonac. This is the residual cake after expression of the oil and is a valuable feeding stuff for animals. While no figures exist of the total production in Malaya, it is estimated that it amounts to about 10,000 tons per annum almost all of which is sold locally. At present prices this quantity is worth about $300,000.

(b) Coir Cordage. Not manufactured locally, but it is significant that annual net imports into Malaya are approximately 1,500 tons, valued at about $250,000.

(c) Coir Fibre. There is no local industry in fibre. Annual net imports of this fibre exceed 100 tons valued at about $18,000.

(d) Mats and Matting. Statistics are not available of the quantity and value of coir mat and matting imported into Malaya. The figures given under this head includes also mats and matting made of other material. The annual net imports of mats and matting of all kind imported into Malaya averages 1,300 tons valued at $523,000.

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Appendix 10.

THE COPRA KILN AT SABAK

by

A.T.Newboult,
(District Officer, Kuala Selangor)

The kiln was started about September, 1931, by fourteen Malays clubbing together and paying $10 each. This was sufficient to build the kiln and also most of the shop next door which they regard as an essential appendage. I have persuaded them to keep the two separate in their accounts and this is the explanation for the item in the asset side of the balance sheet.

2. The main idea of the members was to rid themselves from the Chinese small traders and to have a fund from which they could borrow for their general living expenses which hitherto had been done from the kampong shop. Each member was to sell his nuts to the kiln and be paid in cash at the current market rate. After drying the copra was sold and the money thus obtained belonged to the kiln, the members themselves not getting any direct profit from the drying of the copra.

3. Up to the present the management of the kiln seems to have been very satisfactory for an initial attempt. I attach a table showing the costs per 1,000 nuts which I am informed compare favourably in many respects with estate production figures, the one detail in which there is special room for improvement is the making of first grade instead of second grade copra.

4. At the present moment there is a big copra "war" on in Sabak, both for nuts and copra. One European entered the copra buying field, thus ensuring lively competition and a high price for copra. The kiln not having to concentrate altogether on profit can and does pay a high price for nuts bought, and as it now buys nuts near Sabak.

5. Since the close of the last year, three new members have joined, (but they had to pay $15 on entrance) the kiln has been improved in the light of the experiments made by the Agricultural Department in Jeram and as many nuts are being bought as the kiln can deal with. Non-members may sell their nuts to the kiln and thus enjoy the advantage of the good price paid, but cannot borrow from its funds. The average weekly production of copra is 40 piculs, the kiln has its own loading stage and has cleaned a drain, by which the copra is taken by water direct to Sabak. It is now proposed to lay down a cement platform for sun drying and concentrate on the production of an improved grade of copra.

6. Fortunately the members kept some form of accounts from beginning and it was possible to incorporate these in a much more simple system. The accounts are complete and are now entered and checked daily, and the periodic profit and loss accounts and balance sheet can be taken out by the clerk.

7. At one time loans were tending to swamp the profits and they had to pass a rule by which no member could borrow more than $10. at one time. These loans are settled on the occasion of the next sale of nuts to the kiln. As an indication of the use which has been made of this money one has only to turn to the accounts. In six months $870.78 has been lent out and $708.86 has been repaid. In some cases the amount outstanding

has been left for 3 or 4 months, but an effort is being made to reduce the lending until such time as a large reserve has been built up.

8. It is hoped that two more kilns on these lines will be started near Sabak, but unfortunately no one in Kuala Selangor has been enterprising enough to get one going here. There is no doubt that it is of great use not only to the members, but to the general community as it starts competition and this raises prices, whereas individual working leaves the Malay more or less in the hands of the buyer. But unless the owners themselves are keen on it it is useless trying to start one.

Working Account - 1st January to 30th June, 1932.

Nuts bought	$2118.12	Copra sold	$2723.49
Upah	367.90		
General Expenses	50.81		
Gross Profit	186.66		
	$2723.49		$2723.49

Profit and Loss Account.

Transferred to Reserve Fund	$60.00	Gross profit from working account	$186.66
Depreciation on kiln	60.00		
Net Profit	66.66		
	$186.66		$186.66

Balance Sheet as at 30th June, 1932.

Liabilities.	$ Cts.	Assets.	$ Cts.
Capital	140.00	Kiln as at 31.12.31 80.	
		Less Depreciation 60.	20.00
Reserve Fund	60.00	Loan to shop a/c. as at 31.12.32 47.30	
Profit as at 31.12.31 168.62		From 1.1.to 30.6.32	
From P. & L. A/c. 66.66	235.28	44.16	91.46
		Loans outstanding at 1.1.32 5.00	
		Lent from 1.1.to 30.6.32 870.79	
		875.79	
		Less repaid from 1.1.32 to 30.6.32 708.86	166.93
		Cash in hand	156.89
	$ 435.28		$435.28

Appendix 10.

Summary for period September, 1931 to June 30th, 1932.

	From September 1931 to 31st December, 1931.	From September 1931 to 30th June, 1932.
Total nuts bought	83,600	213,500
Total price paid	$1,110.06	$3,298.18
Average price per 1,000 nuts	13.40	15.45
Total "upah"	218.28	586.18
Average upah per 1,000 nuts	2.61	2.59
Total sundry expenses	11.13	59.44
Average sundry expenses per 1000 nuts	.13 ¢	.29¢
Total amount of copra sold	353p. 22 k.	906p. 50 k.
Total receipts from sale of copra	$1,508.09	$4,231.58
Average price of copra sold per picul	$4,270.00	$4,668.00
Average production of copra per 1,000 nuts	4p. 22.6k.	4p.24.5k.
Average receipts per 1000 nuts	$18,045	$19,816

Costs per 1,000 nuts	$13.40	$15.45
Upah " " "	2.61	2.59
Sundry expenses per 1,000 nuts	.13¢	.29¢
Profit per 1,000 nuts	1.90	1.49
Average receipts per 1,000 nuts	$18.04	$19.92
Percentage of cost of nuts to price of copra	74.2	77.9

Appendix 11.

T O B A C C O.

Imports and Exports of Tobacco in 1931 were as follows:-

	Imports.		Exports.	
	lbs.	$	lbs.	$
Cigars	144,871	234,047	64,757	51,871
Cigarettes	5,328,834	12,677,680	1,825,287	2,410,584
Manufactured	6,008,591	3,159,770	1,518,475	940,145
Unmanufactured	6,381,044	1,904,704	90,076	19,367

The net imports in 1931 and the average annual net imports and value for the years 1923 - 1930 inclusive are stated below.

	Net Imports 1931.		Average Annual net Imports for years 1923-1930.	
	lbs.	$	lbs.	$
Cigars	80,114	182,176	103,924	283,805
Cigarettes	3,503,537	10,267,096	6,595,449	16,514,242
Manufactured	4,490,116	2,219,625	12,186,834	5,965,087
Unmanufactured	6,290,958	1,885,337		
	14,364,725	14,554,234	18,886,207	22,763,134

The countries of origin of gross imports in lbs. of tobacco in 1930 (1931 figures not yet available) were as follows:-

	Cigars.	Cigarettes.	Manufactured.	Unmanu-factured.
United Kingdom	792	5,599,575	276,606	
British North Borneo		142	140	4,550
Sarawak		271	1,402	
British India & Burma	147,523	4,342	67,575	4,309,951
Ceylon		215	400	3,702
Hongkong	16,405	246,222	1,693,614	
Australia			300	
Union of South Africa		15	1,383	
Other British Possessions	1,349			

2.
Appendix 11.

	Cigars.	Cigarettes.	Manufactured.	Unmanu-factured.
Total British Possessions.	166,069	5,850,780	2,041,420	4,318,203
Foreign countries.				
Belgium		138		
Denmark	222			
Germany		1,232		
Netherlands	3,207	1	81,510	
China	430	1,703,450	2,925,266	217,561
Egypt		5,993		
French Indo-China	320	1,018		
French China	1,000			1,150
Japan		15		
Netherlands India				
Borneo		489	70	
Java	22,068	2,238	294,814	124,712
Sumatra	317	2,296	974,082	118,591
Other Dutch Islands				
Philippine & Sulu Arch	41,790	9,526		50,199
Siam		5,009	1,494,564	15,776
United States of America	1,027	1,007,106	105,059	2,940,213
Total foreign	70,381	2,738,511	5,876,091	3,468,202
Total	236,450	8,589,291	7,917,511	7,786,405

The following table shows the area cultivated with tobacco in Malaya during the past two years.-

Federated Malay States	1,001 acres.
Straits Settlements	94 "
Unfederated Malay States	304 "
	1,399 acres

Appendix 12.

TOBACCO CULTIVATION, MALAYA.

1. Estimated Area Planted. As tobacco is a crop which matures in 3 to 4 months the actual area planted changes from month to month and is quickly influenced by a local rise or fall in price. The available information indicates that the total area planted in recent months in the Federated Malay States, the Colony, Kelantan, Kedah and Johore is in the proximity of 1,500 acres. Of this area at least half is in Perak; about 200 acres are in Kedah; areas varying between 100 and 150 acres each occur in the Settlement of Penang and the States of Selangor and Pahang; Negri Sembilan has some 20 acres, while Kelantan, Malacca, Johore and Singapore have only small experimental plots.

2. Average size of holdings. These vary from a few plants only up to as much as 10 acres. The majority are between 1/40th and 1 acre, but two Indian owned holdings of respectively 3 and 6 acres are known in Port Dickson District and there was at least one area of 10 acres in Selangor.

3. Nationality of Cultivators. The cultivators are for the most part Chinese, many of whom, as in Province Wellesely, are market gardeners who grow tobacco in rotation with vegetables. Others are Malays or Javanese, especially in Southern Perak, Selangor and Pahang, while there are also a few Indian growers, mostly Tamils. Only the Tamils and a few of the Chinese have a knowledge of the proper method of curing cheroot tobacco.

4. Types of Tobacco Grown. The commonest type appears to be that known as "Deli" from Sumatra. It seems probable that it is the same as the type commonly grown in the kampongs of Sumatra. If so, it is according to information supplied to me by Mr. Eu Kee Eng or rather poor quality, available in large quantities on the local market and of little value for cheroot making except as an inner wrapper. The popular type in Kedah and Province Wellesley known as "Baling" or "Kedah" is probably also the Deli type.

An unidentified type with a small (and coarse) leaf is reported from Kedah and from Negri Sembilan.

In Perak a "Chinese" and a "Javanese" type are known, but it is stated that seed of these from South Perak when grown in the Province gave plants identical with the local Kedah type. In spite of this, however, one or more true Chinese types appear to be grown in various parts of the country.

Other varieties mentioned are -

In Province Wellesley.- A Rangoon type which proved unpopular because it produced a flowering shoot when the plants were young and only 18 inches high; a "Jaffna" type from Serdang of good quality but susceptible to "slime" disease and insect attack; Burmese Havana, Bhengi and Shevehyin from seed supplied by the Director of Agriculture, Burma. These showed promise of producing a good leaf.

In Perak.- Chinese, Indian and Rangoon types.

In Selangor.- Indian, Rangoon and Javanese types.

In Pahang.- A Sakai local type of unknown origin; Conecutt from Calcutta and Jaffna.

In Singapore.- Experimental plantings have included the Virgin type "Joyner", while small quantities of seed of the Virginian Hichery Pryer strain and of "Deli" type have been distributed and seed imported from China and Sumatra has been planted.

5. Time required for crop to come to Maturity. Observations on tobacco plots at Serdang and certain of the local agricultural stations show that all the types of tobacco grown mature in about 90 to 100 days. There are no records on this point from small holdings. The yields obtained on the small holdings are also not recorded; manured plots at Serdang have given between 500 and 600 lbs. of dry leaf per acre.

Production.- Exact figures for the quantity of leaf produced recently in Malaya are not available, but as an indication it may be mentioned that in Province Wellesley during the period March - December, 1931, about 550 piculs of dried leaf were prepared and during January to May, 1932, about 213 piculs, while in Perak South about 300 piculs of cured leaf was harvested in February, 1932.

7. The Process of Curing. Several different methods of curing the leaf are described. These vary according to the nationality and taste of the grower or consumer and to a less extent the type of tobacco grown.

A. The Malay Methods.- (i) The leaves are harvested, either when mature or when convenient with little regard to their ripeness. The mid-ribs are removed at once and the leaves are tied up into bundles and sliced with a sharp parang while held in a forked rest, or sliced with a simple home made cutter (M.Chelong). Sometimes the bundles of leaves are cut up the same day as they are picked, at other times the bundles are kept for a few days before cutting or else the leaves are allowed to yellow on frames or strings hung up in the house for two or three days before being made into bundles and cut.

The cut tobacco is then dried in the sun on bamboo trays and allowed to absorb moisture at night for a few days until it has turned brown and is thought to be sufficiently mature.

The curing process is sometime completed by wrapping the cut tobacco into bundles or placing it in a box and allowing it to mature for a month.

This type of tobacco, though made by crude methods, has often a good appearance. It is used mainly for the filling of nipah cigarettes (rokok) but sometimes as a pipe tobacco. It is usually prepared from the Deli type of leaf which the Malays prefer.

(ii) In theNegri Sembilan cheroots are made by Malays from the thin leafed variety of tobacco (probably Deli) as follows.-

The leaves are collected and allowed to wilt. They are then made into bundles of 20 to 40 leaves and hung up on poles to dry for two or three weeks. The mid-ribs are then removed and the leaves rolled into cigars.

B. Chinese Methods.- (i) The mature leaves are harvested and air dried either in the shade or in the sun. For this purpose they may be placed between two latices of bamboo (to keep them flat), the latices being set on their long ends for sun drying and turned once or twice during the day, so that both sides of the leaves are exposed to the sun. The air dried leaves may be sold to a buyer and be further cured by one of the processes described below, or the leaves may be left to sun dry until their colour and texture are considered suitable. They are then used by the gower himself and give a milder product than the tobacco prepared by the other methods described.

(ii) The leaves, air dried as described above, are sold to Chinese dealers. They may then be placed in a cool place for several days or be used at once. The descriptions vary on this point. The mid-ribs are then unstripped off. The leaves are made into bundles, every third or fourth leaf being smeared with groundnut oil, the proportion of oil in one factory, using electricity driven machinery, being 10 katis to each picul of leaf. The leaves are often coloured with rough powder. The bundles of leaves are put into presses or are tightly rolled and tied, like old fashioned navy plug. The pressed leaves or plugs are then sliced by hand or by machinery and the sliced tobacco is lightly dried. The result is a fine shag which is sold mainly as a cigarette tobacco. This product is known as "Anghoon" tobacco.

C. Indian Methods.-(i)Tamil growers may harvest their plants whole and hang them up to dry for about two weeks. Dealers buy either leaves that have been dried in a house for 10-15 days or whole green plants. In the latter case the dealer strips the leaves off the plant and may crush each leaf along its mid-rib and dry it until it resembles a piece of dirty rope. The dry leaves are made into bundles with or without their midribs and are tightly packed in boxes, rolled in gunny bags or piled up in heaps under weights to keep out the air. A fermenting process then takes place for which a small percentage of moisture in the leaves is necessary. The packed leaves are opened up once a week and restacked to ensure curing. This is a form of the usual method of preparing cigar tobacco. For the best results the temperature must be carefully watched and the period of curing be extended to as much as five or six months. Locally it may be terminated in as short a time as a week.

The curved leaves may be used for chewing. These are usually young top leaves. The remainder are used for the preparation ofcheap cheroots, the best and unbroken leaves being used for the wrappers and the remainder as fillers.

This method is mainly used by Tamil dealers but is probably also used by Chinese dealers. The Indian prefers a fairly strongpungent tobacco for cheroots, and the varieties preferred are Burmese or Jaffna.

(ii) Another method used mainly by Indians is to pluck the mature leaves and place them in a cool damp dark place, such as a pit in the ground, for two or three days or until the proper colour is obtained, the temperatures being raised by wrapping other vegetation round the bundle of leaves. The leaves are then dried and are ready for use presumably for the preparation of cheroots.

The product of the various methods described is generally of poor quality and very variable since the details of curing receive insufficient attention and the time for which the various processes are continued depends more on the need of the grower for ready money than on the proper preparation of the leaf.

8. Marketing.- Most of the tobacco prepared by Malays from leaves which they have grown themselves, or have in some cases, as in Perak South, purchased green from Chinese, is sold in the kampongs or at weekly fairs where these are held, the buyers in both cases being Malay consumers. The Malays are stated to prefer Sumatran leaf prepared by their own methods to the leaf grown locally and prepared by Chinese.

The Chinese small-holders and market gardeners sell their produce to Chinese or Tamil dealers either as green leaf, whole plants, or air dried leaf. The dealers cure it by one of the methods described. The larger Chinese dealers blend it with imported Chinese tobacco to make fine shag for cigarettes or occasionally for pipe smoking. They sell this in small packets to retail shops. Certain Chinese also manufacture cheap Burma cheroots from mixtures of local and cheap imported tobacco. The Tamil and other Indian dealers use imported Burmese, Indian or Jaffna tobacco with the local product in making cheroots, or sell plug made from the younger leaves for chewing.

The larger Indian dealers retail their products to smaller shops.

The Agricultural Field Officer, Selangor, states that the cut tobacco is graded into three qualities.

(i) The first made from young top leaves is used chiefly for chewing with betel leaf;

(ii) The second made from the central leaves is used for making native cigarettes; and

(iii) The third made from ground leaves is used for smoking and in medicines.

The dealers appear to have a good knowledge of curing processes and can make different grades of product to suit the tastes and purses of local consumers.

Dealers appear to purchase for cash or the equivalent of goods. In the Settlement of Penang of every consignment put up for sale, 8% of weight is deducted for incomplete drying, while about 62% is classed as first quality leaf and the remainder as second quality.

9. Buyers. As already indicated the buyers are mainly Chinese or Indian manufacturers. Some of these do business on a small scale in the villages, but others in the towns are also importers who supply the smaller shops with cheap cigarette and pipe tobacco and various grades of cheroots. One Chinese manufacturer in Teluk Anson uses electrically driven machinery. Some of the Indians employ skilled Burmese to roll cheroots.

10. Prices of locally grown tobacco. Prices for the same type of product vary and in several localities, notably, Kedah, Province Wellesley and Perak have fallen considerably in recent months.

Appendix 12.

(i) Air dried leaves -

	$ per picul.
Kedah	18 - 30.
Penang and Province Wellesley	15 - 30.
Perak North	25 - 28.
Perak Central	20 - 30.
Perak South	25.
Singapore, one special lot for cigars.	80.

(ii) Dried and Cured (in various forms)-

Perak Central (Tamil Method I)	100.
Selangor (for cigars and Cheroots)	7 - 50.
Negri Sembilan (Tamil prepared for cheroots)	40 - 90
Johore	30 - 45

(iii) Sliced tobacco prepared by the Malay method -

	$ per kati.
(a) For rokok nipah -	
Perak South	.80
Selangor	1.60 - 1.80
Negri Sembilan (Jelebu)	.50 - .60
(b) For chewing (top leaves) -	
Selangor	1.82 - 2.56
Negri Sembilan (made by Indian for Indian)	.60 - .80
(c) Pipe or Medicinal -	
Selangor (sand leaves)	.80

(iv) Fresh leaves in Perak South sell for about $5 per picul; whole fresh plants in Perak Central are sold for 3 cents each; leaves described as uncured sell for $15 - 16 per picul in Perak North and Central and $4 - 13 in Kedah.

11. Imported leaf with which local leaf competes. Information on this point is rather meagre. Much of the local production is clearly of inferior quality at present, but it appears that competition is with three types of imported leaf.

(i) With wrapper and filler leaf imported from Rangoon for making Burma cheroots;

(ii) With Jaffna leaf for cheroots;

(iii) With leaf from China for making cheroot, cigarette and pipe tobacco for use by Chinese.

The imported unmanufactured leaf pays a duty of 70 cents per kati.

It may be added that locally grown and properly prepared golden Virginia leaf would compete with similar leaf from Java and China imported by the British American Tobacco Co. for preparing cheap popular cigarettes.

Mr. Eu Kee Eng states that the Jaffnese quality known in Burma as "Coconada Short Filler Tobacco" imported from India and obtainable in Burma at about $19 per picul cost locally about $120 - 125 per picul, including import duty. A similar

tobacco was grown at the Government Experimental Plantation, Serdang, vide Appendix.

12. Forms in which locally grown tobacco is sold. As already stated locally grown tobacco is sold out by Malays for rokok nipah, cut by Chinese for cigarettes and pipes, or by Indians or Malays for chewing; and as cured leaf mostly by Chinese or Indians, but sometimes by Malays, for wrappers and fillers of cigars and cheroots. In the two latter cases it is usually blended with imported Chinese Burma and Indian leaf.

13. Prices for the various types.

(i) Malay cut tobacco -

Perak South	80 - 90 cents per kati.
Selangor	80 cents - $2.56 per kati.

(Upper leaves for chewing $1.60 - $2.56 per kati; middle leaves for cigarettes $1.20 - $1.60 per kati; bottom leaves for medicines and pipe tobacco 60 - 90 cents per kati).

Negri Sembilan	50 - 60 cents per kati.

(ii) Chinese cut tobacco -

Province Wellesley	$96 per picul.
Perak South	$96 - $112 per picul.
Pahang West	48 cents - 1.60 per kati according to district.

(Prices in Temerloh District have fallen from $1.28 to 45 cents per kati this year. Prices are quoted in cents per tahil).

(iii) Cheap Cheroots -

Negri Sembilan (Indian made for coolies)	60 cents per 100
Selangor	90 " "

(iv) Chewing Tobacco (Indian made) -

Negri Sembilan	40 - 80 cents per kati.

14. Factors influencing Price.

(a) Type of tobacco grown in relation to local demand.
(b) Quality of final product in whatever form prepared. This is the most important factor. More than one dealer has stated that low prices are due to faulty curing and grading caused in part by ignorance, but in part by the grower's desire, especially if he is a Malay, to obtain his cash as quickly as possible after harvest.
(c) Relation of local demand to local supply.
(d) Combination among buyers to keep down the price.
(e) Customs restrictions.

15. Comparison of locally produced Leaf and imported Leaf. Most of the locally produced leaf is definitely very inferior to imported leaf, owing to bad curing and grading, but some samples produced by private individuals or at the Government Experimental Plantation and one or two of the Agricultural Stations indicate the possibility of producing locally leaf which could compete with the various types of imported leaf.

16. Economic Condition of Growers. As the growers are mostly Chinese and Malay small-holders their economic condition is fairly well known and calls for little comment.

17. Extent to which the Grower is handicapped by combination among Buyers to control Prices. Information on this point is not very plentiful, but the indications are that buyers in Penang, Perak and Selangor are well organised and do to some extent control the price in all centres where there is a fairly plentiful production. It seems fairly evident that the steady fall in price in the last six or eight months in Province Wellesley and Perak South is not entirely caused by over-production, but is due in part to control exercised by the buyers.

18. The extent to which the grower is handicapped by Customs Regulations. The main effect of existing customs barriers is to limit demand by dividing the country into separate compartments and excluding the product of the largest producing area namely that in the F.M.S. and U.M.S. from the large market in Singapore and Penang. The natural result in areas where there is considerable production is to place the grower much more at the mercy of the local buyer than he otherwise need be.

To prevent smuggling in Province Wellesley transport of tobacco leaf along the roads is not permitted unless the grower has a permit which is issued on the strength of a certificate from an Agricultural Officer that the bearer is a genuine grower and possesses planted tobacco. The restrictions on the movement of tobacco leaf to prevent smuggling are liable to lead to abuses and give rise to petty inconveniences which discourage growers, or owing to delays may cause a grower either to lose his market or to suffer deterioration of his product owing to lack of a proper place in which to store it.

The Agricultural Field Officer, Province Wellesley and Penang states that bad prices in his Settlement for leaf are in part due to the fact that manufacturers are prevented by the Monopolies Department from exporting manufactured tobacco even to Malacca and Singapore, where there is definitely a market for local tobacco even of low quality. In Province Wellesley and Penang these restrictions combined with a low price are definitely causing a considerable reduction in the area planted.

It should perhaps be added that the possible imposition of an excise duty on locally grown tobacco is a point to which prospective planters on a somewhat larger scale give considerable attention.

19. Diseases and Pests. The commonest pests throughout the country are leaf eating caterpillars of which Heliothia assulta is the most important. Control measures by dusting with a mixture of tapioca flour and lead arsenate powder, or spraying with a weak solution of lead arsenate are effective.

The stem boring caterpillar of Phthormiaea (Gelechia) heliopa has proved troublesome in places, notably in Province Wellesley and Malacca; it has also been reported in Selangor. Its effective control requires further attention.

Slime Disease (Bacillus Solanacearum) is troublesome at times. It appears to be most destructive to Jaffna tobacco. It is recorded from Province Wellesley, Perak and Singapore. The only means of control is to avoid planting in land previously occupied by other members of the Solonaceae and to plant infected soil with some other crop.

8.
Appendix 12.

Crinkling. This malformation of the leaves has been found in a few instances. It is attributed to a hard pan below the soil surface or to lack of potash.

20. Conclusion. In conclusion the following quotation from a memorandum by the Senior Agricultural Officer, Perak, is of interest -

"It would appear that promiscuous cultivation and curing as existing at present will never produce an article commending itself to even the poorest classes of smokers, and any future that might exist for this crop will depend upon a wider knowledge of requirements in all branches together with the growers ability to be independent of the proceeds of his harvest for a period of at least one month. The industry would appear to be an ideal one for operation on a co-operative basis of curing and marketing."

Appendix 13.

MEMORANDUM BY THE DIRECTOR OF AGRICULTURE.

It is apparent from these notes and from results that so far have been obtained in the cultivation of tobacco that definite scope almost certainly exists in this country for the production of tobacco mainly for the purpose of supplying the local market in which the opening is two fold; firstly for the type of tobacco for making cheroots and the like and secondly for bright tobacco used in making cheap cigarettes of Virginia type. In relation to this latter market the present position is that the leaf used is largely grown in Java and China and possibly America and is imported into Malaya for manufacture there.

2. In relation to the development of the industry the fiscal side is growing important; it is a great handicap that tobacco grown in the Malay States is at present excluded for fiscal reasons from the big markets of Singapore and Penang. For the development of the industry it seems to me essential that an effort should be made if possible to reach an agreement in this respect which would get over the difficulty.

3. It is also of importance to realise that in any event if a tobacco industry becomes established one of the first requirement will be the imposition of an excise duty on locally grown tobacco. Definitely the growth of a local tobacco industry means considerable loss of revenue to the customs owing to the loss of import duty on imported tobacco and its replacement by an excise duty which incidentally must be below the import duty in order to afford a certain measure of protection to local cultivation is a point which is bound to receive early attention by Government authorities.

4. The position is particularly interesting inasmuch as it gives a replica on a larger scale of the possibilities of developing a tobacco industry which existed in Mauritius. Mauritius was an entirely importing country and there was practically no tobacco grown. It has in the interval of the past 10 years been converted into a practically self-supporting country in so far as tobacco is concerned and that there is no reason which I can see that the same thing should not be done in Malaya provided the necessary facilities for the work can be afforded and if the attempt is afforded sympathetic consideration by Government. The essence of the scheme in Mauritius was -

(a) The provision and maintenance of skilled advice to growers based on Experimental work done by the Agricultural Department and information collected by personal observations in other tobacco growing countries;

(b) The provision of arrangements whereby reliable local markets were provided for tobacco.

5. In relation to (b) action was taken in the first instance by Government who established a tobacco purchase scheme, subsequently the British American Tobacco Co. established themselves in the Island and through their Agency the maintenance of reasonable markets was assured.

6. Previous to that the position had been that the only buyers of tobacco were certain Chinese firms who manufactured

small quantities of tobacco on lines roughly similar to some of those described in this article. These Chinese buyers combined together to form a ring and cut prices to the lowest possible end; the result was that a very small quantity of tobacco was grown, this just sufficed to keep these Chinese manufacturers in tobacco on the small scale they financed, their operations were insignificant and their profits on the quantities of tobacco handled were very large indeed. Development in these circumstances was obviously impossible. The first step taken was the establishment by the Government of a small independent tobacco factory which purchased leaves of satisfactory quality from peasants and small growers at reasonable prices and manufactured tobacco for resale locally. Much opposition was encountered but the ultimate result was to break the ring of Chinese buyers, the price rose and although the actual operations of the Govermment factory were comparatively small the effect of its existence was to raise the price to a reasonable level. The parallel is very close to that of the Government Rice Mill at Bagan Serai.

7. Subsequently when the British American Tobacco Co. came into the field and were prepared to offer reasonable prices it became possible to close down the Government factory.

8. In addition funds were provided to enable experiments to be tried on various method of growing and curing tobacco and demonstrations were given that flue curing could be performed. This necessitates the erection of a flue curing barn which cost some where round about $800 to $1,000 and a necessary preliminary to experiments to ascertain whether the production of this type tobacco is possible.

9. As part of the development provision was made of officers who received special training in tobacco work and who were able to devote their whole time to matters dealing with this crop. It should I think be realised that rapid advances in relation to cultivation of crops, particularly new crops, is usually best obtained when officers can be appointed who have specialised knowledge concerning it and deal with one crop and nothing else. In Mauritius this principle was admitted by Government at an early stage. In Mauritius training and appointment of one senior and two junior tobacco officers were made; the senior officer was trained by being sent to South Africa, Rhodesia and Nyassaland for a period of six months where he studied in detail the tobacco industry in those countries. On his return to Mauritius he was wholly employed in developing the tobacco industry. It seems to me very probable that if attempts are to be made to develop a tobacco industry it may be wisest to employ a whole time officer in similar fashion. I personally believe that provided necessary facilities can be granted an industry can be developed in Malaya for producing tobacco for domestic consumption, but to enable this to be done, I think there should be special resources for experimental work and some staff with special training in the matter.

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Appendix 14.

FRUITS.

IMPORTS. Both fresh and preserved fruits are imported into Malaya in large quantities. In 1931, the net imports of fresh fruits amounted to 9,134 tons valued at $1,537,942, while the imports in years of more normal trade exceed this figure by about 2,000 tons and $500,000.

The net imports of dried and preserved fruits in 1931 were 6,919 tons, valued at $998,558. The average annual net imports, however, exceed 8,000 tons valued at about $1,750,000.

Almost half the fresh fruit comes from China. The other important importers are U.S.A., Netherlands India and Australia.

Of preserved fruits, in 1930 about one-third of the total imports were from China and about half from British Possessions.

Appendix 15.

The Survey Method of Investigation of Agricultural Industries and its application to an Examination of Fruit Production in Malacca Territory

by

D.G.P. Olds, B. Sc.,

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i. Introduction.

It has always been a matter of some difficulty to the Agriculturist to obtain information of a comprehensive and, at the same time accurate, nature regarding agricultural products. So many factors are usually in operation at the same time on any one issue that records of instructive value have been difficult to acquire.

2. As a result of this, agricultural investigators the world over have for some time been conducting research into the question of the most suitable method to employ in making an examination of an agricultural district. The result of these researches has been the evolution of the so called "Survey Method" which is now being extensively used in Great Britain and in some of the British Colonies.

3. Older investigatory methods, such as Financial Accounting and Cost Accounting, assumed that the producer himself was completely ignorant of correct methods of agricultural practice and was therefore incapable of contributing any valuable information to the investigator. In other words, any practical knowledge possessed by the producer was ignored and the information extracted from him was only of the nature of actual counts of stock and statements of his finances, as far as could be ascertained.

4. It can readily be imagined that these methods proved unwieldy and unsatisfactory, since a large amount of detailed information was acquired, which was probably inaccurate because of the dislike on the part of the producer for any meddling in his financial affairs. These methods were also very tedious and after some months work a very few holdings only had been examined. The idea of those examination was to be able to draw up detailed accounts of expenditure, profits and losses for each department of the holding separately and then make recommendations to the occupier on the results. It was soon realised however that the scope of these investigators was very limited and, moreover, very little notice of the recommendations made was taken by the producers.

5. The Survey Method adopts an entirely different starting point. It assumes that the producer, who has a wealth of practical experience behind him, passed down from generation to generation does possess valuable information as to the most suitable crops to grow, best methods of agricultural practice and the like. Starting, then, with this basis, the investigator sets out to extract this information from a very large number of holdings. It is chiefly here that the value of the method lies. By examining a very large number of holdings certain common facts and practices emerge and certain groups will appear to be similar in all respects agriculturally, while there may be yet other groups which have an entirely different set of conditions but was similar to one another. If, on examination, one group is found to be producing profitably and the other at a loss, it is then the duty of the

investigator to point out that the successful group is growing certain crops, using certain methods, or marketing in a special way, and to recommend the producers who have been losing on their holdings to adopt these practices.

6. It may be mentioned that the method had proved very successful in certain countries in England and the circumstances of poor farmers definitely improved through their adopting more successful methods of farming.

7. The essence of the method, then lies in extracting information of proved value from a large number of holdings and imparting this information to producers who have been less fortunate, or more ignorant of the better practices. It is a well known fact that a producer of agricultural produce is much more likely to adopt methods which seem successful in the case of his neighbour's holding than to adopt them because they are recommended by an Agricultural Department.

8. It is of this spirit that the survey method takes advantage. The function of the investigator is merely to acquire the information necessary and pass it on to those who are ignorant of it.

9. Apart from this, its chief value, the Survey Method is a very satisfactory means of putting on record all the facts available regarding a particular district, such a record being valuable for purposes of reference and comparison with other districts.

10. In applying the Survey Method to holdings in tropical countries one is of course confronted with very different sets of conditions from those obtaining in temperate climates. Everything is much more primitive, the standard of living is much lower, education is at a very backward stage, and there is not the same spirit of competition. Nevertheless it is felt that investigations along the lines of the Survey Method would be very valuable as affording a basis for further researches. The method deserves to be more widely known and utilised and could probably be operated very successfully at the present time when information regarding agricultural products is badly needed.

11. In order to test the suitability of the method, and to gain information regarding a valuable industry - a survey of the Fruit production in Malacca Territory was undertaken by the writer. The examination was by no means as detailed as it might have been, and the staff available was somewhat limited and moreover had had no previous experience of work of this kind, but the results are definitely encouraging and it is felt that the object of the investigation has been attained. A description of the actual method used and the results obtained follows in the remainder of this article.

ii. <u>Methods Employed.</u>

In order to obtain sufficient information upon which to base conclusions, a total of 154 holdings was surveyed. Malacca territory is divided into 3 administrative districts, Central, Alor Gajah and Jasin, in each of which there is a Malay Assistant in charge. After instruction in the method and some preliminary trials with experimental field sheets, each of these assistants was supplied with a number of Field Forms which had been found successful. Two holdings in each mukim

were examined and the information recorded on the Field Forms. These Field Forms were drawn up in such a way as to simplify and standardise the information obtained from the occupiers of the holdings, and to render subsequent office examination comparatively rapid.

2. The Field Form used is designed to give information regarding the average number of trees, yield, source and price of planting material, place of sale and price obtained, of each of the forty fruits listed. In addition there are columns for information regarding the owner himself, his nationality, name, and whether he is indebted to any one, and information as to the size, situation, soil aspect and distance from market, of his holding.

3. In actual practice it was found that information regarding yields was difficult to obtain and there was also a certain reluctance on the part of Malay owners to impart information regarding these monetary affairs, chiefly because they appear to be afraid of the imposition of increased land tax. These were the two chief difficulties met with. The information gathered was in many cases very scanty due to the ignorance of the occupier himself regarding his own holding, but on the whole more information was gathered than was expected. The Malay Assistants, after a certain amount of practice proved to be quite good at extracting the required information and generally speaking grasped the essentials of the scheme very satisfactorily.

4. Re-surveys were performed by the writer on some occasions in order to check the work of the Assistants and it was found that the information was reasonably accurate.

5. In addition to the above, in each of the districts one holding which appeared to be rather better than the average and in a more or less flourishing condition was surveyed in detail, actual counts of the number of trees present being made accurate yield figures taken and all other relevant facts recorded. This information is not yet available but it is hoped to submit this later. From it, one should be able to gather a fairly true idea of the amount of money a good fruit holding may be expected to produce during a season or a year, which information would be of considerable value, since the comparison with the financial statement from a poor badly kept holding can then be drawn.

6. A further supplementary investigation was made into the market prices for fruits in each of the three districts in order that a comparison with kampong prices could be made.

iii. Results-General.

The main features which are evident from a scrutiny of the Field Forms and personal inspections during the course of the survey may be summarised thus:-

(1) Practically all Malay holders have some fruit trees in their holdings.

(2) All the fruit produced in Malay holdings is grown in a very haphazard way there being little or no attempt at correct methods of spacing, manuring, pruning etc.

(3) Knowledge of how to produce marcots is fairly common amongst the Malays.

(4) Chinese holdings are invariably in better condition, and more carefully looked after, than Malay holdings.

(5) Most of the Chinese holdings in Malacca are not used for money making purposes, the fruit being supplied to relatives and friends free of charge.

(6) Since the arrival of the slump in rubber, fruit producing is on the increase amongst the Malays but chiefly for home consumption purposes.

(7) Since the methods leave much to be desired, since they place the advantage in favour of the middlemen who are usually Chinese. The fruit is sold locally in the kampong at a low price or exchanged for goods in the local kedai and the Chinese kedai owner is able to manipulate the accounts to his own satisfaction. Since he and not the producer can produce in a court of law an account book showing transactions he invariably wins any case in which he sues the producer for debts incurred. Many complaints of this kind were met with during the survey.

(8) The unit of production is too small to enable the producer to obtain good prices for his fruit.

(9) Market prices for fruits are much higher than prices obtained by the producer, the difference going to middlemen of whom there is an excess.

(10) No attempt at co-operative sale or marketing on the part of producers was met with.

(11) The fruit grown by the Malay is grown primarily for home consumption. Any surplus above the amount required in the household is sold at very low prices.

(12) The common Malay method of dealing with fruit trees is to allow secondary jungle to develop under the trees and cut it back during the fruit season.

(13) Planting methods are very primitive consisting usually of allowing seeds which drop from old trees in the holding to germinate.

(14) A great deal of damage to fruit is done by squirrels and flying foxes. One attempt to deal with these pests on the part of Malays was met with. This consisted of a roughly constructed gong or bell suspended from the tree and made from a tin with a stone suspended inside, this stone being attached to a long piece of string reaching to the ground. When the string is pulled from below the noise created is sufficient to drive away invading pests.

(15) The fruit trees at present grown appear to suffer from no serious disease. The yield, however, is slow.

(16) Chinese holdings were regular spacing is adapted good planting material imported a certain amount of manuring

done, and adequate supervision provided, show definitely better yields than other holding.

(17) The Malay will admit that he can obtain a fair profit from fruit growing but appears to be ignorant of all methods of good husbandry.

(18) He often lets his fruit to a Chinaman, who extracts good profit therefrom.

iv. Results - Detailed.

From a detailed analysis of the Field sheets the following information was extracted:-

(1) The percentage of holdings on which manuring was carried out.

(2) The percentage of occupiers who were in debt at the time of survey.

(3) The average acreage of all the holdings surveyed. (3.30 acres).

(4) The percentage of holdings for which planting material had been bought.

(5) The most common fruits in Malacca.

(6) The percentage of holdings from which fruit was sold.

(7) The average price obtained in the kampong for each of these common fruits.

(8) The average price obtained in the market for each of these common fruits in (1) Central, (2) Alor Gajah, (3) Jasin Districts.

v. Discussion of Results.

It will be seen from the above tables that several interesting facts emerge from the survey.

1. First of all out of the total of 154 holdings, 22.5% actually make some attempt at manuring. This manuring is of the most primitive kind but it indicates that the cultivator does realise that manure plays a part in fruit growing. Often the manuring insists only of cut grass and small undergrowth placed round the base of the tree and allowed to rot. In a few cases cattle manure was applied and again, pig dung was used as a fertiliser on Chinese holdings. On one holding one tree showed a much higher yield than any other chiefly because a buffalo was tethered beneath it most of the time. The figure of over 20% gives an indication of the extent to which the advantages of carrying out some sort of manurial treatment are appreciated by the natives. In many cases the manuring was carried out primarily for the growth of vegetables which were planted under the fruit trees.

2. It will be noticed from Column 2 Table 1 that approximately one quarter of the numbers of cultivators are more or less indebted in most cases to Chinese Kedai owners and sometimes to Chettiars. The extent of the indebtedness was not, except in occasional holdings, investigated, but usually the

debts were large enough to prevent the debtor dealing with any one else but his creditor, all of this produce being sold to or through the latter. This figure of 25% is if anything probably too low, since all the holders would not admit that they were in debt and they were down in the records as not in debt. The figure is high enough however, to indicate the need for reform measures. The indebtedness of the cultivator to money-lenders and etc. is, of course, a common feature throughout the tropics and measures adopted up to date for reducing it have not proved very successful in other countries. This is one of the issues upon which co-operation between administrative, Co-operative and Agricultural Departments is clearly needed.

3. Column III table 1 shows the average acreage of the holdings surveyed between 3 and 4 acres is the average. One or two holdings of about 15 to 20 acres were encountered but these were either Chinese owned or consisted of 2 acre blocks adjoining one another, each block with a separate cultivator. The general opinion of the owners themselves was that anything less than 5 acres was uneconomic for fruit production but as will be shown later, this is probably not the case. Quite a good profit can be made on a holding of 2 acres provided it is well looked after.

4. The percentages of the holdings on which planting material had been bought is given in Column IV Table 1, and the average for the three districts is 21%. The planting material bought usually consisted in these cases of coconuts, rambutan seedling from Penang and Chiku marcots bought locally from better fruit holdings. This figure of 21% includes all holdings on which any kind of planting material for fruit had been bought, and represents the percentage of holdings on which some attempt at raising better stock had been made. Enquiry was made at the time of survey in many cases as to whether if the Department could supply good planting material at low cost, this material would be bought by intending fruit growers and the replies were encouraging.

5. The percentage of holdings from which fruit was sold is shown in Column V. The average is 37.6% and this figure is probably a fair representation of the facts. The amount of fruit sold, of course, varies considerably with the holding, some sold only pineapples while others disposed of several different kinds of fruit to the local kedais or in the market. Generally speaking the amount was small and consisted of the surplus above that required for home consumption. A complaint very commonly met with was that unfair treatment at the hands of the shop dealers was one of the greatest difficulties of the producer and he got a very low price for his product. Undoubtedly the smallness of the unit of production and the haphazard methods of planting with the consequent inability to create a constant supply of fruits as they come into season, have much to do with the low price obtained. Prices vary considerably with the quality of the product and no attempt at grading of the produce was met with during the investigation.

Table II is a list of the fruits in order of the frequency of their occurrence in the holdings. It will be seen from this list that coconuts are present on every holding except one. The Malay likes to have one or two coconut palms in his holding so that if he is in financial difficulties he can pick a few coconuts sell them and so earn a few cents to

tide him over the difficult period. For the most part the coconuts are old and very poor yielding and no attempt is made to improve the yield.

Rambutans and Durians are represented on almost all holdings, chiefly because they are liked as a fruit by the Malays and find a ready sale during the season. Bananas are a common crop because they afford a more or less constant supply of food and a little cash to the owners. They are very badly looked after in general and the fruit is of inferior quality.

The remaining fruits are of common occurrence and the figures indicate the extent to which they are grown. A somewhat unexpected result is to find the mango so high up the list. The fruit is liked by both natives and Europeans if of good quality, but this varies so much that the question of improvement by growing only selected stocks is an important one and deserves attention.

7. Table III shows clearly the difference between the average kampong prices and the average market prices of the 10 commonest fruits. The presence of 2, 3 or even more middlemen between the producer and the consumer is largely responsible for this difference. The producer has practically no bargaining power at all since his product is variable in quality and his unit of production small, so that the people who really benefit from the fruit industry are the hawkers and the shop-keepers. The Malay does not however make any attempt to market his own produce as do the Chinese and probably his indebtedness to the middlemen accounts for that fact.

As a rough indication the amount of money which may be yielded from a holding there is worked out below an estimate of the yields obtainable from 1 acre of land producing fruit, based on the figures obtained in the survey and taking yields and prices <u>below</u> the average.

<u>Holding 1 acre.</u>

1/4 acre Durian = 6 trees @ 40' x 40' planting distance.
1/4 " Jack Fruit = 12 trees @ 30' x 30' " "
1/4 " Rambutan = 9 " @ 25' x 25' " "
1/8 " Rambutan = 54 " @ 10' x 10' " "
1/8 " Sarawak Pines = 218 plants @ 5' x 5' " "

<u>Total 1 acre.</u>

Durian 6 trees yielding 70 fruits per trees per season
@ 6 cts. each = $25.20.
Jack Fruit 12 trees yielding 6 fruits per tree per annum
@ 30 Cts, each = $21.60.
Rambutan 9 trees yielding 300 fruits per tree per annum
@ 15 Cts. per 100 = $8.10.
Bananas 54 trees yielding 1 bunch per tree per annum
@ 10 Cts. per bunch = $5.40.
Sarawak Pines 218 plants yielding 1 fruit per plant per annum @ 10 Cts. per fruit = $21.80.
Total <u>$82.10.</u>

The total amount of money yielded by such a holding, at a minimum amounts then to $82. Since the average size of

District Officer,
Raub.

8.
Appendix 15.

holding in Malacca is over 3 acres one can therefore assume that the average holder could get approximately $240. from his holding without any special trouble or care. It should be remembered that the above estimate is deliberately based on low figures, so that the probability is that considerably more is actually obtained from an average holding. In Malacca many of the cultivators also have padi land so that on the whole they obtain a satisfactory living.

The above theoretical holding, could, of course, be divided up into smaller areas with a greater number of types of fruit, but these figures will serve to illustrate that fruit growing is undoubtedly worth while to the native cultivator. It is probable that 99% of the holders themselves have not the slightest idea as to how much money they actually do get from their fruit during the year and these figures would serve a useful purpose in enlightening those who do not bother to plant fruit trees.

The sum estimated above is not all actually realised by the owner in the normal way, since he consumes a large proportion of the fruit and sells only the surplus. Nevertheless this figure is the amount which could be realised if all the fruit were sold.

8. Table IV show the market prices of the various fruits sold in the three districts Central, Alor Gajah and Malacca. The difference between these prices and the kampong prices is very marked if reference is made to the completed field sheets and it is clear that the producer gets only about one half of the market price in many cases.

It will be seen too from Table IV that a great many fruits find their way into the market, and most of them find a good sale.

iv. <u>Conclusions.</u>

The following are the chief conclusions which may be drawn from a consideration of the information collected.

1. Fruit growing as at present practised by the raiat is a primitive industry. No attempt at large scale production is made and the general methods of planting leave very much to be desired.

2. The marketing of the fruit produced is not at all satisfactory to the producer owing to -

(a) His indebtedness to the Money lender and Kedai owner.

(b) Ignorance of the advantages of grading & etc.

(c) His general spirit of slackness in regard to his products and his holding.

(d) The smallness of the unit of production is not in a position to have any say in the matter of prices, but has to depend on what is given to him.

3. There is definitely a local market for common fruits provided it is of good quality and size.

4. Few Malays seem to consider fruit production seriously as

a source of revenue but in a few cases, usually when the cultivator was to some extent educated, attempts at better methods of husbandry had been made and deserve encouraging.

5. The present time is admirably suited to propaganda on fruit growing as many cultivators are clearing away and selling their rubber trees and are looking for other crops to grow.

6. The survey method of investigation has proved to be satisfactory. No common native practices which are of very great value have emerged from it, as might be expected since agricultural methods amongst the Malays have always been primitive and haphazard but a good deal of information as to the state of the industry has been obtained. Such common practices as did appear, such as the allowing of secondary jungle to grow under the fruit trees in order to prevent soil wash and when cut to supply green manure and the practice of allowing seedling to take place naturally, are of little importance, except to illustrate the primitiveness of the methods used throughout. The survey method however achieved its object in that a record of facts has been obtained, the attitude of the native towards fruit growing ascertained, the inherent disadvantages of present methods of production and marketing revealed and some idea as to the possibility of extending the industry has resulted.

7. <u>Suggestions for Improvement of the Industry.</u>

1. Good planting material should be made available to cultivators at low prices.

2. Instruction in Fruit Production methods should be part of the course in School Gardens.

3. In collaboration with the Co-operative Department and the Administrative Department an attempt at solving the problem of the indebtedness of the cultivators should be made.

4. Co-operative Marketing should be started in order to increase the unit of production.

5. Instruction by the Department on methods of grading should be given.

6. The possibilities of extending the market should be investigated.

10.
Appendix 15.

Table I.

	Column 1.	Column 2.	Column 3.	Column 4.	Column 5.
	Percentage of holdings on which manuring is attempted.	Percentage of owners or occupiers in debt.	Average acreage of holdings.	Percentage of holdings on which planting material was bought	Percentage of holdings from which fruit is sold.
Central	13%	25%	3.42	27%	30%
Alor Gajah	25%	23%	2.50	18%	43%
Jasin	29%	20%	4.34	16%	40%
Average	22.5%	23%	3.3	21%	37.6%

Table II.

Showing 10 commonest fruits in Malacca in order of their occurrence.

Name of Fruit.	No. of holdings on which represented. (Total No. of holdings 154).
Coconut	153
Rambutan	126
Durian	123
Banana	116
Mangosteen	112
Jack Fruit	97
Langsat	93
Bachang	82
Rambai	79
Mango	67

11.

Appendix 15.

Showing difference between Kampong and Market Prices of the 10 most common fruits.

Name of Fruit.	Av. Kampong Price.	Av. Market Price.
Coconut	1 - 2 Cts. each.	2 - 3 Cts. each.
Rambutan	5 - 10 Cts. per 100.	15 - 20 Cts. per 100.
Durian	3 - 6 Cts. each.	5 - 10 Cts. each.
Banana	90 Cts. to $1.60 per picul.	90 Cts. to $2 per picul.
Mangostcen	10 - 15 Cts. per 100	20 - 30 Cts. per 100.
Jack Fruit	20-30 Cts. each.	30 - 45 Cts. each.
Langsat	8 - 10 Cts. per gantang	15 - 20 Cts. per gantang.
Bachang	½ - 1 Ct. each.	1-2 Cts. each.
Rambai	2 - 3 Cts. per gantang.	5-8 Cts. per gantang.
Mango	1½ to 2½ Cts. per 10.	4-5 Cts. per 10.

Appendix 15.

Fruit.	Price in Alor Gajah	Price in Jasin Dist.	Price in Central District.
Coconut	2 cts. each	2½ - 3 Cts.per fruit	
Mangosteen	4½ " p.10	4-5 Cts. per 10	2-3 Ctsper 10.
Rambutan	15 Cts p.10		15-20 Cts.p.100
Chiku	5 Cts. p. 100	1-2 Cts.p.fruit	
Banana	12 Cts.p.bunch	10.30 " p.bunch	90¢ -$2.p.Pikul.
Duku			
Pomelo			
Orange			
Lime 1		1 Ct.per 6 fruits.	
Pulasan	25 Cts.p.100		20-25 Cts.p.100.
Papaya			
Pineapples	2 Cts. each	15 Cts.each Sarawak.	15-25 Cts.each.
		1-2 Cts ea:ordinary.	1-1½ Cts. each.
Durian	6 Cts. each	5-13 Cts. each.	5-10 Cts.each.
Jack Fruit	25 Cts. each	1 Ct. per slice of 2-3 pulps.	30-45 Cts. each.
Langsat			15-20 Cts.p.gnt.
Belimbing Saji			
Blinging Buloh			
Rambai			5-8 Cts.p.gant.
Bachang	1½ Cts.each.	1 Ct. per fruit.	1-2 Cts. each.
Rokam		2 Cts. p. 30 fruits.	
D.Belanda	5 Cts. each.	5-6 Cts. each.	5-6 Cts. each.
Jambu Ayer		3 Cts. per 30 fruits.	10-15Cts.p.100.
Jambu Biji			
Remia			10-15 Cts.p.gant.
Nona	30 Cts. each.		
Chermai			
Binjai	2 Cts. each.		7-10 Cts.p.10.
Lanjot			
Champedak	6 Cts. each.		8-10 Cts. each.
Sukon			
Jering	4-5 Cts.per 50		10-15 Cts.p.100.
Mata Kuching	$5 per pikul		
Mango			4 - 5 Cts.p.10.
Petai	5 Cts. per 10 pieces.		15-20 Cts.p.100.

Appendix 16.

PINEAPPLES.

Trade. Malaya is a producer of canned pineapples which are sold to various countries, the best customers being the United Kingdom, where over 80 per cent of the canned pineapples consumed come from Malaya; China, Canada and Australia also take appreciable quantities.

The exports in 1931 amounted to 59,457 tons, valued at $7,083,450. Annual production has steadily increased since 1919, when the exports were 8,228 tons while prices have generally shown a downward tendency.

Prices. In 1904 the average value per case was $5.53; the highest prices were in 1920 when an average price of $16.30 per case was obtained. In 1930 the average prices per case were as follows:-

Cubes $3.51, sliced flat $3.29, tall $3.49.

The bulk of the exports are packed in 1½ lb. tins in wooden cases of 4 doz. cases. There are other descriptions of packing to suit particular markets.

Areas. The main areas of production are Johore 35,000 acres, Singapore 8,000 acres, Selangor 5,000 acres. Almost invariably, pineapples are grown as a catch crop with some other more permanent form of cultivation generally rubber.

Production. The first crop is generally harvested 18 months after planting, from 1,200 to 1,500 fruits per acre being obtained. Thereafter for a further 3½ to 4 years, two main crops are reaped annually. When the crop is in full bearing from 4,000 to 5,000 fairly large fruits per acre are obtained annually. As the plants become old the size, quantity and value of the fruit declines.

The prices paid to growers is generally very low in the season (from 70 cents to $1.50 per 100 fruits) but between seasons, these prices may be doubled.

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Appendix 17.

POULTRY IN MALAYA.

i. Statistical Position.

That Malaya's import trade in poultry and eggs is considerable and tends to increase rather than the reverse is borne out by the statistics covering this trade for the last four years 1928 - 31, details of which are given in Table I below.

Imports.

Poultry alive.

Country	1928 Nos.	1928 Vals. $	1929 Nos.	1929 Vals. $	1930 Nos.	1930 Vals. $	1931 Nos.	1931 Vals. $
British Empire & Protectorates.	2,125	2,514	881	2,850	1,573	5,023	320	1,618
China	20	10	517	618	-	-	-	-
French Indo-China	19,936	19,134	2,265	1,676	850	830	-	-
Netherlands Indies.								
Bali	3,999	3,476	558	390	-	-	-	-
Banka	4,273	3,323	-	-	-	-	-	-
Celebes	462	315	-	-	-	-	-	-
Java	129,213	90,247	117,972	85,541	64,512	49,596	-	-
Sumatra	28,848	16,847	6,928	4,113	162	81	-	-
Siam	144,902	72,743	321,407	235,763	1,068,814	958,323	-	-
Totals	333,778	208,609	450,528	330,961	1,135,911	1,013,323	975,523	711,147

The number of head of poultry imported, and the value returned for same, reached the highest figures on record in 1930. Despite the general depression the number of head imported during 1931 does not show a very heavy decrease over the peak year, but it will be noted that values have considerably declined.

Within recent years there has been a general falling off in the import of live poultry from French Indo-China and Sumatra to Malaya, and to a lesser extent in the case of Java, but it will be noted that the imports from Siam have increased many fold.

Export figures for live poultry show that the trade is very small, the values for the period 1928 - 31 being as below.

2.
Appendix 17.

EXPORTS - Poultry Live.

1928.	1929.	1930.	1931.
$5,347.00	$5,679.00	$2,133,00	$3,743.00

Statistics of Imports of Dead Poultry are given below.-

IMPORTS - Poultry Dead.

1928		1929		1930		1931	
Tons.	Value.	Tons.	Value.	Tons.	Value.	Tons.	Value.
88	$129,845	111	$163,012	90	$126,823	77	$91,617

Statistics of egg imports into Malaya are of interest in showing the extent of the trade, and how far Malaya is at present dependent on foreign countries to supply her requirements. Figures covering the last four years are given below.

IMPORTS - Eggs: Fresh and Salted.

1928		1929	
Quantity.	Value.	Quantity.	Value.
43,416,600	$1,175,625	55,286,700	$1,552,513

1930		1931	
Quantity.	Value.	Quantity.	Value.
52,097,500	$1,342,695	40,393,100	$748,445

Imports of eggs fresh and salted come mainly from China, Indo-China and Hong Kong, and in 1930 China supplied us with 27,000,000, Indo-China 19,100,000 and Hong Kong 4,900,000 eggs.

Export figures of eggs are given below to show that although several million eggs have been exported yearly in recent years the export trade is small compared to the Import Trade.

EXPORTS - Eggs: Fresh and Salted.

1928		1929	
Quantity.	Value.	Quantity.	Value.
4,076,500	$143,975	5,142,500	$171,943

3.
Appendix 17.

EXPORTS (Contd.) - Eggs: Fresh and Salted.

1930.		1931.	
Quantity.	Value.	Quantity.	Value.
3,279,000	$93,326	2,621,500	$56,205

The export trade in eggs is mainly done with Sumatra and Borneo.

That an attempt should be made to reduce our dependence for supplies of poultry and eggs on outside countries must suggest itself to everyone after studying the statistics given above.

ii. Present Position of Poultry Husbandry in Malaya.

No organised attempt has ever, to the writer's knowledge been made to run poultry husbandry on a sound basis in Malaya.

The type of fowl generally reared in the kampongs and small holdings is best referred to as nondescript. It is generally a poor layer, slow maturing, but fairly hardy and a good scavenger. Egg yields rarely exceed fourty to fifty eggs per year, but although the egg yields are low, it is possible a small profit accrues, because cost of production are low. The diet provided generally consists of padi, or a little boiled rice mixed with rice meal, the remaining food required for egg production and growth being obtained by the fowl itself scavenging around the kampong. No attention is given to culling, selection or breeding, and improvement cannot be looked for in small-holders fowls until the importance of such points are brought to their notice.

Housing is generally of the cheapest and worst type. Dark, ill-ventilated and low roofed houses being the predominant type met with in the kampong. It is no wonder then that disease, especially in the form of Avian Diphtheria, takes a heavy toll of kampong fowls every year. Prevention of disease is practically unknown, but resort to treatment when losses are heavy is often attempted, the treatment usually consisting of forcing pounded chille and onion down the affected birds throat.

Breeds of Imported Fowls in Malaya.

Quite a number of pure strain breeds of fowl common to Europe and Australia have been imported at one time or another into Malaya for experimental purposes, by Europeans, Chinese and Indian poultry fanciers. Among the most numerous importations have been White Leghorns, White Wyandottes, Rhode Island Reds, Light Sussex and Plymouth Rocks. Other breeds imported in lesser numbers have been Australorps, Brown Leghorns, Black Minorcas, Langshans, Orpington and Indian Game.

A breed of poultry that finds favour with the Chinese is what is known as the "Shanghai", which is reputed to be a better layer and quicker maturing breed than the local fowl, and when fattened reaches greater weights than is possible in the fattening of the local fowl.

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Appendix 17.

Breeds of Imported Water Fowls in Malaya.-

Ducks of the Aylesbury, Indian Runner and Khaki Campbell breeds have all been imported from Europe at one time or another, but such importations have generally been confined to Europeans. The Muscovy duck is met with all over the country and is commonly reared by Malays and Chinese.

Duck Rearing in Malaya.-

Large scale duck farming is carried on in Kedah, Penang, Province Wellesley, Krian (Perak), South Johore and Singapore by Chinese who are chiefly responsible for maintaining supplies of ducks to the markets all over Malaya. Duck rearing although not known to Malays is of much less interest and importance to them than fowl rearing.

The ducks reared by the Chinese in large numbers are, like the fowl reared in Malaya, of a nondescript breed. An egg laying type of the conformation of the Indian Runner is kept, as is the table duck type akin to the heavier breed of ducks such as the Aylesbury or Pekin. The duck is less prone to the diseases common to fowls in Malaya, and this fact may have influenced Chinese duck farmers in taking up duck farming on a large scale to the almost complete exclusion of fowl rearing.

Duck farming is a specialised occupation among the Chinese, and farmers usually augment their stock by buying day to week old ducklets from Chinese Hatcheries, and in turn the owner of the Hatchery invariably makes his purchases of eggs for hatching from customers who buy his ducklets.

Natural and Artificial Incubation.-

Artificial incubation as practised by the Chinese is very different to that practised in Europe and America, and those interested are referred to an article which appeared in the Malayan Agricultural Journal, Vol. XVIII, number 7, under the title "Chinese Hatcheries". This is a specialised occupation and is confined to the Chinese. Europeans who have gone in for artificial incubation have contented themselves with the type of incubator with which they are conversant, but there is little doubt as to which is the cheaper method.

Government Experiments with Imported Poultry.-

Within recent years the Department of Agriculture have carried out experimental work with imported breeds of poultry at Kuala Kangsar, Perak, and recently at Fraser's Hill. The breeds imported for Kuala Kangsar were bred in England and consisted of 5 pullets and a cockerel each of Rhode Island Reds, White Wyandottes, and Light Sussex, also five ducks and a drake of Aylesbury and Khaki Campbell breeds of water fowls. Up-to-date poultry houses were erected, balanced rations fed and trap nesting practised, while incubation, brooding and rearing work has also been carried out. Of the three breeds of fowls, the Rhode Island Red gives most promise of being suitable for rearing in Malaya. Both breeds of ducks did well and laid prolifically at the outset.

The poultry recently imported for experimental work at Fraser's Hill are of the breeds White Leghorn, White Wyandotte and Rhode Island Red, and were bred in South Africa.

Appendix 17.

iii. Suggestions for the Improvement of Poultry Husbandry in Malaya.

(a) Prevention of Disease.-

Disease is the factor that limits the development of the Poultry Industry in Malaya to-day, and the yearly loss of fowls throughout Malaya is stupendous. It is impossible to give any idea of the extent of the ravages of disease in poultry flocks in numbers, but it is no uncommon thing for small-holders to lose 50 to 75% of their fowls at intervals of six months. The disease mainly responsible for these heavy annual losses is Avian Diphtheria and often generally referred to as Roup. The other form of the disease, Fowl Pox, takes its toll also, as do Fowl Typhoid and Fowl Cholera, and there is evidence that Bacillary White Diarrhoea and Coccidiosis are other diseases of poultry common to Malaya.

While prevention can do a great deal to lessen losses, treatment of infected stock is usually unsuccessful and not worth while. Insufficient information is available in Malaya at the present time concerning poultry diseases, and vaccines for poultry diseases are generally unprocurable locally. It may not be an economic proposition for a small-holder to use preventive vaccines for protecting his flock from disease, but while capitalists who may be interested in poultry rearing are unable to procure vaccines locally for the inoculating of their stock against disease, on large scale rearing of fowls is likely to be undertaken.

(b) Improvement of Housing for Stock.-

As previously mentioned housing is usually of the worst type. The average small-holder is not aware what constitutes a good type of house for poultry, and as long as he provides a house of a type which will enable him to lock up his stock at night he feels that the question of overcrowding, ventilation and sanitation are not worth troubling about. Propaganda work on these points is urgently necessary, and lectures and demonstrations with model houses might decrease the incidence of disease in a very short time. Advantage might be taken of the agricultural shows held up and down the country to show an ideal type of house for poultry, and to point out where it differs from the ordinary kampong type, and the advantage to be gained by using such a type for housing stock.

(c) Selection.-

Selection of strains for breeding, culling of pullets and hens, might all be made the subject of lectures at agricultural shows, and the points of a good layer and bad layer emphasised. Generally speaking it costs no more to feed a good layer than it does a bad layer. At present, selection, culling and attention to breeding are entirely neglected by small-holders.

(d) Feeding.-

Padi, as already mentioned, forms the main feeding of almost all kampong poultry, other ingredients fed consisting mainly of rice by-products and fish refuse. The economic circumstances of the small-holder may not permit of his purchasing imported foods for feeding his stock, but the use of feeding mixtures containing ingredients locally produced might be demonstrated to him, or brought to his notice.

(e) Trap-Nesting.-

Trap-nesting, although never practised by small-holders in Malaya, is one of the greatest aids to effecting improvement in a flock of poultry, and incidentally assists one in selection and culling of stock. Where increased egg production is the aim this might well be tried by the small-holders and record sheets kept. Breeders of imported stock have in the past been slow to make the most of trap-nesting and in consequence have been unable to supply prospective purchasers with a record of production of the hens from which settings of eggs have been sold. With a record of production buyers will always be prepared to pay a higher price for a setting of eggs from stock whose records are known, than from stock whose record is not disclosed.

(f) Demonstration Stations.-

Demonstration stations suggest themselves as an aid to improvement of poultry in Malaya, for the average small-holder is notoriously conservative in adopting new ideas. He must satisfy himself from an inspection of work carried out or being carried out that everything is as it is claimed to be and if satisfied further propaganda work is rendered easy. Much good could be done by an extension of demonstration stations throughout the country from the educational point of view, while these stations would also serve a long felt want as egg or day old chick distribution centres.

(g) Marketing.-

Improvement is necessary in the marketing of poultry, and the gap between the prices received by producers and that paid by consumers narrowed down somewhat. Very few small-holders at present market their own fowls, Chinese and Malay middlemen periodically visiting small-holdings and purchasing poultry for cash, and returning to the market to sell or hawk from door to door. Organised marketing ought to increase the return to the producer and enable him to improve the equipment of his poultry yard.

Appendix 18.

POULTRY.

Imports.- The import of poultry and eggs into Malaya has for many years been considerable, as is shown by the following statistics:-

Net Imports of Poultry and Eggs into Malaya.

Year.	Poultry - alive		Poultry - Dead.		Eggs - Fresh and salted.	
	Number	Value	Tons	Value	Quantity per 100	Value $
Average per annum 1924-1930 inclusive.	579,387	456,787	64	105,103	478,051	1,009,061
1931	875,349	707,404	75	89,890	376,024	692,240

The detailed figures of annual imports show a constantly increasing consumption in Malaya of imported poultry and eggs. The year 1931 showed a considerable drop in value of such imports, but no decided decrease in quantity, in comparison with the general trend of previous year. The year 1930 was one of phenominally high imports, over 1,120,000 poultry as compared with from 500,000 to 600,000 per annum in former years.

Omitting details of 1930 on account of the unusual imports, and in the absence of detailed statistics for 1931, the year 1929 may be taken as average imports. In that year 450,528 live poultry were imported. Of these 321,000 were from Siam, 118,000 from Java, 7,000 from Sumatra and 2,000 from French Indo-China.

The number of live poultry imported from the United Kingdom and Australia, though small, is of interest as it is probable that a number of these birds are intended for breeding purposes. The import of birds from these countries is as follows:-

Year.	1926	1927	1928	1929	1930	1931
United Kingdom	79	125	15	24	716	37
Australia	154	21	105	70	20	

In 1930, the import of dead poultry was 90 tons of which 41 tons were from the United Kingdom, 22 tons from Australia, 11 tons from China and 8 tons from Hongkong.

Appendix 18.

Eggs.- In 1930, the total import of eggs, both fresh and salted, was approximately 521,000,000. Of this total 270,000,000 were from China, 191,000,000 from French Indo-China, 49,000,000 from Kongkong, 6,000,000 from Siam and 4,000,000 from British Borneo.

Values.- The following are the average values of imports:-

Poultry live per head	Year 1930	63 cents.
	Year 1931	89 "

The figures on imports during 1932 are as follows:-

January	66 cents per head.
February	68 " " "
March	63 " " "

Dead poultry imports in 1929 were valued at $1,512.10 per ton, $1,352.83 per ton in 1930 and $1,189.83 in 1931.

Eggs fresh and salted, were valued at $2.80 per 100 in 1929, $2.56 in 1930 and $1.85 in 1931. The imports for March 1932 were valued at $1.86 per 100.

Local Production.- As a very rough, but safe estimate the number of locally bred poultry consumed annually in Malaya is 2,200,000 which at an average price of 50 cents each is worth $1,100,000. Similarly the number of locally produced eggs is 160,000,000 per annum which at 2 cents each are worth $3,200,000.

Local Consumption. It may be said, on the basis of the value of average imports of poultry and eggs together with estimated local production, that the value of the consumption in Malaya of poultry and eggs amounts to approximately $7,000,000.

Appendix 19.

COSTS OF PRODUCTION OF CERTAIN CROPS .

The estimated costs of production of several crops as they apply to the small-holder, are given in the attached pages.

The figures given are controversial in every respect, they are probably on the low side.

In compiling these estimates it has been considered that all cultural operations are carried out by the holder and his family, and costs are only for actual disbursements.

Survey fees and boundary pipes or stones are omitted as it is understood that the small-holder is in possession of his land, but if this figure is necessary a rate of about $8/- per acre must be allowed for holdings of 5 acres. An average figure of $3 per acre per annum for quit rent is included.

The accompanying estimates give the information as to how the costs are ascertained, if actual cost of labour is required then the figures will be much higher and it will be necessary to cost every operation in the production of these crops.

=====

Crop.	Average Yield Over 5 years from coming into bearing.	Approximate Cost of production.	Length of time the Crop comes into Bearing.
Tea	580 lbs.	$170.00	2½ to 3 years.
Coffee	3½ pikuls	75.00	4th year.
Coconuts	Copra 6 pikuls	50.00	6th year.
Arecanuts	5½ pikuls	35.00	5th year.
Pepper	10 pikuls	250.00 Hardwood support posts.	3rd year.
Pepper	Estimate 8 pikuls	100.00 live supports.	3rd year.
Cloves	425 lbs. per acre	50.00	6th year.
Nutmegs	500 lbs.	50.00	7th to 8th year.
Nutmegs	80 lbs.	-	-
Cardamons	-	-	-
Cinnamon	1 pikul	40.00	3rd to 4th year.
Ginger	70 pikuls (undried)	75.00	9 to 10 months.
Tobacco	10 pikuls	90.00	4 months.
Tapioca	15 tons.	100.00	12 to 14 months.
Groundnuts	Cleaned nuts 11 pikuls.	30.00	3 to 5 months.

2.

Appendix 19.

TEA.

	$ Cts.
Rent on land at $3 per acre per annum for 3 years	9.00
Cost of seed (Indian) $150 per maund of 80 lbs. containing an average of 16,000 seeds per maund. Allowing 60% germination this gives 9,600 seedlings and is sufficient for two acres allowing 33% for supplies	75.00
Transport charges and Agency fees - say (Note an inspection fee of Rs.100 is charged for each consignment of Ceylon seed exported).	7.00
Cost of tools and stores	10.00
Shade trees and cover crops	5.00
Pruning mixture - say	15.00
Kwali for firing tea - Chinese method.	15.00
Drying mats or trays	4.00
Pruning mixture 5th year	15.00
Insecticides, white and poisons	5.00
contingencies	10.00
	$170.00

Yields in 2½ to 3 years.

3rd year	400	lbs. of made tea.
4th "	600	" " " "
5th "	500	" " " "
6th "	700	" " " "
7th "	700	" " " "
	2900	

COFFEE LIBERIAN.

	Per Acre.
Rents to 4th year, when in bearing	$12.00
Seed per acre - say	1.00
Planting baskets 1 cent each	3.50
Pests and diseases	5.00
Tools and stores - say	8.00
Shade trees - seed	1.00
Local made depulper $100 per acre - say	20.00
Tubs or Shanghai jars for fermentation	15.00
Manuring say per acre	5.00
Cost to 4th year	
Contingencies	4.50
	$75.00

Coffee comes into bearing at the 4th year.

Four Chinese labourers can prepare ½ a pikul of cleaned beans per day. Cost per pikul for manufacture is about $4 allowing 50 cts. wages per day.

Yields 4th year	110	lbs. per acre.
5th "	250	" " "
6th "	530	" " "
7th "	650	" " "
8th "	800	
	2340	lbs.

Average 468.

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Appendix 19.

COCONUTS.

	Per Acre.
Rents to 8th year (Talls)	$24.00
Seed say 70 plants per acre - 25 x 25 square at 10 Cts.	7.00
Tools and Stores - say	5.00
Copra sun dried nuts	2.00
Establishment of cover crop seed	1.00
Pests and diseases	5.00
Contingencies	6.00
	$50.00

Yields 6th year 10 nuts per palm - 700 nuts - 2 pikuls copra.
" 7th " 20 " " " 1400 " 4½ " "
" 8th " 30 " " " 2100 " 6 " "
" 9th " 40 " " " 2800 " 8½ " "
10th " 50 " " " 3500 " 11 " "

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No account is taken of bye-products such as fibre, toddy, or arrack.

ARECANUTS 5 ACRE HOLDINGS.

	Per Acre.
Rents to 6th year	$18.00
Seeds 10 x 10 say 435 acre at 1 cent	4.35
Supplies - say	.65
Tools and stores - say	5.00
Bags per annum per acre 5th year	1.50
" " " " " 6th "	1.50
Contingencies	4.00
	$35.00

Yields 5th year say 4 pikuls.
" 6th " " 5 "
" 7th " " 6 "
" 8th " " 6½ "
" 9th " " 7 "

28½ pikuls

Yields in Ceylon are reported to be as high as 30 Cwts. per acre, under cultivation.

Yields at Serdang have been low probably due to close planting 8 x 8 and poor soil.

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Appendix 19

PEPPER 5 ACRE HOLDINGS.

	Per Acre.
Rents to 3rd year	$9.00
Cuttings 2 cts. each 800 per acre	16.00
Baskets 1 cent each	8.00

Supports Gliricidia maculata cuttings 2 cts. each or seed at $2. per lb.

Plants 8 x 8 or 690 per acre may be closer on good land. Hardwood posts are very expensive per acre but any on the virgin land would be retained for use as supports.

Posts hardwood 10 ft. say at 20 Cts. present price.	$138.00
Spraying powder - say	5.00
Tools and stores - say	8.00
Drying mats - say	2.00

Manure.- Wood ashes or potash dressings or burnt earth -

Fish manure 1 lb. per vine say	40.00
Contingencies	4.00
Yields 3rd year 1 lb. per vine - say	5 pikuls.
" 4th " 1½ " " " "	7½ "
" 5th " 2 " " " "	10 "
" 6th	
In full bearing 8th to 12th year say	18 "

The alternative to use hardwood posts would be to use live supports such as Gliricidia maculata or Albizzia moluccana which would reduce the capitalization, by about $135 per acre making it about $100. Unless the live supports are developed for seed about 2 years before the pepper is planted, cuttings will be necessary costing about $10 per acre.

Crop returns are likely to be much smaller when live supports are used in lieu of hardwood posts.

CLOVES 5 ACRE HOLDING.

	Per Acre.
Rents to 7th year	$ 21.00
Seed.	
Bamboo pots 2½ cts. 108 per annum	2.50
Cattle manure for transplanting in the field	8.00
Tools and stores	8.00
Shade trees - seed	1.00
Spraying or dusting	4.50

Cloves would probably be planted out 16 x 16 = 170 per acre.

Harvesting consists of picking the unopened flower buds and drying in the sun on a barbacue or on mats.

Contingencies	5.00
	$50.00

Actual yields at Serdang 3½ lbs. per tree at 6 years = 310 lbs. dry cloves per acre at 7 years.

About 5 lbs. per tree can be obtained when mature say at about 10 years.

Cloves are worth $50 per pikul and can be successfully grown at Serdang.

Appendix 19.

NUTMEGS.

	Per Acre.
This has been a failure at Serdang.	
Rents to 8 years at $3 per acre per annum	$24.00
Seed - Say 150 per acre which includes supplies at 2 cts.	3.00
Bamboo pots 150 at 2½ cts. say	4.00
Cattle manure for use when transplanting in field	8.00
Tools and stores say	5.00
Shade trees cuttings or seeds planted say 20 x 20 - 108 per acre	
Adenanthera pavonina } $1	
Albizzia moluccana } $1	2.00
Contingencies	4.00
	$50.00

Bears fruits at 7th to 8th year.

Yields of mature trees about 750 lbs. nutmegs and 120 lbs. mace.

These yields may be doubled and occasionally trebled.

Preparation for market consists of the removal of the pericarp and the separation of the mace from the nutmeg, which are dried partly under shade and finished in the sun.

CINNAMON.

	Per Acre.
Rents to 4th year at $3 per acre	$12.00
Seed 6 x 6 planting about 4 seeds to 6 seeds per hole say 4 lbs. of seed per acre say	4.00
Germination is very bad unless the seed is absolutely fresh.	
Baskets 1 cent each 1,200	12.00
Shade trees say seed	1.00
Tools and stores	8.00
Contingencies	3.00
	$40.00

Yields 3rd to 4th year.

First quality bark quills 100 to 150 lbs. per acre and often more.

Manufacture and preparation for market consists of cutting the 2 year old shoots, stripping the bark and scraping the outside cuticle.

Value say 1. per lb. for 1st quality $65 chips 3d per lb.

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Appendix 19

TOBACCO.

	Per Acre.
Rent for ½ year	$1.00
Seed - say ½ oz.	1.00
Calico cloth for nursery beds - say 3 beds 66 ft. x 4 ft. at $2.26 - say	7.00
Tools and stores	5.00
Insecticide - say	5.00
Attaps or lalang shed - say	25.00
Cattle manure 10 tons at $1 per load	25.00
Phosphatic and Potasic manures - say	10.00
Bags 25 at 12 cts.	3.00
Contingencies - say	7.50
	$ 90.00

Matures in 4 months from sowing in nursery.
Yields about 10 pikuls - say $25 = $250.

TAPIOCA 5 ACRE HOLDING.

	Per Acre.
Rent for one acre	$ 3.00
Cuttings per acre -- say 3 x 3 - 5,500 with supplies. 1 cent each.	55.00
Tools and stores	5.00
Costs of bags	5.00
Contingencies	2.00
Yields in 12 to 14 months	
Yields about 15 tons per acre	
Transport to Factory - say	30.00
	$100.00

Sold to factories green - say $1.00 per pikul $240.

Appendix 19.

GINGER 5 ACRE HOLDING.

	Per Acre.
First year rent	$3.00
Rhizome for seed planted 3 ft. x 12 in. 400 lbs.	40.00
Manure cattle 10 tons per acre - say 25 loads @ $1	25.00
Tools and stores - say	5.00
Contingencies	2.00
	$75.00

Crop yields at Serdang 70 pikuls average, crop is mature in 9 to 10 months.

The preparation for market -

1. Sun drying.
2. Boiling for about ½ hour and afterwards dried and sold, as dry ginger it reduces to about 20% of the weight on fresh state.

   20% of 70 pikuls = 14 pikuls at say $20 per pikul. $280 per acre.

   Fresh ginger about 5 cts. per kati 7,000 catties $350.

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GROUNDNUTS.

	Per Acre.
Rent $3 per acre per annum ½ year	$1.50
Seed 60 lbs. per acre at 25 Cts. per lb. planted 1½ ft. x 9 in - say	15.00
Rat poison	2.00
Tools and stores	5.00
Bags	2.00
Contingencies - say	4.50
	$30.00

Yields at Serdang. $1,250/nuts in shells or 1,000 to 1,500 1,200 lbs. per acre cleaned nuts.

Recorded yields up to 4,000 lbs.

Matures in 3 to 5 months according to variety.

Preparation for market consists of drying in the shells.

The weight of shells to nuts is about 25%.

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Appendix 20.

TAPIOCA.

Trade.- The Malayan trade is indicated by the following statistics.

Malayan Imports and Exports Tapioca 1931.

Product	Imports.		Exports.	
	Tons.	Value $	Tons.	Value $
Flake	1	80	9,743	700,825
Flour	3,429	254,436	2,938	231,696
Pearl	1,600	110,942	20,606	1,596,719
Refuse	1,226	14,994	24	728
Total	6,256	380,452	33,311	2,529,968

The above indicates a considerable local production and also a trade in the import of tapioca flour and its conversion to pearl or flake tapioca. Exports are to various countries.

During the past nine years the net exports of tapioca products has varied from 20,943 tons in 1928 to 31,195 tons in 1930. It is seen, therefore, that there has been no falling off in local production during the past few years.

Areas.- In 1931 there were 42,000 acres under this crop in Malaya. The chief centres of production were Johore, 20,000 acres, Kedah 10,000 acres, Pahang 8,000 acres, and Selangor 1,600 acres.

Almost invariably it is grown as a catch crop with a more permanent form of cultivation - generally rubber. One instance is noted when the crop has been grown with oil palms.

Prices.- The average prices per pikul in Singapore during 1931 were:-

Small flake $4.73, Small pearl $6.41, Medium (Penang) $5.21, Seed pearl (Penang) $4.91.

The average annual prices per pikul for the past nine years were as follows:-

Year.	Small Flake	Small Pearl	Medium Pearl.
1922	8.77	-	9.08
1923	12.00	13.28	13.04
1924	11:60	12.71	12.67
1925	6:29	7.83	7.52
1926	5.74	7.64	7.75
1927	6.33	7.69	7.14
1928	8.21	8.31	8.39
1929	6.29	7.80	8.25
1930	4.73	6.91	7.57

Appendix 21.

COFFEE.

Trade.- A considerable trade in coffee is centred in Singapore, as is shown by the following statistics:-

Malayan Imports and Exports of Coffee 1931.

	Imports.		Exports.	
Raw	5,301 tons	1,606,101	2,314 tons	689,926
In Tins	295,158 lbs.	69,822	26,430 lbs.	13,419

The sources of raw coffee imported into Malaya as indicated by the 1930 imports (total 6,000 tons) are Java 2,500 tons, Sumatra 2,500 tons, Bali and Lombok 800 tons. Exports (3,000 tons) were to various parts of the world in lots (per annum) of a few hundred tons each.

Of the 636,000 lbs. of coffee in tins imported in 1930, 536,000 lbs., came from Java, 78,000 lbs. from Sumatra, 10,000 lbs. from the United States of America, 9,000 lbs. from India and 1,300 lbs. from the United Kingdom.

The average annual net imports of coffee of all description into Malaya are over 8,000,000 lbs. valued at over $2,000,000.

It will be noticed that the average net imports are approximately equal to that of tea.

Values.- The average declared trade value of raw coffee imported into Malaya was 30 cents per lb. in 1929, 20 cents in 1930 and 13.7 cents in 1931.

The average wholesale price in Singapore of Java Robusta coffee best quality for the second half year 1931 was $17.93 per pikul and of Palembang coffee $12.91 per pikul. Palembang coffee in April 1932 averaged $15.65 per pikul.

Local Production.- At the end of the year, the area under coffee in Malaya was 13,000 acres. Of this total 3,500 acres were in Johore, nearly 5,000 acres in Selangor, 800 acres in Negri Sembilan, 1,000 acres in Perak and 1,300 acres in Pahang.

Local Consumption.- Based on net imports, it would appear that the local consumption of coffee is approximately 8,000,000 lbs. (disregarding the crop obtained from existing areas under this crop in Malaya).

On a basis of 5 pikuls of dried beans per acre of coffee, it will require an additional 12,000 acres to be planted and in bearing in Malaya to make the country self-supporting in this respect.

Locally produced and ground coffee is now available on the Malayan retail market and it is reported that other similar ventures in marketing are in contemplation.

Appendix 21.

COFFEE.

Appendix 22.

Present Position.- Information as to the present position of the coffee industry is given briefly in the memorandum dealing with statistics relating to imports, exports, values, local production and consumption of coffee in Malaya. The present low price is largely due to surplus world stocks, but local production is to a small extent assisted by the existing import duty.

Possible Extension.- It is considered that the extension of coffee cultivation in Malaya is both possible and desirable. with the exception of a few large areas where coffee is cultivated as a main crop, the bulk of the crop is obtained from small areas owned by Malays, Javanese and Chinese, and the land is in many cases interplanted with other crops such as rubber and coconuts. While the quality of the prepared coffee is on the whole fair, and the flavour, in some districts is said to be appreciated by the local Malay population, improvements in methods of preparation are required in order to establish a general local demand for the small-holder's product.

Coffee is considered to be a crop capable of extension by Malays since they should, in many cases, be able to produce at a low cost owing to cheap labour.

Methods of Extension.- The successful issue of any efforts to extend coffee cultivation among the small holders will largely depend on organisation of finance and marketing facilities coupled with instruction in the correct methods of cultivation and preparation of the crop.

In order to extend the area under coffee cultivation, it has been suggested that replacement of existing uneconomic rubber holdings by other crops, including coffee, should be considered, as well as alienation of suitable land on favourable terms. Supplies of planting material should be obtainable from such centres as Agricultural Experimental Station and Demonstration Plots, at a very cheap rate, since the small-holders are at present unable to raise capital to finance new ventures.

Appendix 23.

COFFEE.

The appreciable areas under coffee cultivation in some of the different states of the Peninsula are as follows:-

Perak	1,051	acres.
Malacca	547	"
Selangor	4,838	"
Negri Sembilan	826	"
Johore	3,500	"
Kedah	509	"
Pahang	1,334	"
Dindings	514	"

State.	Coffee.	Arecanut.	Tea.	Kapok.
Perak	986	947	106	281
Selangor	4,838	194	757	11
Negri Sembilan	826	28	8	-
Pahang	1,334	74	709 x	582
Malacca	420	103	-	-
Penang	-	-	-	-
Singapore	53	48	-	-
Dindings	514	4	1	-
Province Wellesley	-	557	-	-
Johore	3,500	9,550	-	-
Kedah	509	4,565	700	138
Kelantan	-	-	-	-
Trengganu	-	-	-	-
Perlis	-	-	-	-

x Of which 609 is upland tea.

Appendix 24.

ARECANUTS.

Present position.- See the separate memorandum dealing with statistics relating to imports and exports grades, countries of production, local production and prices.

Possible Extension.- Cultivation of arecanuts can be extended and is extending gradually in Johore where Collectors of Land Revenue encourage the cultivation of this crop and the terms of alienation are favourable to the cultivation. Malays in other districts are inclined to consider this crop as a casual source of revenue.

Methods of Extension.- It has been suggested that the imposition of a small tax on imported nuts would encourage local dealers to buy local nuts.

The distribution of seed of good varieties would be advisable, and, if possible, the establishment of pure stands of selected varieties should be attempted.

Improvement of existing methods of preparation, by demonstration and instruction in the preparation of nuts for market should also be attempted. Co-operative marketing should be organised.

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Appendix 25.

ARECANUTS.

Trade.- A considerable trade is established in Singapore with imported and locally-produced arecanuts.

Malayan imports in 1931 amounted to 38,776 tons valued at $4,159,951, while exports for that year were 58,042 tons, valued at $6,964,172.

The net exports in 1931 were thus 19,266 tons valued at $2,804,221 as compared with 23,254 tons valued at $5,149,019 in 1930. The 1930 figures more closely approximate to the average annual net exports and values.

Practically the whole of imports are from Sumatra (about 30,000 tons) and Java (7,000 tons annually) Siam and Dutch Borneo exports to Singapore annually about 3,000 and 1,000 tons respectively.

In1930 the total exports from Malaya were 66,000 tons. Over 58,000 tons of this went to British India and Burma. Hongkong took 1,000 tons, French Indo-China 3,000 tons, French China 2,700 tons and Siam 1,000 tons. These figures are representative of the annual disposal of this product from the Malayan market.

Grades.- There are various methods of preparing the arecanut for market and various grades recognised by the dealers.

The methods of preparing are as follows:-

Pinang Blah	-	The nuts are split and then sundried.
Pinang Kossi	-	The whole nut is dried.
Pinang Salai	-	The nuts are partly dried by smoking.
Pinang Asin	-	Unripe arecanut is harvested and cured in salt.

The Singapore market regularly quotes for the following grades, quality depending largely on country of origin and care in preparation; Palembang, Bali Whole, Split, Red Whole, Kelantan split, sliced.

Countries of Production.- The following represents the approximate annual exportable surplus of arecanuts from the most important countries of production.

Netherlands India	35,000 tons.
Malaya	20,000 "
Ceylon	7,000 "

Malayan Production.- The Malayan production of arecanuts is indicated by the net exports, although there must be a considerable local consumption. The total area under this crop in Malaya in 1931 was estimated to be 16,000 acres of which 9,500 acres is in Johore, 4.500 acres in Kedah. There are also considerable unascertained areas in Kelantan and Trengganu as is indicated by the very considerable exports from these two States. In Selangor there are 1,000 acres (approximately).

Prices.- Arecanut prices have shown great fluctuations in different years. The Penang Chamber of Commerce averages

2.
Appendix 25.

annual figures for betelnuts No.1 are as follows:-

1922 - $7,69; 1923 - $9.32; 1924 - $13.95; 1925 - $16.04;
1926 - $14.54; 1927 - $8.94; 1928 - $8.60 ; 1929 - $9.10;
1930 - $8.95.

The following are the latest average prices per pikul of the various grades (Singapore April 1932):- Palembang $3.24; Bali Whole $3.32; Splits $4.06 to $5.58; Red $6.55 to $7.61; Sliced $10.70 to $12.85; Kelantan Split $5.06 to $5.49, the prices within each range depending upon quality.

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Appendix 26.

GROUNDNUTS.

Present Position.- See memorandum dealing with imports, exports, production and prices. This crop has in some districts increased in popularity amongst Chinese smallholders. It is occasionally grown as a rotation crop with tobacco and a few cultivators grow it on the drier areas in rice fields between the seasons. The oil obtained from local nuts is said to be inferior in quality and quantity to oil obtained from Javanese varieties. Whether this is a fact or whether it is due to local methods of extraction is a point on which information is required.

Possible Extension. The extension of the area under groundnuts is considered to be possible and desirable.

Methods of Extension.-

(1) Erection of groundnut oil mills.

(2) Organisation of marketing.

(3) Distribution of good quality seed.

(4) Instruction and demonstration of planting methods etc. on Demonstration Stations.

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Appendix 27.

GROUNDNUTS.

Imports.- Groundnuts and kachang oil are imported into Malaya in large quantities for local consumption.

The average annual net imports for the past nine years (1923 - 1931) were -

Groundnuts	-	7,271 tons	valued at	$1,133,461.
Groundnut oil		10,710 "	" "	$4,001,133.

The following are the total Malayan imports and exports of these products in 1930.

	Imports.		Exports.	
	Tons.		Tons.	
Groundnuts	9,553	1,221,929	1,607	219,842
Groundnut oil	14,431	4,438,277	1,245	420,178

The groundnuts imported into Malaya come almost entirely from Java.

Rather more than two-thirds of the imports of kachang or groundnut oil comes from China, the remainder being from Java (one-sixth) and Hongkong. Exports of groundnut oil are mainly to Sumatra and other Dutch Islands and to Sarawak.

World Production.- In round figures, the world production of groundnuts is as follows:-

India	700,000 tons.
China	100,000 "
Nigeria	120,000 "
Gambia	70,000 "
Senegal	440,000 "
	1,430,000

The above does not take into consideration consumption in countries of production, but only exportable surplus.

Malayan Production.- Negligible.

Prices.- Groundnut oil sells retail in Malaya at the present time at prices around 25 cents per kati.

The annual average declared trade value per cwt. of imports are as follows:-

1924 - $19.52; 1925 - $22.62; 1926 - $20.74;
1927 - $21.10; 1928 - $21.76; 1926 - $19.83;
1930 - $15.32; 1931 - $11.27.

Appendix 28.

SPICES.
(Excluding Arecanuts and Pepper)

Import and export records show a trade in cardamons, cassia, cinnamon, cloves, coriander seeds, cubebs, ginger, mace, nutmegs and "other sorts of spices".

The following table represents the trade in such spices.

Malayan Import and Export of Certain Spices 1931.

Product	Imports.		Exports.	
	Tons.	$	Tons	$
Cardamons	104	104,435	105	119,512
Cassia	197	21,872	128	17,759
Cinnamon	32	5,482	34	6,601
Cloves	289	157,722	347	246,335
Coriander seeds	2,690	318,973	1,172	169,941
Cubebs	74	33,742	91	53,113
Singer	317	21,824	31	6,310
Mace	161	131,391	155	145,558
Nutmegs	1,690	347,483	1,217	459,801
Other sorts	35	15,004	8	1,271

Malayan Production.- Of the above spices, the only one cultivated on a commercial scale in Malaya are cloves and nutmegs. From the latter is also obtained mace which is exported.

The total area under spices in Malaya is placed at 800 acres. Penang and Province Wellesley still have nutmeg gardens and a certain amount of cloves. Nowhere else are there spices imported.

Appendix 29.

SPICES.

Present Position.- See separate memorandum dealing with imports, exports, values and local production.

The areas under spices are scattered and are usually inter-planted with rubber and other kampong crops. Ginger is sometimes grown on padi land adjoining houses between padi-crop. Since it gives a fairly quick return it is more in favour as a crop than other spices which if grown are usually neglected.

Ginger is grown by Chinese market gardeners in Penang and Province Wellesley and it has also been grown on the Southern Highlands of Cameron Highlands.

There are about 300 acres of cloves and 70 acres of nutmegs in mixed and scattered cultivation in Penang and Province Wellesley. The cultivators are all Chinese, chiefly Khehs, and they appear to be satisfied with the poor prices received from dealers.

Trade with Europe in nutmegs and cloves has been killed by competition of West Indian nutmegs and mace and Zanzibar cloves. The market is uncertain. Damage by pests has been serious. Cloves have been grown inland very successfully at the Experimental Plantation, Serdang, and were not damaged by pests. Nutmegs have also been grown, but did not grow vigorously until manured heavily with cattle manure.

Possible Extension.- Certain spices, i.e. Cinnamon and ginger might possibly be extended. Ginger appears to be a paying crop for small-holders at present prices ($4 - $5 per pikul for a fully matured crop). Cardamons require altitude and could possibly be grown on Cameron Highlands. There is room for extension of cloves and nutmegs in Penang and Province Wellesley if useless rubber is cut out and slopes properly terraced. (A movement in this direction has already begun). These crops could also probably be grown in other parts of the Peninsula if a market for the crops could be secured. Cloves and nutmegs however do not give a quick return and cloves are often seriously damaged by a cerambycid borer in Penang and Province Wellesley,

Methods of Extension.- By -

(1) The cultivation of spices on Demonstration Stations and distribution of planting material therefrom at a cheap rate.

(2) Increased marketing facilities by holding produce fairs etc.

(3) Co-operative marketing.

(4) Alienation of suitable land at a cheap rate.

Appendix 30.

SUGAR.

Present Position.- See separate memorandum dealing with statistics relating to imports, exports, values etc.

Possible Extension.- Immediate extension is limited by lack of suitable land in the neighbourhood of towns where a market for sugar-cane for chewing exists.

The chief limiting factors in any scheme for general extension of sugar-cane cultivation in Malaya are -

(1) The fact that owing to large surplus world stocks sugar can probably be imported more cheaply than it could be produced locally unless high protection were given.

(2) The necessity for the erection of large and expensive factories for the manufacture of sugar.

(3) Difficulty of raising capital for any such venture.

Appendix 31.

SUGAR.

In 1931, the net imports of sugar into British Malaya amounted to 89,406 tons, valued at $6,507,317 and of sugar cane 1,354 tons valued at $44,715. In addition net imports of jaggery and molasses amounted to 1,747 tons valued at $92,438.

The net imports of sugar and its by-products was therefore 92,507 tons, valued at $6,644,470.

The average annual net imports of sugar and its by-products for the previous 5 years were 87,718 tons, valued at $11,425,266.

There are a few points of great interest in connection with the sugar consumption of Malaya. Firstly, sugar is used in the pineapple canning industry. It is estimated that the annual consumption in this industry now amounts to about 6,500 tons of sugar, valued at 1931 prices at about $468,000.

Secondly, there is an export trade in sugar candy. The net exports of candy in 1931 were 652 tons, valued at $59,670. This trade is rapidly diminishing. It reached its peak in 1925 when net exports were 12,490 tons valued at $2,535,285 while the peak of highest values was in 1924 when net exports were 11,497 tons valued at $3,088,719.

Thirdly, during the past three years an import trade has come into existence for sugar cane.

Previous to 1929 net imports of sugar cane were negligible. The figures for the past three years are as follows:-

Net Imports into Malaya of Sugar-cane.

Year	Tons.	Value $
1929	165	12,820
1930	1,160	56,254
1931	1,354	44,715

Practically all the sugar imported into Malaya is cane sugar from Java. Sugar-cane is imported from Hongkong and China. Sugar candy is mainly exported to Ceylon, Hongkong, China and French Indo-China.

Sugar production in Malaya is negligible.

Sugar Consumption in Malaya.- Based on the 1931 Population census, and deducting the amount of sugar used in the pineapple canning industry, the per capita consumption of sugar in Malaya amounts to 42 lbs. per annum.

APPENDIX 31.

SUGAR.

Appendix 32.

TEA.

Present Position.- Information regarding imports, exports prices and Malayan production of tea is given in the separate memorandum dealing with statistics relating to tea.

Possibility of Extension by Small-holders. It is generally considered that tea would not be a suitable crop for Malay kapong cultivation owing to the diligent husbandry and skilful preparation required.

In Ceylon tea is grown by many small-holders who dispose of the fresh leaf to neighbouring large estates.

Tea is cultivated in different parts of the country by Chinese small-holders. The methods of preparation are crude, but the product although unattractive is readily disposed of to Chinese of the poorer classes.

Efforts to extend tea cultivation would probably succeed better amongst Chinese, but in order to produce a higher grade product likely to find a general local demand it would be necessary for small-holders to erect co-operative factories in districts where there is no existing estate factories to which fresh leaf could be sold.

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Appendix 33.

TEA.

Imports.- The imports of tea into Malaya in 1931 amounted to 7,516,051 lbs. valued at $1,924,707, while exports from Malaya were 667,409. valued at $256,776. The net imports (which may be taken as representing the Malayan consumption) were therefore 6,848,642 lbs. valued at $1,667,931. The average annual net imports for the years 1923 - 1930 inclusive amounted to 8,572,176 lbs. valued at $3,353,637.

The consumption of tea in Malaya is therefore very considerable. The per capita tea consumption in Malaya is approximately 2 lbs. per annum. This, in comparison with countries other than the United Kingdom, the Irish Free States and the Dominions, is high.

As indicating the class of tea most in favour, the following figures of imports into Malaya in 1930 are of interest.

China	4,700,000 lbs.
Hongkong	2,200,000 "
Ceylon	1,500 "
Java	700,000 "
India	360,000 "
Japan	140,000 "
Sumatra	64,000 "

Exports were chiefly to -

Sumatra	224,000 lbs.
India	211,000 "
Siam	172,000 "
Sarawak	109,000 "
Netherlands East Indies (Other than Sumtra)	126,000 "

Prices.- The average declared trade values of tea imported into Malaya was in cents per lb. 39 in 1929, 34 in 1930, and 25.6 in 1931.

The average market price of tea (retail) in Singapore in 1930 was 98 cents per lb. for Ceylon and 62 cents per lb. Ceylon Medium leaf, 52 cents per lb. for Ceylon (dust). These prices do not take into account the very large consumption of cheap tea sold loose to Chinese at prices varying from about 15 to 40 cents per kati.

Malayan Production. Tea is cultivated in small area by Chinese in various parts of the country. There has been increased activity in tea planting on estates during the past two or three years. At the end of 1931 the area under tea in Malaya (excluding a great deal of the small-holders' areas) was 2,281 acres of which 600 acres was upland tea. An area of 700 acres of low-land tea exists in Kedah, while there are 757 acres in Selangor.

In order to render Malaya self-supporting in the product, an additional area of approximately 20,000 acres of tea in bearing would be required.

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Appendix 34.

MEMORANDUM.

The progress of the Co-operative Societies Department has been retarded since its inception eleven years ago by the absence of economic data from which correct conclusions could be drawn as to what was in any particular area the most pressing "need in common" which it is the business of a co-operative society to meet. Much of the necessary information is available in Land, District and other offices, but has not been collected, while a great deal of it yet remains to be collected in a suitable form.

2. It is the realisation of the necessity for more accurate information which has led to the drawing up of the attached schedule of required information. It is concerned principally with the economic position of the Malay raiat and information regarding other races is only required in so far as it affects the position of the Malay raiat. It is essential that officers of the Department should understand the present position of the raiat accurately before they endeavour to embark upon new schemes designed to alter or improve the existing situation.

3. Hence, every effort should be made to collect the required information. It should be done carefully and systematically so that bit by bit there will grow up a mass of economic data relating to each district which will be of great value to those engaged in planning the social and economic development of the District.

4. In collecting this information, officers should be careful to obtain the permission of the officers by whom the records are kept. The schedule gives a brief statement of the sources from which the data may be obtained and of the reasons why the information is necessary. Due regard should be paid to the objects in view when the information is being collected, as much time may thus be saved.

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Appendix 34.

ECONOMIC DATA TO BE OBTAINED IN RESPECT OF EACH DISTRICT.

1. Find out the Nature of Agricultural Cultivation in the District.

Means.- (a) Reports in Land Office - from Settlement Officers, Penghulus, Ketuas, etc.

(b) Reports by Officers of the Agricultural Dept.

(c) Reports by Officers of the Rubber Research Institute.

(d) Survey Maps.

(e) Mukim Registers - Land Bailiffs' Returns.

(f) Personal observation.

Object.- The scope of the enquiry is limited to the small Malay agriculturist, hence it is first necessary to classify the main kinds of agricultural cultivation in the District.

2. Find out the Number, Area and Nationality of Registered Small-holders. (By Mukims).

Nationalities to be classed under (a) Malays, (b) Chinese, (c) Northern Indians, (d) Southern Indians & Ceylonese, (e) Others.

Means.- Mukim Registers.

Object.- (a) It is important to know the average acreage per holding, as it may be found that many holdings are too small to be economic.

(b) It is important to know the extent to which other races than the Malay have come into possession of small holdings.

3. Find out the Crops Grown on the Small-holdings enumerated in 2.

Means.- (a) Land Office, Register of Cultivation (Rubber).

(b) Reports by Officers of the Rubber Research Institute.

(c) Reports by Officers of the Agricultural Department.

(d) Reports by the Statistical Department.

Object.- The economic problems of the raiat are largely dependent on the nature of the crop he cultivates, hence the need for accurate data on this subject. (Enquiry under this heading is to be limited in the first instance to one mukim in each District planted with each main crop.)

4. Find out the area of State land in the District.

(a) Area under Forest Reserves and Catchment areas.

(b) Other reserves: e.g.Railways, P.W.D., Grazing, firewood, etc. etc.

(c) Land available for immediate alienation (from this should be excluded very hilly land which, though available, would not normally be suitable for alienation to small-holders).

(d) Land available for alienation subject to improvement e.g. drainage.

Means.- (a) Gazette Notifications.

(b) Mukim Index and plan.

Object.- The Malay population of the country is increasing. It is important to know what room there is for expansion and further settlement in each district.

5. Find out the Population by Nationalities, by Mukims and by Trades.

Means.- From District Census Returns.

Object. The difficulties attendant upon the organisation of Malay raiats to meet their common needs will depend to a considerable extent on the activities of other races in the area. (Enquiry under this head may in the first instance exclude areas containing large towns.)

6. Find out the Density of the Population, by Races and by Mukims.

Means. From District Census Returns.

Object. This enquiry is related to the last. One would expect that persons in a densely populated agricultural area either (a) work harder, or (b) work more skilfully, or (c) have better marketing arrangements, or (d) have a lower standard of living than agriculturists in a less densely populated area. Also, one might expect to find uneconomic fragmentation of holdings.

7. Find out What Credit Facilities are available for the Raiat.

(a) Pawn brokers - their number and situation.

Means.- From the District Office or Police Office.

(b) Chettiars - their number and situation.

Means.- Personal enquiry. Labour Office.

(c) Government.

Means.- From the District Treasury.

(d) Joint Stock Banks.

Means.- Personal enquiry and Directories.

(e) Traders and others.

Means.- Personal enquiry.

Object.- Before suggesting any change in the credit supply of the raiat, it is necessary to have data as to the sufficiency and suitability of the present supply.

8. Find out the Existing Registered Rural Indebtedness (from 1926) by Mukims and by Malay Reserves.

(a) Nationality of chargor.

(b) Nationality of chargee.

(c) Amount.

(d) Rate of interest and period.

(e) Area charged.

(f) Date of registration.

Means.- From Register of Charges and Register of Titles in Land Offices.

Object.- There may be many small-holders who are clearly insolvent. It would be false policy to urge raiats to organise themselves if from the beginning there is no hope of success. It is useless to start any economic organisation of the raiats until the extent of their indebtedness is known.

9. Find out the Number of Transfers of Small-holders by sale from 1926 (Inclusive) by Mukims.

(a) Nationality of Transferor.

(b) Nationality of Transferee.

(c) Area of land.

(d) Price paid.

Means.- From memoranda of sales in Land Offices.

Object.- It is frequently asserted that land is passing out of the hands of the Malay raiat. The formation of Malay Reserves is based on this belief. It is important to have exact data on this point.

4.
Appendix 34

10. Find out the Number of Registered (and, where possible, Unregistered) Leases and Small-holdings by Mukims.

(a) Nationality of Lessor.

(b) Nationality of Lessee.

(c) Period of Lease.

(d) Area Leased.

(e) Consideration.

Means.- Register of Leases in Land Office.

Object.- This enquiry is related to No.9. It is important to ascertain the extent to which the temporary control over small-holdings is passing out of the hands of the raiats.

11. Find out the Chain of Marketing of Each of the Principal Commodities (a) Produced (b) Consumed in the District.

Means.- By personal enquiry.

Object.- It is often asserted that the raiat's biggest loss arises from his poor marketing organisation. If so, it is first necessary to study in detail the existing marketing chain before it can be possible to devise a better.

12. Find out What Cottage Industries exist amongst the Small-holders.

Means.- Personal enquiry.

Object.- Owing to the fall in prices it will be necessary to find additional sources of revenue if the raiat is to maintain a reasonable standard of living.

13. Find out if any Subsidiary Occupations are Available for the Raiats - By Mukims.

Means.- Personal enquiry.

Object.- Owing to the fall in prices it will be necessary to urge the raiats to put their spare time to profitable use, if a reasonable standard of living is to be maintained.

14. Find Out the Cost of Living of a Malay Family of Four in certain selected kampongs and at the district Headquarters.

(The cost of living will be based on the schedule of necessaries prepared as a 'Family Budget' by the Economic Educational Officer.)

Means.- By personal enquiry and from Penghulus, Ketuas, etc.

Object.- It may be possible to deduce from the ruling prices in various areas whether joint purchase or joint sale would be beneficial. One may also be able to obtain an indication whether in a time of falling prices (a) raiats are borrowing

to maintain their standard of living or (b) raiats are accepting a lower standard.

15. Find out What Modes of Transport are Available in the District (a) For Persons, (b) For Goods, and their cost.

Means.- Personal enquiry.

Object.- The cost of transport is an essential item in marketing and in ascertaining whether prices are reasonable in any given area, the cost of transport must be taken into consideration.

16. Find out the Physical Condition of the raiats by Mukims.

Means.- District Health Officers and Inspectors. Travelling Dispensaries.

Object.- It is impossible to make A1 farmers out of C3 raiats. Hence, in an area where disease is rampant, the chief economic need may be better health and not cheaper credit or improved marketing.

17. Find out the Degree of Literacy of the Raiats by Mukims.

Means.- District Census Returns.

Object.- It is more difficult to organise the illiterate on a "self-help" basis than the literate. Hence, it is desirable to know from the beginning to what extent the raiats in a given area can read and write.

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Appendix 35.

DISTRICT ECONOMIC BOARDS.

In every District there are many persons giving the raiat advice on problems connected with his livelihood. There is the District Officer who is the executive head of the administration of the District; there is the Agricultural Field Officer who with his Malay Agricultural Assistants is responsible for supplying technical advice on agricultural matters to the raiats of the District; there is the Assistant Director of Co-operation who with his Malay Co-operative Officers is responsible for supplying technical advice on the economic organisation of the raiat on co-operative lines; there is the Inspector of Schools who with his subordinates is responsible for the education of the children of the District; there is the Health Officer who with his assistants is responsible for technical advice on kampong sanitation; there is the Veterinary Officer and his assistants who are responsible for technical advice on animal husbandry, and there are others. At present, all these are working more or less on independent lines. There is no agreed policy. Each Department makes its own and follows it with little regard to the work of other Departments. The result is lack of unity, confusion of policy and overlapping. With all this technical assistance available, one would imagine that the lot of the raiat should be enviable, yet if the truth be told, the raiat is little conscious of his alleged good luck. He rarely comes in contact with any of these people and he has little or no faith in the gospels they preach. Of all these officials he has most regard for the District Officer whose advice is more likely to be taken on trust than that of any-body else. Yet the District Officer has little knowledge of the activities of these officers in his District. He gets certain reports from them and he is consulted by them on certain problems. Some may visit him once a month or so to discuss the work of the month. But, to a large extent each Department works on in its own circle according to its own plan without knowledge of the efforts and plans of other Departments working in the District. This is clearly inefficient and should be remedied.

The Co-operative Societies Department invites discussion on a solution of this problem on the following lines:-

> It is suggested that in each District there should be formed a Board, which I suggest should be called either the.....District Economic Board or the .....District Development Board. Such names will cause no jealousy and will cover the full purposes of the Board.

The purposes of this Board will be mainly to co-ordinate the activities of all Departments working in the District. The Board will have no executive powers. It will be deliberative and its deliberations will be confined to such economic questions or such developments as primarily concern the peasant proprietor. In each District, the District Officer should be Chairman of the Board. The work of the Board is to think out economic policies and improvements for the District, hence no one should be allowed on the Board who cannot supply valuable information relating to the economic development of the District. No one should be invited to join the Board because of his social position or his official position unless

he can add to the solution of local economic problems. I have mentioned a number of officials who are more or less actively engaged in most District, but a Board should be as small as possible if it is to do its business efficiently. Hence I suggest that the nucleus of the Board in each District shall consist of the District Officer (Chairman), the local Agricultural Officer and the local Co-operative Officer. By 'local' I mean the officer stationed in the District. This is a District Board and should as far as possible consist of District Officials. This raises certain difficulties. For example, every District has not got a Co-operative Officer to itself. In that case, the person on the Board should be the officer in whose Circle or area of operations the District is. In the Agricultural and Co-operative Departments, he will normally be a Malay, whose business it is to study the particular agricultural or co-operative problems of the District in greater detail than can be done by his more senior officer who has to spread his activities over a much wider area.

There will arise, however, problems of such importance that the Board may desire the advice of more experienced officers. I therefore suggest that while the local officer should be the representative on the Board it should be the established practice of the Board to permit the senior officers of the department concerned to attend meetings and to take part in the discussions. If it so desire, the Board may definitely invite such officers to attend specified meetings in connection with particular items on the agenda. While the District Officer, the local Agricultural Officer and the local Co-operative Officer will form the nucleus of the Board, they will have the power to co-opt anyone who may be able to contribute valuable suggestions or may invite anyone to join the Board either permanently or for a specific period or to deal with a specific subject. An arrangement such as this makes for easy expansion when such is necessary and avoids the overloading of the Board with persons who might be better employed elsewhere. It also enables each Board to suit its composition to the particular needs of the District.

It is not proposed that, in the first instance at least, the Boards should be gazetted or formally constituted in any way. Such questions can be raised when sufficient experience has been gained.

It may be as well to indicate some of the possibilities of such Boards:

(1) One of the slump slogans is "Plant more vegetables". Isolated cries are less effective than an organised chorus. The District Officer directly and through his Settlement Officers and Penghulus can recommend the planting and indicate where land on Temporary Occupation Licence can be obtained.

The Malay Agricultural Assistant can suggest what vegetables are suitable to the soil and advise on how to plant them.

The Malay Co-operative Officer can suggest how organised sale can best be arranged if a surplus is available. Local fairs might be started in suitable areas.

(ii) This country imports large quantities of foodstuffs, some of which could be economically produced here. For example, in the first four months of this year, Malaya has imported over 6,000,000 fresh and salted eggs (net) at a declared value of $107,086. It does not seem impossible to increase, the keeping of fowls by kampong Malays. In addition to the eggs imported during the first four months of this year, Malaya has imported 220,744 head (net) of poultry at a declared value of $156,223.

All the teachers are available:- the Veterinary Officer, the Agricultural Officer and the Co-operative Officer. In the past, virtually no progress has been made. An Economic Board should be better able to achieve success in this line.

(iii) Instruction of the raiat in the production of a better product: rubber, coconuts, copra, betel, fruits etc. etc.

(iv) Instruction of the raiat in the better sale of his product.

(v) Instruction of the raiat in better kampong sanitation.

(vi) Instruction of the raiat in better use of money.

(vii) Instruction of the raiat in better farming methods with better seeds.

(viii) Investigation as to what is the minimum economic holding in the District for various crops at various prices.

(ix) Enquiry into rural indebtedness.

(x) Enquiry into the economic working of the Malay Reservations Enactment in the District.

(xi) Investigation as to the extent to which holdings in the District are fragmented.

(xii) The preparation of a colonisation policy for new land in the District. There is almost no limit to the possible activities of such Boards.

Such Boards could help to organise small local shows at which the products of the local area could be exhibited. Such shows would entail very little expense and could be made use of for educational purposes. Such shows could in certain areas be organised in connection with local fairs. The raiat would thus learn to appreciate a better product produced under kampong conditions by persons whom he knows. It should not be impossible to rouse a desire for instruction in better farming.

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Appendix 36.

DISTRICT AGRICULTURAL REGISTERS.

Memorandum by the Agricultural Adviser to the Secretary of State for the Colonies.

The Conference of Director of Agriculture, 1931, was of the opinion that the maintenance of district registers should form a part of the duties of district agricultural officers, and recommend that a memorandum should be prepared and circulated for general information.

The district agricultural register forms a permanent record, in convenient form, of the agricultural practices of the particular area to which it relates, and should include data concerning experimental trials or demonstrations which have been carried out under the supervision of agricultural officers and the results secured therefrom. Such registers not only assist the officers concerned in their work, but they provide readily accessible information for new officers when transfers occur. They are also of considerable value to senior officers during tours of inspection, and tend to build up a record of accumulated knowledge concerning agricultural progress and development.

District registers have already been started in Tanganyika Territory, Uganda, Sierra Leone, and, in somewhat modified forms, in Kenya and Palestine. Their adoption in other Colonies is under consideration, and experience indicates that, when once adopted, the system is found to be indispensable and to have numerous obvious advantages over any method whichdepends upon office correspondence files. It is not suggested that a stereotyped form can be used throughout the Colonial Empire, but the following suggestions may be of value:-

At the outset, it is necessary to realise that these registers should not be overelaborated in respect of details. If over-elaboration is attempted these registers may absorb too much of the officer s time, and their maintenance become a labour rather than a work of interest.

Experience indicates that the most suitable form is the loose-leaf book. This may consist of a stiff-covered file into which loose foolscap sheets can be inserted and permanently attached.

The register should be kept at the Agricultural Office and should be written up by the officer on return to the Station from tour notes. Records, which should be initialled by the recording officer, should be as concise as possible and should be registered under sub-heads. An index to the register should be maintained.

A sketch map of the district should be inserted and sketch maps on a larger scale of the various administrative units of the district also prepared.

Notes should then be recorded under main headings in respect of the several administrative units, and the following heads and sub-heads suggest themselves:-

2.
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District Officer,
Raub.

Section 1. Administrative. Under this heading entries should be made regarding:-

(a) Villages or hamlets;
(b) Communications;
(c) Market Centres or Cattle Auctions;
(d) Factories, Mills or Ginneries;
(e) Seed Depots or Stores;
(f) Co-operative organisations for credit or marketing;
(g) Experiment Stations, Seed Farms, or Nurseries.

Separate sheets should be maintained for the sub-heads specified above.

Section 2. Agricultural. Under this heading entries should be made regarding:

(a) Climate - any meteorological data available, and general observations on climatic conditions;

(b) Soils - notes on types of soil found in the area and any records of examinations of soil samples;

(c) Vegetation - notes of ecological interest concerning the vegetation, as well as notes on plants of economic value and use;

(d) Extent and methods of field and animal husbandry;

(e) Field and animal produce. Nature of crops, extent of production, and disposal of the same. Details of animal produce used and exported;

(f) Pests and diseases - notes concerning these and the occurrence of outbreaks.

Section 3. Crop Notes. Notes on particular crops should be kept on separate sheets and should record details concerning varieties, soil preferences, methods of husbandry, rotations, and yields, where such records are deemed to be of sufficient agricultural importance.

Section 4. Agricultural Improvements. Records should be maintained in this section of demonstrations or trial cultivations undertaken and the results secured. The names of chiefs or growers interested in making trials should also be recorded, as well as any information regarding the results of such trials and subsequent developments. Records can also be kept here of any developments in ploughing, with names of purchasers of ploughs and of data related to their use.

Section 5. Miscellaneous. Notes on any other matters of agricultural interest in the widest sense, including if thought advisable, notes on the dietary of the growers and the proportion of foodstuffs retained for personal use and the proportion available for sale.

These district registers are designed with the object of building up permanent records of agricultural information. They should be submitted to senior officers for inspection and should be handed over in case of transfers to the relieving officer. It should be considered whether it is necessary or feasible, without expenditure of time and energy, for copies

to be sent regularly for record to the offices of senior agricultural officers, or, in the case of small Colonies, to headquarters. In certain quarters this duplication of notes is thought to be desirable, as it tends to reduce correspondence, but, in others, a summary of the principal notes, and of the results of demonstration and trials, is considered adequate, as the value of the information contained in a district register is in the district itself.

Appendix 37.

FACTORS IN THE MARKETING AND FINANCE OF THE AGRICULTURAL PRODUCTS OF PEASANT PROPRIETORS IN MALAYA.

The experience so far gained by the Co-operative Societies Department in Malaya about the joint marketing of peasant agricultural produce is very limited, but it may be of advantage to set down some of the conclusions. The factors making for success or failure may be divided into two main heads:

(i) Economic.
(ii) Human.

These two are not separate factors. For success they must be united.

2. Take first the economic factor.

Before any efforts are made to suggest a better organisation it is essential that there should be available a most exact knowledge of the existing system.

Detailed information regarding the existing marketing system of the numerous crops produced by peasant proprietors is very inadequate, and this must be compiled in respect of any crop in any particular area before any attempt is made to establish a new system of marketing there.

3. It is well to remember that most of the internal marketing is in the hands of the Chinese whose average business efficiency is surpassed by few races in the world. One cannot therefore approach the marketing problem of any crop in any area with any strong presumption that the existing arrangements are inefficient. Though I do not think that the experiment proved anything, yet it may be as well to remember that two European officers of considerable technical attainments made some experimental purchases from the local Chinese rubber buyers at Dusan Tua with a view to finding out the extent of the profits made by these middlemen. I wish to emphasise that no real duduction can, in my opinion, be drawn from the experiment, but it is on record that the financial result was a loss of $2 pikul instead of revealing a large profit made by middlemen buyers. It is necessary to be careful, therefore, before upsetting the existing arrangements. Full information must be sought and the data obtained carefully weighed before a new system is launched.

4. It may be as well to record that so far as rubber is concerned (and it will be true of almost every agricultural product) experience has shown that it would have been useless to organise the joint sale of the kampong product as it was. Joint sale would not have justified itself by better prices. It would likewise have been useless to concentrate solely on educating the raiat to turn out a better product. The local dealer would have given little more for the good product than he had previoulsy given for the bad.

It may be found that a very small change in the present methods is all that is necessary. I will suggest a purely hypothetical case of fruit. An existing dealer might be persuaded to buy by weight as well as by ripeness.

The peasant would very quickly learn to pick out the biggest fruit for sale and reserve the smaller one for home consumption. It would not be a very long stride for him to learn the advantage of better pruning or cultivation to produce larger fruit. This system of paying by weight is adopted by many Co-operative Egg Circles.

Hence, in the marketing of the agricultural produce of raiats, it will usually be necessary and will always be desirable to combine teaching in the preparation of a better product with the organisation of a better system of marketing the product.

5. This brings in the question of grading. The raiat is little acquainted with the problems of marketing and has rarely any knowledge of or inducements or facilities for selling his product by grade. Hence, a great deal of instruction is necessary to persuade him to give that extra attention to his product which will raise it to a higher grade. If joint marketing is to be organised in any area, the vital importance of grade must be accepted and understood by those who are combining together. It is essential that the producer of the better product should get a better return than the producer of the worse. If he does not, the result will be that the producer of the better product will get less than his due while the producer of the worse will get more. That position cannot long be maintained. It is necessary therefore to emphasise the necessity for preliminary instruction. Few people are prepared to change the existing order of things unless -

(a) they are dissatisfied with things as they are, and
(b) they believe that the new scheme is likely to improve matters.

6. The next point I would emphasise is the need to start on a small scale. The raiat has not the skill or business knowledge to run a big business. The history of the first Co-operative Rubber Society at Ulu Gombak is evidence of that. The essence of any scheme must be that it shall be simple and that the group shall be small. With a large number of small groups operating efficiently and within their own capabilities it will be possible to organise in the course of time larger groups. But the important factor is the initial small group. Only when these primary groups are functioning well will it be possible for a larger combination of such groups to function well.

7. Another very important factor is the opposition of vested interests. There is one thing certain and that is that the operators of the existing system are not going to see the business pass out of their hands without a struggle. Most of the high cards are in their hands. If success is to be lasting, the small-holders who are persuaded to adopt the new system must be warned beforehand of the dangers from this source that are likely to beset their new organisation. In other words, the necessity for loyalty to their organisation in the face of temptation must be clear to all.

8. A point that it is necessary to emphasise from the very beginning is that the new organisation is made by the raiats and for the raiats and must be run by them. In the early stages Government officers will teach the people how to run

the business, but they will not run the business for them. The raiat must look on the organisation as his own and not as a Government subsidiary. If successful, the success is his own; if it fails, the loss is his own.

The powers of a corporate body to discipline its members and compel the carrying out of contracts; by fines and penalties, are necessary and useful in an emergency, but such powers will not preserve the organisation if the belief and faith of the majority is not strong. The resistance to temptation should come from within and be based upon conviction not compulsion.

9. The question of finance is important. If the initial unit is small, the amount of fixed capital to run the unit should be small. Every effort should be made to collect this capital before the organisation starts. The Co-operative Societies Department's experience in allowing marketing societies to start on borrowed money has not been very happy. Then there is the question of capital for current needs. The raiat is usually accustomed to getting cash (or goods) on the spot for his produce. With joint marketing, he will have to wait till the produce is bulked, graded and sold in a more distant market. Such sale may be weekly or fortnightly. If weekly the necessity for cash advances against produce delivered may be unnecessary; if fortnightly, provision must be made to have funds available to grant advances against produce delivered. There is less danger in permitting an organisation to borrow a small sum for this purpose than for fixed capital.

10. These are some of the economic factors of importance in attempting the organisation of the joint marketing of agricultural produce grown by a large number of peasant proprietors.

The human factors, too, must be borne in mind. No matter how obvious the financial gain resulting from joint action may be, unless the raiats are prepared to combine and stay combined nothing lasting can be achieved.

11. It is necessary therefore to emphasise the importance of preliminary teaching of all persons concerned before any new scheme is launched. To launch a scheme which is but little understood by its participators is to court early failure. No time spent in teaching can be regarded as time wasted. More haste will mean less speed. While everyone should have a good idea of what he is doing and why, good leadership is very important. Without it a combination of individuals will quickly get into difficulties. Hence, good leaders should be sought for every organisation.

12. Peasant proprietors in all countries are notoriously conservative and independent. Joint action does not come easily to them, and combination is a plant of slow growth. The habits of centuries are not quickly changed. It is very necessary therefore not to advance faster than the minds of the raiats are willing to follow. This emphasises the necessity for teaching and for small groups.

13. Many of the raiats may be in debt to the local merchant and may be bound to sell their produce to him. If such is the case, there is little prospect of successful combination for marketing until the problem of debt is settled. Hence areas where the raiats are heavily indebted should be avoided by organisers of joint sale of produce.

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14. It should be realised that Malays are generally speaking not so attracted by the hope of increased gain as are other races in this country and that allowance must be made for this fact. Higher prices have resulted in almost every area where a joint sale society has been formed. The members will admit the fact, and yet many, if not most, hanker to return to the old methods. The will to improve is largely absent. Perhaps the present period of depression will result in some change in this respect.

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Appendix 38.

MEMORANDUM BY THE DIRECTOR OF AGRICULTURE TO BE SUBMITTED TO THE AGRICULTURAL CONFERENCE.

AGRICULTURAL SHOWS AND KINDRED EFFORTS.

The question of holding small agricultural shows has been the subject of correspondence between the Secretaries to Residents to the various States and the Director of Agriculture during the past few months. The present position is that small sums of money are provided in the State Estimates under the Heading District Shows. Last year no District Shows were held. As a result of this the Director of Agriculture addressed the various Secretaries to Residents expressing the views that such shows were capable of accomplishing a great deal of good, and that it seemed to him to be unfortunate that such shows had been abandoned because it might be held that the present juncture when the development of new industries is most needed, is the time when such shows should be pushed to the full. The replies received showed some difference of opinion. While every Resident was strongly in favour of steps to encourage agriculture there was some divergence of opinion as to the value of shows at the present time. The British Resident, Selangor, and the British Resident, Pahang, strongly favour such shows. The British Resident, Selangor, stated to the Director of Agriculture that he was convinced that holding of regular shows accomplish much good in raising the standard of produce. It is gathered that he intends to arrange for the holding of one or two small shows in Selangor this year. The British Resident, Pahang, similarly favours such show and has approved holding a show in the District of Temerloh, only a portion of the vote for shows being expended in this way, the balance being disposed of on relief work for Malays who suffered during the floods. The British Resident, Negri Sembilan, also has strongly expressed himself in favour of shows, but considers that at the present time the proposal to award prizes of $10 and $5 for the best rice plots in each mukim is a more satisfactory way of spending the money available. The British Resident, Perak, doubts whether shows on the small scale they could afford is the best method of encouraging agriculture at present. He alludes to a suggestion of the District Officer, Kuala Kangsar, that better results would be obtained by an exhibition by the Agricultural Department of practical planting methods. An objection to shows cited by the District Officer, Kuala Kangsar, is that in order to make them attractive it is necessary that there should be an attraction such as bands, rongings, wayang, cinemas, etc., all of which mean additional expense.

In view of the considerable divergence of opinion it seems desirable that if possible unanimity should be reached. My own view is that District Shows are capable of doing a great deal of good by improving the standard of products, but that if this improvement is to be effected, it is necessary that the show policy should be maintained every year and that there should be no break, otherwise much of the ground that has been gained is lost.

Secondly a show is of great value as a centre for propaganda and instruction.

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Thirdly a show is of great value as stimulating trade.

It is not desired to belittle or underestimate the value of the other methods advocated. I believe that prize holding schemes such as advocated by the British Resident, Negri Sembilan, are also very powerful incentives to improvement of agriculture, but the point to be stressed is that such schemes should not be regarded as an alternative to show but should be complimentary. Thus the prize holding scheme should come to a conclusion about the time of the show and the show should be a formal means of bringing the results of the prize holding scheme to notice.

In relation to such prize schemes it would be better to make them include not only padi cultivation, but also other crops excluding however, rubber.

In the same connection a suggestion has been put forward recently by the Principal of the Tanjong Malim Training College that village garden competition might be inaugurated.

In relation to the point that in order to make show satisfactory, it is necessary that there should be a number of other attractions, I believe that this may be desirable; but not essential and in any event amusements could be organised on a restricted scale at no great expense, while if the Government Cinema Propaganda Van attends the show which it should be simple to add one or two non-propaganda films to the programme.

The suggestion of the District Officer, Kuala Kangsar, that agricultural demonstration by the Department of Agriculture should take the place of show is not completely understood. Such demonstrations are regularly afforded at present by the Propaganda Van worked jointly by the Agricultural Department, the Rubber Research Institute and the Department of Co-operation, while demonstrations are regularly held during the season at the now numerous Agricultural Test Plots and Agricultural Stations controlled by the Department. It is possible, however, that the District Officer, Kuala Kangsar, may have additional ideas and views.

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Appendix 39.

HOME GARDEN AND KAMPONG COMPETITIONS.

Attention has recently been attracted to the holding of home garden and kampong competitions in Malaya. Such competitions are regularly held in Ceylon and in the Philippine Islands where it is understood that they have been successful in broadening the basis of agriculture and extending the cultivation of new products.

Generally speaking this movement has taken the form of extension from school gardens, the idea being that the pupils of the schools by bringing the information concerning gardens which they have learnt at school into the home circle may exercise an influence on the community as a whole.

During the past 18 months a move has been made towards the starting of home gardens competitions in three separate areas of Malaya, namely, Malacca, Province Wellesley and Selangor. The efforts which have taken place in these three regions differ to some extent in form but the underlying idea is in all cases the same, namely, the extension of the school gardening idea through the pupils of the schools to the home and the kampongs.

The question has also been discussed at the Agricultural Advisory Committee and a scheme put up by the Director of Agriculture in consultation with the Principal, Sultan Idris Training College. It appears, however, that the movement has undergone such an extension that it is rather now a question of assimilating progress in the different areas where such competitions exist to a uniform standard, and if discussion favours such a course to arrange for a further extension to other parts of Malaya. The general concensus of opinion appears to be that competitions should be organised, if they are to be organised, in mukims or villages, and that for them regular rules require to be laid down and provision made in the shape of prizes. It is open to discussion whether prizes are best awarded in the form of medals and certificates or cash prizes, but it is generally held, in any event, that if cash prizes are given they should be accompanied by some form of certificate.

A suggestion has been made by the Agricultural Field Officer, Province Wellesley and Penang that it might serve a useful purpose if local competitions could be arranged to coincide with the visit of the Propaganda Van; the various gardens in the particular mukim or area visited being invited to arrange for a display of produce on the occasion of the visit of the caravan.

Such a show would probably have very valuable results especially if it is taken in conjunction with the work of the caravan, particularly in connection with the food film which has just been completed by the Co-operative Department.

The draft of rules put up by the Director of Agriculture is annexed to this memo to serve as a basis for discussion.

It has been suggested that these competitions should be regulated by a central committee, but it is open to question if the movement is to be extended throughout the whole of the Peninsula whether it might not be more advantageous to endeavour to assimilate the holding of such competitions to the duties

of the various District Committees, if they are to be organised. In work of this sort over centralisation may often give rise to difficulties. If the movement is to attain the popularity to which it is entitled it is far more satisfactory if the organisation is allowed to take place locally rather than be controlled from distant headquarters, and it seems that the extension which has been given to the movement in Malacca, Province Wellesley and Selangor rather debars possibility of establishing organisation on a central basis at the present time.

These remarks are put up to serve as a basis for discussion. They will it is hoped be amplified by accounts that are put forward by the Agricultural Field Officers from the various districts. It is, in any event, to be emphasised that if these competitions are to become really popular and to exert the influence which they should that they require the active support and encouragement of all District Officers.

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RULES FOR VILLAGE GARDEN COMPETITIONS.

These competitions are intended to promote love of gardening and better agricultural methods among the Malay inhabitants of the kampong.

2. Prizes will be awarded to the best gardens entering the competition. The number of prizes will be governed by the number of entries. The first prize will be of the value of $10 and the second $5. Other prizes will be awarded if there are sufficient entries.

3. Competitors must enter for the competition not later than..... and must state the exact location of their gardens and their names in full.

4. Gardens for competition should contain areas devoted both to flowers and vegetables. They will be judged on the general standard of upkeep, the variety of plants and all vegetables cultivated and on the standard of cultivation achieved.

5. Gardens will be inspected by the judges on different occasions after the dates for entering the competition are closed.

6. The final inspection of the gardens will take place immediately before the prizes are awarded.

7. The decision of the judges appointed to judge the competition is final.

8. Entries for the competition should be sent to.....

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Appendix 40.

VEGETABLES.

Imports.- Malaya imports a considerable quantity of vegetables for local consumption. The net imports in 1931 were 47,553 tons, valued at $4,126,187. The average net imports for the years 1924 - 1930 inclusive were 47,049 tons, valued at $6,393,791.

Imports are classified as canned, potatoes, vegetables preserved in salt or vinegar, onions and garlic and "other kinds".

Canned.- Approximately, local consumption is 1,200 tons per annum, valued at about $500,000.

Potatoes.- An important item of import. Average net imports for the past 8 years (1924-1931) were 8,472 tons per annum, valued at $843,738. Supplies come from Sumatra two-fifths, Java one-fifth, Japan one-fifth, China one-fifth. Average annual net values per ton were 1924 $110, 1925 $115, $1926 $114, 1927 $107, 1928 $103, 1929 $103, 1930 $82, 1931 $66.

Apart from small quantities at hill stations, potatoes are not grown in Malaya.

Vegetables Preserved in Salt or Vinegar.- The net imports of such products in 1931 was 14,695 tons, valued at $1,737,066. The annual net imports are approximately 16,000 tons, valued at $3,000,000.

Onions and Garlic.-Net imports in 1931 were 11,656 tons, valued at $748,156. The average net imports of the previous 7 years (1924-1930) were approximately 13,300 tons per annum valued at approximately $1,300,000.

In 1930, total imports were 26,000 tons which originated from the following countries - British India and Burma 13,000 tons, Hongkong 2,000, China 4,000, Egypt 3,000, Java 2,000, Siam 1,500, other countries 500 tons.

Exports 12,600 tons were chiefly to Netherlands India.

Other Kinds of Vegetables.- Net imports under this head in 1931 were 11,919 tons, valued at $813,712, the average for the preceding three years being about 11,000 tons per annum, valued at $1,000,000.

Local Production.- Vegetables are grown chiefly by Chinese gardeners throughout Malaya and chiefly around the large towns. The quantity and value of their produces is difficult to estimate. It is thought that the production of fresh vegetables in the Federated Malay States are worth approximately $1,000,000 per annum.

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Chinese in Malaya own agricultural properties of all sizes from large rubber and coconut plantations to market gardens of about one acre in extent.

2. This Conference is chiefly concerned with the possibility of producing locally a number of agricultural products, for supplies of which Malaya is at present dependent, either wholely or largely on imports. Consequently the well established plantation crops can be disregarded and interest is centered mainly on the activities of the Chinese small-holders and market gardeners.

3. In passing, however, it should be mentioned that most of the few good fruit orchards in the country are owned by the wealthier Chinese who maintain them in some instances almost as hobbies, while the same class evinced an interest in the possibilities of tobacco cultivation.

4. In order to get in touch with the Chinese small-holders, most of whom do not speak much, if any, Malay, and to gain their confidence, it is obviously essential to employ Chinese officers. Such officers need to be able to speak three or four dialects and preferably should possess a knowledge of Chinese script.

5. The Departmental staff now includes three Chinese Sub-Inspectors of Agriculture, one in Selangor, one in Southern Perak, and one in Singapore. Another officer is in training at the School of Agriculture for service as an Agricultural Assistant in Malacca.

6. These Chinese officers have not only collected much useful information concerning the agricultural activities, methods of cultivation, systems of marketing, general conditions and needs of Chinese small-holders; they have also rendered these small-holders valuable assistance in several ways as shown below.

7. In the past the Chinese market gardeners have tended to occupy land on the outskirts of large towns in order to be within easy reach of markets. The land was held on temporary occupation licence renewable annually. With the growth of townships such areas have come within Sanitary Board Limits and have been required for other purposes. Consequently the gardeners have had to be moved further afield. Of recent years the tendency has been to find land for them at some little distance from large towns, but yet within easy reach of roads and railways providing transport facilities for their product. These newer areas have usually been selected in places where the land was not likely to be required for other purposes, in order to overcome the hardships occasioned by frequent moving, just as the gardeners have worked up the land to a satisfactory degree of fertility. By co-operating with Land Officers the Chinese Sub-Inspector of Agriculture in Selangor has been able to help gardeners to obtain new land when moved and to assist in settling them on new areas.

8. It should be remembered that in several parts of the country the Chinese market gardeners have done valuable service by reconditioning for agriculture considerable areas of worked out mining land.

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CHINESE AGRICULTURE

9. While land tenure on temporary occupation licence is suitable to particular conditions and to early stages of land development, it is liable to cause hardships. The question arises, therefore, whether under more developed and settled conditions the terms of land tenure by Chinese gardenersmight not advantageously be modified to leases for periods of say 7 years with the possibility of renewal.

10. The Chinese small holders grow nearly all the locally produced vegetables sold on our markets. They also supply fruit such as pineapples, bananas, jackfruit, guavas, limes, organes and pomeloes. They produce in addition tapioca, sugar-cane for chewing, tobacco, groundnuts, tuba and some tea and coffee. They provide a large proportion of the locally bred pigs and considerable quantities of poultry and eggs.

11. As an indication of the extent of their vegetables production it may be mentioned that the monthly exports of vegetables by rail from Kinta District alone average about 2,200 pikuls a month and have been as high as 4,000pikuls. Consignments are sent all over the country from Singapore to Penang.

12. While the Chinese market gardener has little to learn as regards the actual cultivation of vegetables, he often employs objectionable methods of manuring. Recent demonstrations of the use of artificial fertilisers on gardens in the neighbourhood of Kuala Lumpur have given promising results and a number of gardeners are now substituting pig manure and artificial fertilisers for the substances previously used. One important matter requiring further attention is the testing and demonstration of cheap and efficient methods of manuring that are not open to any objection. Attention has recently been invited in the Legislative Council to the need for such work on Penang Island.

13. While this is one of the lines along which the work of the Chinese Sub-Inspector of Agriculture can be of value to the gardeners, another is the distribution of planting material of good strains of various plants.

14. Tea is grown on about 200 acres of small holdings in Selangor and sold locally. Demonstrations of improved methods of pruning and plucking, combined with prevention of soil erosion and the use of green manures have resulted in the adoption of many of the growers of the methods shown with advantage to themselves in improved crops that have helped to compensate for a fall in prices.

15. Demonstrations and lectures on tobacco growing, pest control and methods of curing have also proved valuable to Chinese small-holders who in the last year or two have grown this crop in rotation with vegetables. Work on this crop and on the possibility of growing groundnuts for oil extraction is deserving of further attention.

16. The imported pure bred pigs at Serdang have been shown to parties of Chinese and have aroused considerable interest. Several Chinese have purchased animals for breeding either pure or crossed with their own strain of Poland-China pigs. In Selangor the cross-bred animals are already proving superior for market purposes to the local Poland-China type while retaining its hardiness. Although a satisfactory commencement has been made in this line of work, further demonstrations and

propaganda are needed. Other points requiring attention are more sanitary housing and the use of mineral salts in feeding mixtures.

17. Chinese small-holders sell their produce through middlemen. Wholesale prices for vegetables are usually about half the retail prices, but as transport charges, rent of market stalls and losses of very perishable produce are borne by the middlemen and retailers it is not certain that the wholesale prices are unfair to the growers. In the case of pigs, however, it is clear that rings of dealers manipulate prices against the breeders in Selangor and South Perak. In Singapore live pigs sell for $20 per pikul and best quality pork for 48 cents a kati, in spite of competition with imported animals from Bali. In Selangor pigs sell for $12 to $15 per pikul and best quality pork for 53 cents per kati. The margin between the wholesale and retail prices in Selangor and South Perak is therefore clearly unnecessarily wide.

18. The above summary will serve to show the useful part played by Chinese small-holders in assisting to provide some of the important food supplies of this country. Under existing conditions their products hardly come into competition with the products of the Malays or other races, although Malays could and probably will produce increasing quantities of vegetables tobacco and coffee. The Chinese small-holder, however, at present and at least for some years to come, plays and will play an important part in keeping down the imports of essential foodstuffs and in consequence appears to be deserving of such assistance and encouragement as can be given him.

19. Experience has shown, moreover, that these Chinese small-holders appreciate demonstrations and advice in improved methods or new crops and are quick to take advantage of them if they can see and that there is profit in them.

20. In conclusion it may be emphasised that successful instruction work among these people can only be carried out by the help of a staff of trained Chinese officers who can speak their dialects, secure their confidence and give them practical advice of which they can appreciate the value.

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RESOLUTIONS SUMMARISING THE RECOMMENDATIONS OF THE INTER-DEPARTMENTAL AGRICULTURAL CONFERENCE. 1932.

RESOLUTION 1.

The provision of labour by prospective cultivators in relation to new schemes for the irrigation and drainage of padi lands.

That this Conference has followed with interest the exposition of the present position in relation to new irrigation and drainage works for padi cultivation.

2. It has heard with attention the discussion concerning the utilisation of the labour of the people whom it is intended to settle on the land in the construction of drainage and irrigation works and strongly supports the view that people of this description should be employed on such work.

3. It has considered a suggestion emanating from the Commissioner of Lands that it might be desirable to obtain power for enforcing the provision of such labour by the people affected and subject to certain reservations, endorses that view.

4. It recommends that very careful consideration should be given to the extension of the principle embodied in Section 53 of the Rice Cultivation Rules under the Land Code, to the construction of new works in existing and possibly in new rice areas with the following reservations:-

5. Firstly, that the principle of compulsory labour should not in any case be extended to major schemes.

Secondly, that the principle of compulsory labour should only be used to obtain labour from a recalcitrant minority in regard to a scheme which has received the approval of the majority of the cultivators whom it is desired to benefit.

Thirdly, that any person who is called upon to provide labour, under compulsion, may in lieu thereof make a cash payment.

RESOLUTION 2.

Settlement of Cultivators on new Padi Areas.

That this Conference strongly endorses the view expressed in para 102 of the Rice Committee's Report and alluded to by His Excellency in his opening address to the Conference, that schemes designed to secure the extension of rice cultivation in new areas cannot achieve a full measure of success unless adequate measures are provided to ensure the settlement of prospective cultivators, in such areas in a satisfactory manner.

2. The Conference considers that this will probably best be secured by the appointment of Colonisation Officers preferably of Malay race who have been specially chosen for such work; such officers should be given special training in agriculture and economics and should possess experience in land and general administration.

3. It is considered that such officers are probably best chosen from the civil or administrative services; they should be attached in the capacity of A.D.Os or Land Officers, directly to the staff of District Officers. It should be understood, however, that they will be in a considerable measure specialist officers and will not be liable to removal at short notice for service in other branches.

4. Such officers will be required to work in close connection with the Agricultural, Co-operative, Veterinary, Education, Health, Survey and Irrigation Departments. They should only be appointed in the case of large schemes affecting areas of 2,000 acres and upwards. In the case of very large schemes probably more than one such officer would be required.

5. Associated with them would be penghulus who it is suggested also require special training on similar but more elementary lines, while in areas of any size it would also be necessary, if satisfactory results are to be achieved, to establish Padi Seed Stations and Test Plots in charge of Agricultural subordinates attached to the Department of Agriculture. In schemes below 2,000 acres in area it is considered that specially selected and trained penghulus should be appointed.

6. The Conference realises that this provision will entail additional expenditure, but desires to stress that if adequate provision in this respect is not made, it is impossible to expect that the expenditure that is being incurred on new schemes for padi cultivation will be productive of full success.

7. The Conference further desires to stress the necessity for providing adequate kampong land for the use of cultivators in new schemes, but deprecates the utilisation of potential sawah for the purpose if this can be avoided.

RESOLUTION 3.

The provision of financial assistance to cultivators on new padi areas.

The Conference is of opinion that some scheme of providing for advances to cultivators in new rice areas may be desirable.

2. It calls attention to the somewhat similar provision made in connection with land settlement schemes in West Australia and elsewhere.

3. It records its opinion that if such provision could be made progress would probably be greatly expedited and rendered more assured.

4. It considers that Government should fully explore possibilities in this direction in conjunction with proposals for the construction of new work and the settlement of padi areas.

RESOLUTION 4.

Modification and improvements in methods of cultivating wet padi.

It is the opinion of this Conference that -

(1) In view of the present economic situation it is very desirable, if possible, to increase the productive capacity of wet padi land either by growing an increased number of crops of padi or by growing vegetables or other crops in a system of rotation, or by other means.

(2) The Department of Agriculture should continue to carry on research work in this connection, and as soon as promising results are obtained steps should be taken in conjunction with administrative officers to endeavour to arrange for large scale trials by the cultivators themselves if possible.

RESOLUTION 5.

Distribution of improved strains of seed padi.

The Conference is of opinion that the methods which have been laid down by the Agricultural Department for the distribution of pure line seed from centres established at Test Plots is likely to prove satisfactory. It stresses the necessity for maintenance and extension of this system. It desires to call attention to the necessity for direct financial provision by vote in the State estimates for this service inasmuch as the expedients tri d in the past in this respect have at times given rise to difficulties with financial authorities. It should be realised that for many years to come padi seed distribution cannot be entirely a self-supporting activity.

2. In relation to new strains of padi the Conference desires to stress the need for increased attention to the quality of the rice obtained from new strains and the appreciation which it meets with from the raiats themselves. In this connection the question of what has been termed the filling capacity of rice requires attention as well as flavour and appearance.

3. The Conference strongly urges extension of the work which has tentatively been commenced in this respect by the Agricultural Department and the Singapore Medical College.

RESOLUTION 6.

Rice Statistics.

The Conference has been informed of the work performed by the Department of Agriculture with a view to divising simple method of sampling rice areas with a view to determining regional yields.

2. It notes that so far the results do not permit of a recommendation being made for the adoption of a standard method.

3. It considers that the work should be continued inasmuch as the provision of some means of obtaining r eliable information in this respect is of first importance.

RESOLUTION 7.

The improvement of copra production and marketing among Malay small-holders.

The Conference has followed the remarks put forward by the Agricultural Department and also by the District Officer, Kuala Selangor in relation to the striking results that have already been obtained in relation to improvements in copra production amongst Malay small-holders in the Districts of Kuala Selangor and Kuala Langat.

2. The Conference considers that these efforts should by all means be extended to all parts of the Peninsula where native copra is produced inasmuch as they appear definitely to tend to the improvement of the financial position of the raiat since copra of the quality which could be prepared from these kilns appears likely to find appreciably better prices.

3. The conference agrees that in disseminating information in this connection advantage should be taken of the specialised knowledge acquired by ketuas and such like people as the result of work already done, while steps should be taken to train selected Malay Agricultural Assistants in the work of the erection of improved kilns and the operation of making and grading copra and that in addition, if it can be arranged, it is very desirable that an officer of the standing of a Malay Agricultural Assistant should be trained and detailed specially for work in connection with the improvement of the quality of copra; this officer should be attached to the Head Quarters staff of the Department of Agriculture, but should travel in the various districts working under the direction of the State or Settlement Agricultural Field Officer.

RESOLUTION 8.

The development of the tobacco industry among small-holders.

The Conference is of opinion that considerable scope exists for the plantation of tobacco in Malaya with a view to replacing imports by local products.

2. It considers, however, that more definite information is required concerning types of tobacco that can best be grown, times of planting, methods of curing and the like, to enable fully dependable advice to be given to the Raiat.

3. In view of the highly specialised nature of the crop it urges that if it can possibly be arranged the services of an officer with skilled knowledge and training in tobacco growing and curing should be made available.

4. It considers that the question of marketing tobacco will require careful attention with a view to circumventing the operations of rings and combines which are detrimental to the growers' interests.

5. The Conference has heard with pleasure the opinions put forward by the representatives of the Customs Department, that, from an economic point of view, the development of a tobacco industry would be for the benefit of the country, but realises that the fiscal difficulties involved are considerable, owing to the prospective loss of revenue that such developments might entail, and that the situation is rendered more difficult owing to the numerous independent customs authorities which exist in Malaya.

6. The Conference trusts that means may however be found to overcome these difficulties, and it urges that in the early stages of development an effort should be made to arrange matters in such fashion as to hinder progress in the least degree; that thereafter it seems essential that fiscal arrangements should be of such a character as to hamper the industry as little as possible and provide adequate protection to the local growers while ensuring that revenue shall be maintained.

7. It considers that the best course will be the appointment of an inter-departmental committee for the purpose of formulating concrete proposals for action in this connexion.

RESOLUTION 9.

The improvement and extension of the fruit industry among small-holders.

The Conference has considered the information put forward in relation to the fruit industry in Malaya and desires to point out the following -

(1) That import and export figures do not show the real position as imports are augmented by a considerable but unknown quantity of fruit which comes in chiefly from the Netherlands India as deck cargo not entered in ships' manifests.

(2) That the quantity of fruit at present imported which could be replaced by produce grown in Malaya is considerable and that steps to effect this replacement are very desirable.

(3) That the steps to be taken comprise -

(a) The extension of provision for supplying planting material to small-holders at reasonable rates through the Agricultural Stations.

(b) The provision of better instruction in relation to cultural methods in fruit growing and cultivation.

(c) The improvement of marketing facilities.

(4) The Conference is struck by the fact that from time to time local gluts of fruit occur in certain parts and that this may coincide with shortage in other places: it considers that in this connection local market intelligence services would be of value if they could be organised.

(5) In relation to marketing the conference is of opinion that growers are heavily penalised owing to the existence of marketing rings, and suggests that careful consideration should be given to the possibility of establishing in large towns depots for the sale of peasant fruits and possibly other produce, following the example which has been given in some other Colonies.

(6) The Conference has taken note of the survey method of examining industries, as exemplified by Mr. Olds' survey of the fruit industry in Malacca; it considers that the results of such surveys are likely to prove of considerable value in supplying reliable information and urges the extension of the method to other units in respect of the fruit industry and also to other products in the case of which it is applicable.

RESOLUTION 10.

The improvement and extension of poultry raising among Malay small-holders.

The Conference is of opinion that the extension of the raising of poultry and the marketing of eggs will be found to constitute one of the simplest lines along which organised development is possible provided that certain difficulties can be overcome.

2. Of these the most important is the prevalence of poultry diseases in the kampong and the present inability to ensure their adequate control.

3. The Conference is struck with the evidence adduced of the variability in the local incidence of their outbreak and considers that provided simple and rational methods can be evolved for prophylaxes it should be possible to effect improvement.

4. The Conference does not at present advocate the provision of elaborate arrangements for pathological research into this question on account of expense though some research on the question is desirable but thinks that in the first place systematic enquiry and survey of existing conditions may throw light on the subject.

5. It suggests that an essential step lies in the provision of a trained adviser on the subject of poultry who will be available for the entire peninsula and in a whole time capacity.

6. It considers that the improvement of kampong poultry will probably best be secured by endeavouring to establish cross breeds and urges the extension of the small efforts made by the Department of Agriculture at Kuala Kangsar to other Agricultural Stations combined with the establishment of a central breeding station at Serdang so soon as funds and circumstances permit.

7. In relation to marketing the Conference has noted the work of the Co-operative Department in Krian and considers that the extension of this work to other units and its further systematisation is desirable as and when opportunity offers. In furthering this work the services of a poultry expert should in the opinion of the Conference prove of great value.

RESOLUTION 11.

The extension of the cultivation of coffee by small-holders.

The Conference considers that considerable scope exists for the production of locally grown coffee, it desires to point out that as with other crops methods to be adopted comprise -

1. Better and more extensive arrangements for the supply of cheap planting material.

2. Improved methods of cultivation and manufacturing the produce.

3. Improved methods of marketing.

2. In relation to (1) the Conference urges the rigid extension of the plant distribution services of the Agricultural Stations. In relation to (2) the Conference suggests that Malay Agricultural Officers should be given special instruction on this point and that the service of the lecture caravan should also be employed. In relation to (3) the Conference advocates, group manufacture and sale, if possible, with a view to breaking down rings and combines.

3. The Conference desires to point out that Java coffee which is the chief competitor of Malayan coffee in local markets is better prepared than the local product and that if success is to be achieved an improvement in quality is essential.

RESOLUTION 12.

The extension and improvement of the arecanut industry.

In relation to this export crop the Conference considers that scope exists for improvement in respect of -

1. The quality of the product.

2. The grading and marketing thereof.

2. It desires to point out that the problem is in many ways similar to that of copra and that obviously methods adopted for the improvement of the one are applicable to the other.

3. The Conference urges the dissemination of information regarding grades among Malay Agricultural Assistants and Malay Co-operative Officers and also information concerning the best mode of preparation.

4. The Conference is struck by the disparity in prices which often occurs between the interior and the ports.

5. It recognises that successful efforts are being made by the Co-operative Department to organise the co-operative sale of arecanuts from Perak to Penang; it urges the greater systematisation of these efforts and their extensions to other States and Settlements.

RESOLUTION 13.

The extension of the cultivation of pepper and other spices among small-holders.

The Conference considers that possibilities for the extension of the cultivation of these crops particularly pepper exists and that this cultivation should be fostered. At present the principal needs appear to be for the provision of planting material and the dissemination of information.

RESOLUTION 14.

The extension of the cultivation of groundnuts among small-holders.

The Conference is of opinion that scope exists for the extension of the cultivation of this crop but considers that more experimental work is required in different districts as well as trials by raiats themselves before development on any scale can be anticipated.

2. The Conference, however, desires to point out that groundnut (kachang) oil is a very important article of consumption and that the replacement of imports by local produce is very desirable on general grounds.

3. It urges therefore that the necessary experimental work should be pushed forward energetically with a view to ascertaining whether the development of the industry is a practicable possibility.

RESOLUTION 15.

The possibility of extending the cultivation of sugarcane.

The Conference is of opinion that unless Government is prepared to institute high protection for this product sugar production on a large scale in Malaya is unlikely to occur.

Scope however exists for the production of increased quantities of sugarcane for eating purposes and this should be encouraged in view of the imports from China.

RESOLUTION 16.

The extension of tea cultivation among Malay small-holders.

The Conference is of opinion that it is unlikely that there will be immediate extension of the cultivation of this crop by Malays, but the ultimate possibilities in this direction should be kept in view.

RESOLUTION 17.

The Collection of economic data concerning Agriculture on small-holdings.

The Conference agrees as to the necessity for the collection of economic data and that information of this description is essential as a basis for operation with the object of improving the economic position of small cultivators. It desires to stress -

(a) That, in any scheme for collection of such data, due account should be taken of existing organisations and new work assimilated thereto.

(b) That due account should be taken of the paramount necessity for observing the strictest economy both in money and effort in view of the fact that, owing to unavoidable circumstances, all officers will be bound to perform additional duties in any event in the near future.

(c) That the utility of the information to be collected should be carefully scrutinised with a view to ensuring that only data with an immediate and direct application should be dealt with in the earlier stages.

(d) That in the same connection it is essential to avoid overlap in the work of the different officers concerned.

The Conference recommends the appointment of a small committee under the Chairmanship of the Commissioner of Lands

consisting of the Director of Agriculture, Director of Co-operation and the Deputy Registrar-General of Statistics which would examine the position in all its aspects and present recommendations to Government with a view to inaugurating the work.

RESOLUTION 18.

The desirability of establishing District Organisations for the purpose of assisting agricultural and general development.

This Conference considers that -

1. Some form of organisation is desirable to fulfil the general objects set out in the memorandum entitled "District Economic Boards" prepared by Mr. R. Boyd, Economic and Educational Officer, Department of Co-operation.

2. Opinion is to some extent divided as to the exact form which these organisations can best take, and that it should be left in the first instance to the initiative of the District Officer to make suitable arrangements to fulfil the objects sought and that in due course progress made in the various Districts should be reviewed.

3. In the same connection attention is directed to the benefit which may follow the establishment of mukim committees subsidiary to the District organisations.

RESOLUTION 19.

The Improvement of Marketing Conditions and Financial arrangements among Malay small-holders.

The Conference agrees that the question of marketing the produce of small-holders is of fundamental importance at the present time.

2. It endorses the views set out in Mr. Boyd's memorandum, and stresses the importance of work in small groups, in the earlier stages especially.

3. It further expresses the view that the avenue of approach which probably holds out the greatest likelihood of early success, is the organisation of small groups of raiats for the manufacture, grading and marketing of the products in which efforts should be made to apply sound methods on accepted co-operative lines, but that at the same time endeavour should be made to ensure that individual ideas and enthusiasm are not unduly repressed and discouragement thereby engendered. It considers that the recent developments in this direction at Kuala Selangor and Dusan Tua may be regarded as examples in this respect.

4. The Conference desires to emphasise that in developing marketing groups, District Organisations the formation of which has been advocated in Resolution 18, should be capable of playing a part of considerable importance.

5. It considers further that, in respect of certain products, the possibility of establishing state controlled produce depots which would serve as centres for the direct disposal of the produce of small-holders in the larger towns, without the intervention of the middleman, is worthy of consideration especially in connection with foodstuffs.

6. It considers that, while the provision of capital in connection with small marketing organisations may at times be a source of difficulty, means can generally be found to overcome this difficulty in a variety of ways, and that the lack of capital need not form an insuperable obstacle to the inception of such projects.

7. The Conference desires to point out that the end sought in all such operations is the improvement of sales of peasant produce, and the ensurance that a larger share of the retail price received goes to the producer himself. In this connection therefore the Conference is of opinion that wherever reasonable prospects of success appear to exist for the formation of marketing groups they should be explored.

8. In the same connection the Conference considers that the necessity for accumulating economic data in respect of conditions in particular areas should be regarded as a preliminary to action which is of fundamental importance.

RESOLUTION 20.

Agricultural Shows and Kindred Efforts.

I.

That this Conference endorses the view set out in the memorandum by the Director of Agriculture that in efforts to encourage the development and improvement of agriculture on small-holdings, local Agricultural Shows can play an important part and that efforts in this direction should on no account be relaxed at the present juncture.

2. It is of course obvious that in this as in other directions the exercise of the most careful economy is essential, but it is considered that with this proviso, the regular organisation of shows must be classified as wise and necessary expenditure and that Government should continue to make permanent provision for such shows in the State Estimates.

3. It is further considered that the exact form which such shows should take may to an extent be left to the judgment of individual District Officers who would consult with the district organisations on the subject, and that there is no objection to a fair degree of latitude in this respect.

4. In the same connection it is believed that holding, periodically, of small competitions in connection with weekly fairs would probably prove a very valuable step, while weekly fairs themselves should by all means be encouraged.

5. It is considered that the visit of the Rural Lecture Caravan might usefully be made to coincide with such exhibitions whenever it can be arranged while the possibility of transporting exhibits of outstanding interest from one exhibition to another on successive days seems to be worthy of careful consideration.

6. It is further recommended that shows and competitions should be made the occasion of special displays and demonstrations concerning subjects and methods likely to improve or increase the production of particular crops and also on any subject likely to improve the health, welfare and prosperity of the raiat. Regional selectivity should however be exercised in providing such displays and demonstrations so as to ensure that they will appeal to the particular audience concerned having regard to local conditions and activities.

II.

Home Gardens.

The Conference has noted with satisfaction the progress which has lately been made in the organisation of home garden competition and urges the extension of the movement to all parts of the Peninsula.

2. It considers that this type of effort should emanate from school gardens in the first place but that by its natural extension it is capable of accomplishing very useful results in improving living conditions in the kampongs and the material prosperity of the raiat.

3. It agrees that the organisation of such competitions would be facilitated if a series of pro forma rules for their conduct could be drawn up by the Department of Agriculture: these could serve as a model which district organisations could use as a basis when organising competitions in different districts.

4. The Conference considers that it is very desirable, if possible, that small sums should be made available for prizes in connection with competitions of this type.

RESOLUTION 21.

Land tenure by Malay small cultivators.

The Conference has listened with attention to the exposition of the proposals of the Commissioner of Lands, F.M.S., for a revision and extension of the methods at present employed for alienation of land to Malay cultivators and the making of surveys in connection therewith.

2. It is resolved that this Conference would welcome full consideration by Government of the present cost of surveys and

of the necessity for the present standard of accuracy.

3. The Conference is aware that the question of the limitation of rights over Malay small-holdings is already under discussion and expresses the view that the complete freedom in this respect at present allowed by law is not in the interests of the small-holder.

RESOLUTION 22.

Agriculture on Chinese Small-holdings.

As the outcome of the discussion on Chinese Agriculture, the Conference desires to express the following views -

1. The position of Chinese Agriculture in Malaya in relation to the supply of vegetables to the various markets is of importance. It seems possible that the part played by Chinese market gardeners in the economic life of the community may not be fully apprehended in all quarters nor what the result would be if, for any reason, the supply was curtailed without adequate measures for its replacement.

2. Before attempts are made to improve the organisation of Chinese Agriculturists further economic investigation of their condition is required.

3. Successful work amongst Chinese Agriculturists is only possible if Chinese officers are employed for the purpose. The Conference agrees that the work of the Chinese Sub-Inspectors of Agriculture attached to the Department of Agriculture has been valuable and considers that so far as possible similar appointments should be made where there are important centres of population by these people in which such provision does not exist e.g., Malacca and Province Wellesley.

The Conference desires to record that there is clear evidence to show that the efforts made by the Department of Agriculture, particularly in relation to pig breeding and tea cultivation, have already had a marked effect, and that such work on proper lines is sure to be directly productive of benefit.

4. The Conference agrees that, on general grounds, it is desirable to restrict the use of night soil in vegetable cultivation, but desires to point out that the substitution of other and dearer manures may result in an increase in the market price of vegetables. It appears that further investigation is needed in order to determine the most satisfactory and economical methods of effecting such replacement.

5. It appears that it may perhaps be desirable to endeavour to effect greater uniformity of procedure in land alienation to Chinese for vegetable gardens. The present procedure varies considerably in different localities.

6. There is evidence to show that rings and combines exist among Chinese middlemen which operate adversely to the Chinese Agriculturists in much the same way as in the case of the Malay raiats. The difficulties in the way of organising Chinese to combat such rings are however very considerable owing to a variety of causes.

7. It is recognised that the Chinese Agricultural publication of the Department of Agriculture is serving a useful purpose and it is suggested that the dissemination of similar information might also be undertaken through the Chinese vernacular newspapers. In this work the Chinese Secretariat has promised to assist.

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Vegetables	90 et seq Appendices 40, 41
" Fruit and	31 et seq passim
Weekly Fairs	75 et seq passim Appendix 38