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*Schedule of papers circulated to members of the Advisory Board of the Imperial Council of Agricultural Research for its meeting held at Pusa on the 2nd, 3rd and 4th December 1929 .*

- (1) Ballot paper for the election of two members to the Governing Body.
- (2) Interim Report of the Sugar Committee appointed by the Imperial Council of Agricultural Research.
- (3) Note by Mr. W. Sayer on the production of sugar direct from cane during the season 1928-29.
- (4) Application from the Government of the United Provinces to the Imperial Council of Agricultural Research for a non-recurring grant of Rs. 1,25,000 for the provision of an experimental sugar plant at the Harcourt Butler Technological Institute, Cawnpore, and for a recurring grant of Rs. 20,000 towards the expenses of its maintenance.
- (5) Note by Mr. B. C. Burt on measures for the destruction of locusts.
- (6) A note on locusts by Imperial Entomologist.
- (7) A note on the Desert Locust in the Punjab by M. Afzal Hussain, Entomologist to Government, Punjab.
- (8) Note by Mr. B. C. Burt on the conservation of indigenous manurial resources and the development of the use of indigenous fertilisers. The presentation of a programme of research on fertilisers.
- (9) Note by Mr. S. D. Saklatvala on the conservation of indigenous manurial resources and the development of the use of indigenous fertilisers.
- (10) Supplementary note by Mr. B. C. Burt on the conservation of indigenous manurial resources and the development of the use of indigenous fertilisers.
- (11) Note by Mr. B. C. Burt on the editing of the "Pusa" series of agricultural and veterinary publications in the future.
- (12) Note by Mr. B. C. Burt on abstracts of agricultural literature.
- (13) Note by Mr. B. C. Burt on free interchange of agricultural publications throughout India.
- (14) Note on publications by Professor N. Gangulee.
- (15) Note by Mr. F. Ware on the editing of the "Pusa" series of agricultural and veterinary publications in future.
- (16) Note by Mr. F. Ware on future contributions to the International Veterinary Bureau, Paris.
- (17) Note by Dr. McRae on future contributions to the Imperial Bureau of Mycology.
- (18) Note by Mr. B. C. Burt on the production of agricultural cinema films.
- (19) Note by Mr. B. C. Burt on the improvement of Indian hemp with special reference to its marketing in a condition which will enable it to compete more successfully with Italian hemp in European markets.

(20) Note by Mr. S. D. Saklatvala on the improvement of Indian hemp with special reference to its marketing in a condition which will enable it to compete more successfully with Italian hemp in European markets.

• (21) Note by Mr. B. C. Burt on the Board of Agriculture—

(a) Future constitution of the Board of Agriculture.

(b) Arrangements which should be made in future for meetings of the Cattle Conference, All-India Veterinary Conference and Sectional meetings of the Board.

(22) Note by Mr. F. Ware on the arrangements which should be made in future for meetings of the Cattle Conference, All-India Veterinary Conference and Sectional meetings of the Board.

(23) Note by Mr. M. S. A. Hydari on the establishment of a Journal of Dairy Research by the Dairy Research Committee of the Empire Marketing Board.

(24) Note by Mr. M. S. A. Hydari on the award of an annual prize for the most striking agricultural improvement of the year.

(25) Note by Mr. M. S. A. Hydari on financial assistance to the National Horse-breeding and Show Society of India.

(26) Letter from the Registrar, University of Dacca, No. 7019, dated the 16th of November 1929, and enclosures, regarding financial assistance towards agricultural research in the university.

(27) Letter from the Government of the United Provinces, No. 1101-A, dated the 28th November 1929, and application from Dr. K. C. Mehta, Professor of Botany, Agra College, for a grant-in-aid for investigation on "Rusts of Wheat and Barley".

(28) Scheme for Rice Research in Bihar.

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**Agenda for the Meeting of the Advisory Board of the Imperial Council of Agricultural Research held at Pusa on the 2nd, 3rd and 4th December 1929.**

1. Election of two members to the Governing Body.
2. Interim Report of the Sugar Committee.
3. Measures for the destruction of locusts :—
  - (a) Report of the Sub-Committee of the Committee of Civil Research regarding anti-locust research.
  - (b) Proposal by the Government of Bombay for the establishment of an All-India organisation for dealing with the locust problem.
4. The conservation of indigenous manurial resources and the development of the use of indigenous fertilisers. The preparation of a programme of research on fertilisers.
5. Publications :—
  - (a) The editing of the " Pusa " series of Agricultural and Veterinary Publications in the future.
  - (b) Abstracts of Agricultural Literature.
  - (c) Free exchange of Agricultural publications throughout India.
6. Future contributions to the Imperial Bureau of Mycology and the International Veterinary Bureau, Paris.
7. Production of Agricultural Cinema Films.
8. The improvement of Indian hemp with special reference to its marketing in a condition which will enable it to compete more successfully with Italian hemp in European markets.
9. Board of Agriculture :—
  - (a) Future constitution of the Board of Agriculture.
  - (b) Arrangements which should be made in future for meetings of the Cattle Conference, All-India Veterinary Conference and Sectional meetings of the Board.
10. Establishment of a Journal of Dairy Research by the Dairy Research Committee of the Empire Marketing Board.
11. The award of an annual prize for the most striking agricultural improvement of the year.
12. Financial assistance to the National Horse-breeding and Show Society of India.
13. Application from the University of Dacca for financial assistance towards agricultural research in the University.
14. Application from Dr. K. C. Metha, Professor of Botany, Agra College, for a grant-in-aid for investigation on " Rusts of Wheat and Barley ".
15. Scheme for Rice Research in Bihar.

Proceedings of the meeting of the Advisory Board of the Imperial Council of Agricultural Research held at Pusa on Monday, the 2nd December 1920.

The following gentlemen were present :—

- (1) DEWAN BAHADUR SIR T. VIJAYARAGHAVACHARYA, *Chairman*.
- (2) MR. B. C. BURT.
- (3) DR. W. BURNS.
- (4) MR. G. CLARKE.
- (5) MR. P. H. CARPENTER.
- (6) MR. G. K. DEVADHAR.
- (7) PROFESSOR N. GANGULEE.
- (8) MR. G. P. HECTOR.
- (9) MR. K. HEWLETT.
- (10) MR. W. HARRIS.
- (11) MR. G. S. HENDERSON.
- (12) DR. W. H. HARRISON.
- (13) DR. L. K. HYDER.
- (14) MR. G. R. HILSON.
- (15) MR. A. MCKERRAL.
- (16) MR. D. MILNE.
- (17) MR. F. J. PLYMEN.
- (18) MR. W. ROBERTSON-BROWN.
- (19) MR. P. T. SAUNDERS.
- (20) MR. F. WARE.
- (21) BRIGADIER A. J. WILLIAMS.

MR. M. S. A. HYDARI, *Secretary*.

The meeting lasted from 11 A.M. till 4-50 P.M. with an interval for lunch from 1 P.M. to 2-30 P.M.

2. The Chairman opened the proceedings with a few words of welcome. The Board then proceeded to the election of two of its members to the Governing Body (item 1 of the Agenda). The ballot resulted in Mr. P. H. Carpenter and Mr. K. Hewlett obtaining the largest number of votes; they were accordingly declared to be duly elected to the Governing Body.

3. *Interim Report of the Sugar Committee. (Item 2 of the Agenda).*

As several members required time to study the report, discussion of this item was postponed till the meeting on the 3rd December.

4. *Measures for the destruction of locusts. (Item 3 of the Agenda).*

Mr. Burt opened the discussion by suggesting that the Advisory Board should request the Governing Body to appoint a special sub-committee under Rule 30 and give the Governing Body an indication of its proposed constitution. Mr. Clarke said that it was important that the

terms of reference of the Committee should be clearly defined, and that the latter should consider carefully the question of the executive control of any measures for the destruction of locusts which it may recommend. He added that the unit of executive control should, in his opinion, be the District Collector under whom would work the locust control officer. There was a scheme on somewhat similar lines already working in the United Provinces where the co-operation of all the departments concerned had been obtained. In regard to the composition of the Committee he thought it essential that so far as the United Provinces were concerned a District Officer who had had experience of large scale protecting measures there should be on the Committee. He also wanted the Committee to examine control measures which did not involve the use of poisons. He recommended that the Council should undertake responsibility for the staff and funds required for locust control measures. Dr. Burns while agreeing with Mr. Clarke in regard to the danger in India of using poison against locusts thought that in view of the suggestions of investigators like Uvarov the possibilities of poisoned baits as a weapon against the locust should be tested. Professor Gangulee thought that the co-operation of Indian States and of the British Consular Services in Afghanistan and Persia should be obtained; and also that the question whether any legislation on the lines now in force in South Africa was necessary should be considered. There followed a general discussion both in regard to the composition of the proposed sub-committee and to its terms of reference. In the result the following resolution was passed by the Board:—

“Resolved that the Advisory Board do recommend to the Governing Body of the Imperial Council of Agricultural Research to appoint a special sub-committee under Rule 30 to (1) work out the technique and organisation required for the control of the desert locust including measures not involving the use of poisons, (2) to make recommendations for the scientific study of the desert locust in India and to work out the staff, equipment and funds required to carry this out, (3) to recommend to what extent locust research should be carried out by Imperial and by Provincial agencies respectively, and (4) to report what action should be taken on the recommendations of the Committee of Civil Research; and further that the sub-committee be composed of the following:—

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| (1) Mr. Richards, Entomologist, U. P.  | } United Provinces. |
| (2) Mr. Marsh, Collector, Aligarh.   |                     |
| (3) The Imperial Entomologist.   |                     |
| (4) The Director of Agriculture, Punjab.   |                     |
| (5) The Government Entomologist, Punjab.   |                     |
| (6) The Director of Agriculture, Bombay.   |                     |
| (7) Mr. Cazi, Lecturer in Entomology, Bombay.  |                     |
| (8) The Deputy Director of Agriculture, Sind.  |                     |
| (9) A representative from the Kathiawar States.  |                     |
| (10) Mr. Corfield, Political Agent, Chagai.  |                     |
| (11) Mr. Robertson-Brown, Agricultural Officer, North-West Frontier Province.                |                     |
| (12) Mr. Burt, Agricultural Expert Adviser to the Imperial Council of Agricultural Research. |                     |

the Vice-Chairman and the Secretary of the Council being *ex-officio* Chairman and Secretary, respectively, of the Committee".

On the motion of Mr. Clarke it was further resolved :—

"That it be recommended to the Governing Body of the Imperial Council of Agricultural Research that the travelling allowance of members of this Committee should be charged to the funds of the Council".

5. *The Conservation of indigenous manurial resources and the development of the use of indigenous fertilisers. The preparation of a programme of research on fertilisers (Item 4 of the Agenda).*

Mr. Burt opened the discussion in which several members participated. Mr. McKerral stated that in Burma the position was that there was no future for indigenous manures. Professor Gangulee said that the main task of the committee should be the formulation of a programme for the investigation of the fertiliser problem. Mr. Devadhar said that the manner in which cow manure was disposed of should be investigated. He also stated that the question of railway concessions asked by Mr. Saklatvala was deserving of attention. Mr. Milne, in reply to Mr. Devadhar, stated that the damage caused by the use of cow dung for fuel was over estimated. He stated that as a result of investigations carried out in the Punjab it was proved that an equal amount of heat was given out by 4 annas worth of cow dung as against 8 annas worth of coal and Rs. 1-4-0 worth of charcoal, so that the housewife was really using the cheapest form of fuel. The use of cow dung as a fuel was in his opinion not uneconomic. Mr. Henderson referred to the fact that big trusts were conducting propaganda in the country districts in favour of artificial manures manufactured by them and that it was possible that, if unregulated, harm might result from their activities in that the foot might be induced to use unsuitable manures. Mr. Clarke was of opinion that India should not base her agriculture on imported manures. He was of opinion that the committee should investigate the possibility of manufacturing synthetic nitrogen compounds in India. Finally, on the motion of Mr. Burt seconded by Mr. Henderson, the Board passed the following resolution :—

"Resolved that a sub-committee be appointed to prepare a programme of research on fertilisers and to conduct an investigation into the economic utility of indigenous manures and that it should be composed of the following :—

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| (1) DR. HARRISON.                |           |
| (2) The Agricultural Chemist.    | } Bombay. |
| (3) Rao Sahib VAGHOLKAR.         |           |
| (4) The Agricultural Chemist.    | } Punjab. |
| (5) The Director of Agriculture. |           |
| (6) Mr. HILSON.                  | } Madras. |
| (7) Mr. VISVANATH.               |           |
| (8) Mr. CARBERY.                 | Bengal.   |
| (9) Dr SEN.                      |           |

- (10) Dr. HYDER.
- (11) One representative from Bihar and Orissa.
- (12) One representative from the United Provinces.
- (13) Mr. CARPENTER.
- (14) Mr. BURT.
- (15) The Director of Agriculture, Burma.
- (16) The Agricultural Chemist, Burma.
- (17) One representative from the Central Provinces.

the Vice-Chairman and the Secretary of the Council being the *ex-officio* Chairman and Secretary, respectively, of the Committee ”.

- 6. (a) *The editing of the “Pusa” series of Agricultural and Veterinary Publications in the future.*
- (b) *Abstracts of Agricultural Literature.*
- (c) *Free Interchange of Agricultural Publications throughout India. (Item 5 of the Agenda.)*

The discussion was initiated by Messrs. Burt, Ware and Gangulee who commented in turn on their notes which had already been circulated to members of the Advisory Board. After a general discussion the sense of the Board was that instead of the present series of publications (*viz.*, the Agricultural Journal of India, the Journal of the Central Bureau of Animal Husbandry and Dairying, the Pusa Bulletins and Pusa Memoirs) there should be three journals of which two, one agricultural and one veterinary, should be of a scientific and technical nature and the third a popular journal. As the memoirs of the Imperial Department of Agriculture would thus be discontinued provision should be made for the publication of special monographs to meet cases where a special *format* was required. The following resolution was moved by Mr. Burt and seconded by Mr. Hewlett :—

“Resolved that the Imperial Council of Agricultural Research do publish three journals namely (1) a scientific journal to be entitled “The Indian Journal of Veterinary Science”, (2) an “Indian Journal of Agricultural Science”, (3) an “Indian Journal of Agriculture and Animal Husbandry”; that, further, the Council do also establish a series of monographs to meet cases where publication in special form was required.”

In regard to the editorial committees for the two scientific journals, the following resolution moved by Dr. Hyder and seconded by Mr. Burt was passed :—

“Resolved that the editorial committee of the “Indian Journal of Veterinary Science” and of the “Indian Journal of Agricultural Science” be composed of the permanent staff of the Council *plus* in the case of each journal, two others eminent in veterinary and agricultural science respectively : and, further, that these latter be nominated by the Governing Body of the Imperial Council.”



Thereafter, the following resolution was passed on the motion of Mr. Milne seconded by Mr. Burt :—

“ Resolved that the editorial committee of the “ Indian Journal of Agriculture and Animal Husbandry ” do consist of the permanent staff of the Imperial Council *plus* the four others nominated to the editorial committees of the “ Indian Journal of Veterinary Science ” and the “ Indian Journal of Agricultural Science ” respectively.”

It was further decided, on the suggestion of Mr. Clarke, that the two scientific journals should each have two parts—one for papers contributed and the other for abstracts ; that agricultural and veterinary abstracters should be appointed in each province who should be remunerated at such rates as the Governing Body might decide, but that every contributor to the two scientific journals should, along with the article submitted for inclusion in the Journal, also send in an abstract thereof.

Professor Gangulee’s resolution :—“ That the publication work of the Imperial Council of Agricultural Research be entrusted to a permanent staff under the Council constituting a Bureau of Agricultural Intelligence ” fell through for want of a seconder.

The following resolution was then passed in regard to the free exchange of publications :—

“ Resolved that the Imperial Council do undertake to supply free a reasonable number of copies of its publications for the use of agricultural and veterinary officers in those Provinces which will reciprocate by supplying all their agricultural and veterinary publications free to the Imperial Council of Agricultural Research and in reasonable number to other reciprocating bodies.”

7. *Future contributions to the Imperial Bureau of Mycology and the International Veterinary Bureau, Paris. (Item 6 of the Agenda.)*

The following resolution moved by Mr. Ware and seconded by Mr. Hewlett was carried :—

“ Resolved that the Advisory Board do strongly recommend to the Governing Body of the Imperial Council that India’s contributions to the Imperial Veterinary Bureau be continued for a further period of seven years and that a representative of India be deputed to attend, whenever possible, the annual meeting of the Bureau.”

Thereafter on the motion of Mr. Burt the following resolution was also passed :—

“ Resolved that the Advisory Board do strongly recommend to the Governing Body of the Imperial Council that India’s contribution to the Imperial Bureau of Mycology be continued ”.

8. *Production of Agricultural Cinema Films. (Item 7 of the Agenda.)*

Messrs. Plymen, Milne and Devadhar commented from personal experience on the usefulness of the cinema in arousing interest among villagers but laid stress on the importance of the pictures having a local setting and of the lettering being in the vernacular of the area where the film was shown. Mr. Milne said that the majority of the films should be made by the

local Provincial Departments but that the latter required a highly trained technical man to go round and advise. What was required was local production combined with skilled assistance which would be provided by the Council of Agricultural Research. Mr. Devadhar desired that a sum of money should be placed by the Council at the disposal of each Province for the manufacture of films. Mr. Plymen added that there was a kind of film which did not require a local setting and which could be purchased from abroad, for example, a film depicting the life of a plant. He understood that the Empire Marketing Board had a library of films some of which could be usefully shown in this country. Mr. Saunders disagreed with the view of the Madras Provincial Advisory Committee to which Mr. Hilson, without endorsing it, drew the Board's notice that propaganda could be carried on better by the magic lantern than by the cinema. He said that so far as the Veterinary Department in his Province was concerned they had already the stories written up and all that they wanted was equipment. Speaking therefore for the Veterinary officers he very strongly supported the conducting of propaganda through the agency of the cinema.

The proposal of Dr. Burns to postpone consideration of the three alternatives\* mentioned in Mr. Burt's note was put to the vote and lost.

Finally the Board passed the following resolution. :—

“Resolved that the Advisory Board of the Imperial Council do recommend to the Governing Body that one or more Indian officers be selected and sent at once to England for training in cinema production and that meanwhile, if funds permit, an expert from England be obtained with the assistance and at the expense of the Empire Marketing Board.”

M. S. A. HYDARI.

The 2nd December 1929.

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\* For convenience of reference the three alternatives mentioned in Mr. Burt's note are given below :—

- (a) to obtain with the assistance of the Empire Marketing Board an expert from England whose salary the Empire Marketing Board would probably agree to pay. This officer would require in addition to one or more photographers, say, two experienced agricultural propaganda officers who would learn cinema work from him and give him the necessary local knowledge and guidance. If necessary one or more of the Indian assistants, who showed a real flair for cinema work, might be sent to England subsequently for special training to succeed the expert ;
  - (b) to select one or more Indian officers and to send them at once to England for training in cinema production postponing actual operations in India until their return ;
  - (c) to pay part of the cost of the expert which the Railway Board will in any case obtain and to place one or more Indian assistants under him especially for training in agricultural film production.
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**Proceedings of the meeting of the Advisory Board of the Imperial Council of Agricultural Research held at Pusa on Tuesday, the 3rd December 1920.**

The following gentlemen were present in addition to those whose names have been mentioned as being present at the meeting of December 2nd, 1920 :—

COL. J. D. GRAHAM.  
 MAJOR P. B. RILEY.  
 MR. J. N. CHAKRABARTY.  
 MR. P. J. KERR.

The meeting lasted from 10-30 A.M. till 4-45 P.M. with an interval for lunch from 1 P.M. to 2-30 P.M.

2. *The improvement of Indian hemp with special reference to its marketing in a condition which will enable it to compete more successfully with Italian hemp in European markets. (Item 8 of the Agenda).*

Mr. Burt opened the discussion by drawing attention to various points in the papers circulated on this question. Dr. Burns said that it would be advisable to have enquiries conducted in the Provinces in regard to the marketing of sann hemp. So far as Bombay was concerned they would be willing to allow one of the assistants of the Economic Botanist to devote most of his time in conducting the enquiry in marketing and to experiments in retting with the help of a grant from the Imperial Council. Mr. Plymen on the other hand was of opinion that the Council should take the lead in the matter of making enquiries rather than that the provinces should undertake enquiries which the Council would later co-ordinate. The area under sann hemp, he thought, was increasing; fields which he had seen under wheat last year were under sann hemp this year. It was desirable that the Imperial Council should undertake the general organisation of the work; he would rather have one good man who had knowledge of it and who would go round the Provinces where this crop was important than half a dozen indifferent men.

Dr. Hyder suggested that the enquiry should be conducted in each Province by two men—one a business man who would look to the marketing side and the other an agricultural officer who would investigate the "processing of the fibre". He suggested that the scheme should be financed on a fifty fifty basis as between the Council of Research and the Provinces. Dr. Burns was ready to support Mr. Plymen's scheme. He said that Bombay would not be able to find any portion of the money required, a view with which Mr. Clarke agreed so far as the United Provinces were concerned.

Mr. Hilson pointed out the difficulty for one man to travel over the very large area where this crop was grown which in Madras extended from Ganjam to the southern most limits of the Presidency. Mr. Carpenter asked whether the crop was of sufficient value to the country for the Council of Research to spend money on it. He suggested that Provincial Agricultural Research Committees should be asked to look into the matter. He agreed that if any scheme was financed, the expenses should be shared equally as between the Council and the Provinces. Dr. Burns in reply said that not only the actual but the potential value of the crop should be considered. There was

a big market for Indian hemp abroad if the supply was increased and the quality improved. If that were done, it might be a means of helping some backward tracts. The fibre was easy to handle.

Mr. Burt stated that India was steadily losing the market she took over from Russia after the war. In support he quoted the following figures of export of *sann* hemp from India :—

1924-25	.	The value of hemp exported was	.	1,75 lakhs.
1925-26	.	Do.	do.	1,59 lakhs.
1926-27	.	Do.	do.	83 lakhs.
1927-28	.	Do.	do.	81 lakhs.

Mr. Milne also desired an enquiry and stated that if sann cultivation could be made more remunerative it would be of importance to the Punjab as in the canal colonies a leguminous crop was urgently needed which could be grown in summer while there is a surplus of water in the rivers and which would cease to require irrigation by the 1st September. On Mr. Henderson's asking whether there was any objection to combining the hemp enquiry with one in regard to linseed (flax), Mr. Burt stated that fibre flax had died out as a crop in India. Mr. Plymen again emphasized the potential value of the sann crop which was a safe one as it grew even when the rainfall was irregular and adopted itself to various soils.

On Mr. Plymen's motion the following resolution was put to the vote and carried :—

“ Resolved that it be recommended to the Governing Body of the Imperial Council of Agricultural Research that the Council do employ one whole-time officer to study and report on the conditions under which hemp is marketed in the Provinces concerned in India and that the period of such officer's appointment be limited to one year ”.

The Board also recorded the opinion that when it came to consider the report of the Marketing Officer, if appointed, it should also consider the results of experiments which were now being conducted by certain Provinces in regard to the retting of hemp.

3. *Board of Agriculture—(a) future constitution of the Board of Agriculture, (b) arrangements which should be made in future for meetings of the Cattle Conference, All-India Veterinary Conference and Sectional Meetings of the Board. (Item 9 of the Agenda).*

Mr. Burt opened the discussion by explaining the various points at issue. Mr. Ware wanted a Board of Animal Husbandry to be formed which would meet in alternate years with the Board of Agriculture. Such a Board would enable Veterinary officers, workers in animal nutrition and livestock experts to discuss their special problems at reasonable intervals, and it would be the best possible agency for devising measures for concerted action for the improvement of the livestock of the country. Mr. Carpenter, while agreeing with Mr. Ware that there should be adequate facilities provided for the discussion of veterinary subjects pure and simple, thought that the Board of Agriculture should remain as it was. It should be split into two divisions one dealing with livestock and the other with agricultural questions but

that these wings should divide into Sectional meetings during the session but that the whole Board should meet at the same time and in the same place. Mr. Milne was of opinion that the present arrangements should continue as the Agenda was chosen annually to meet the needs of the year and the sub-committees gave ample opportunity for specialists in all subjects and also administrators to express their views. Mr. Clarke said that he was in favour of leaving the choice of the officers who should attend the Board to each Province, merely limiting the number to be deputed by a Province. The United Provinces Government, he stated, were finding it exceedingly difficult to send representatives for long periods as they had to for the present meetings. He, therefore, supported Mr. Ware. Mr. McKerral supported Mr. Milne in favour of the continuance of the *status quo*. He added that the factor of expense and time involved in frequent meetings of officers should not be lost sight of and stated that the Government of Burma were beginning to demur at sending representatives. He said they would prefer meetings of the Board to be held triennially. Mr. Plymen considered it necessary that Directors of Agriculture should be on the Board. He thought that the problem of providing adequate facilities for both the interests concerned, namely, agricultural and veterinary, could be solved by constituting them into two separate wings of the Board of Agriculture—one wing would meet one year and the other in the next. In view of the establishment of the Imperial Council of Agricultural Research, Dr. Burns doubted the necessity for continuing the Board of Agriculture but thought that if it was to be continued the Agenda should be more carefully chosen.

Mr. Hilson favoured Sectional meetings of the Board without any general meeting of the whole Board. Mr. Henderson stressed the great value of the Board as a meeting ground for junior officers. Mr. Burt suggested a compromise to meet the needs of the two sides—the agricultural and the veterinary. He suggested that the name of the Board should be changed to that of the "Board of Agriculture and Animal Health". It would be divided into two wings—one dealing with crops and soil and the other with animal husbandry. He would prefer both wings to meet at the same time but having regard to practical difficulties, e.g., the undesirability of several officers being absent from a Province at the same time, etc., he thought that each wing might meet every other year. Accordingly, after discussion, he moved the following resolution which was seconded by Mr. Ware and carried :—

"Resolved that the Advisory Board of the Imperial Council of Agricultural Research do recommend that the Board of Agriculture be known in future as the "Board of Agriculture and Animal Husbandry" and be divided into two branches :—(a) crops and soils, (b) animal health and husbandry; that each branch should meet biennially, meetings being arranged in alternate years and in conjunction with the meeting of the Advisory Board of the Imperial Council".

It was further resolved :—"That Sectional meetings of the Board of Agriculture be in future years organised in conjunction with the meeting of the appropriate wing of the Board of Agriculture and Animal Husbandry".

On the motion of Mr. Milne seconded by Mr. Plymen, it was resolved :—

"That the Advisory Board of the Imperial Council do recommend that the Board of Agriculture be henceforward convened under the auspices of the Imperial Council of Agricultural Research".

In regard to its constitution, the Board decided to form a small sub-committee composed of the following to meet on the 4th December and report to the Board the same day :—

MR. DEVADHAR.

MR. BURT.

MR. WARE.

MR. PLYMEN.

DR. HYDER.

The Vice-Chairman and the Secretary of the Council being respectively *ex-officio* Chairman and Secretary of the Committee.

It was agreed that it should be left to the Advisory Board to decide where the Board of Agriculture and Animal Husbandry should meet in future years, in view of the fact that the meeting of either wing of the Board would be in conjunction with the meeting of the Advisory Board. Mr. Milne, on behalf of the Ministry of Agriculture, Punjab, invited the Board to meet in the Punjab.

4. *Establishment of a Journal of Dairy Research by the Dairy Research Committee of the Empire marketing Board. (Item 10 of the Agenda).*

There was no discussion, this item being for information only.

5. *Award of an annual prize for the most striking agricultural improvement of the year. (Item 11 of the Agenda).*

Mr. Milne pointed out the necessity for defining the object for which a prize should be awarded. Colonel Graham and Mr. Carpenter thought it undesirable to call it an *annual* prize; it should only be awarded if there was some work of sufficient merit and not necessarily every year. After a short discussion on the motion of Dr. Harrison seconded by Mr. Clarke it was resolved :—

“ That the Board is not prepared at present to make any recommendation in regard to the award of an annual prize for the most striking agricultural improvement of the year.”

6. *Interim Report of the Sugar Committee. (Item 2 of the Agenda).*

Mr. Burt explained the various proposals contained in the Interim Report and answered enquiries in regard to various portions of it. An addition to the Appendix including the latest information regarding the sugar duties in other countries was accepted. In the result the following resolution was moved by Mr. Burt and seconded by Mr. Clarke and carried :—

“ Resolved that the Advisory Board of the Imperial Council do adopt the Interim Report of the Sugar Committee and recommend the proposals contained therein to the favourable consideration of the Governing Body of the Council; resolved further that while endorsing generally the application of the Government of the United Provinces for a grant to the Harcourt Butler Technological Institute the Advisory Board recommend that the Sugar Committee examine the details of the scheme and report direct to the Governing Body.”

7. *Financial assistance to the National Horse-breeding and Show Society of India. (Item 12 of the Agenda).*

At the request of members consideration of this item was postponed till the meeting on the 4th December 1929.

8. *Application from the University of Dacca for financial assistance towards agricultural research in the University. (Item 13 of the Agenda).*

At the suggestion of the Vice-Chairman Mr. Burt formerly moved the following resolution which was seconded by Mr. Devadhar and carried :—

“ Resolved that a small sub-committee be appointed consisting of the following to meet on the 4th instant and report immediately on the application from the University of Dacca for financial assistance towards agricultural research in the University: Dr. Harrison, Mr. Plymen, Mr. Carpenter, Mr. Burt, Dr. Hyder, the Vice-Chairman and the Secretary being *ex-officio* Chairman and Secretary respectively of the Committee.”

9. *Application from Dr. K. C. Mehta, Professor of Botany, Agra College, for a grant-in-aid for investigation on “ Rusts of Wheat and Barley ”. (Item 14 of the Agenda).*

Mr. Clarke briefly explained the scheme and moved the following resolution :—

“ Resolved that the Advisory Board do recommend to the Governing Body that a grant be made to Dr. K. C. Mehta, Professor of Botany, Agra College, of a sum not exceeding Rs. 45,000 spread over a period of three years for an investigation on the ‘ Rusts of Wheat and Barley ’.”

This was seconded by Dr. Hyder and carried after Messrs. Henderson, Carpenter and Colonel Graham had spoken strongly supporting the scheme.

10. *Scheme for Rice Research in Bihar. (Item 15 of the Agenda).*

Mr. Henderson briefly explained the scheme which Mr. Clarke supported. Mr. McKerral, while supporting the scheme, said that he considered it was necessary to obtain more information in regard to the details of the scheme before it was recommended for sanction, an opinion which was shared by Messrs. Burns, Harrison and Plymen. Mr. McKerral also drew the Board's attention to the fact that an application for a grant towards a scheme for rice research in Burma would in the near future be submitted to the Council and he wanted this to be borne in mind when and if any expenditure on the Bihar and Orissa rice scheme was considered. Burma had a special claim on the Council in view of the large revenue derived by the Government of India from the rice export duty. Dr. Burns in criticising the scheme emphasised two points: (1) the very large amount of both capital and recurring demands relative to the money available and (2) the fact that this was work which this Province should finance itself as Madras, Bombay and Bengal had done. Both Messrs. Hector and Plymen urged that all the money available for rice research should not go to one Province but that consideration of the question should be deferred till, in the first place, fuller details had been obtained of this scheme and till other Provinces concerned had had an opportunity of submitting schemes for rice research themselves. Professor Gangulee was strongly in favour of the Council making a grant on a fifty fifty basis, a view which Dr. Hyder supported as providing some incentive to the Provinces. Professor Gangulee also laid stress on the importance of neighbouring

Provinces co-operating in work on a crop in which they were interested, *e.g.*, in regard to the present scheme instead of Bihar putting up a scheme of its own it would be thought better if the latter Province joined with Bengal in submitting a joint scheme. Mr. Burt answering Dr. Harrison said that considering that the scheme embraced four distinct tracts the provision for staff was not excessive; it should be remembered that the area of rice in the Province of Bihar and Orissa 15 million acres was one-fifth of the total Indian area under this crop. He deprecated giving grants on a fifty fifty basis and quoted the example of the Indian Central Cotton Committee which financed schemes outright the local Government giving assistance in kind. Nor could it be said that the Government of Bihar and Orissa had neglected work on the rice crop. He appreciated that Burma had a special claim to consideration but he thought that in regard to schemes for rice research there were indications that the Empire Marketing Board might come to the help of the Council in the financing of schemes. Finally, however, on the motion of Dr. Harrison seconded by Professor Gangulee, the Board passed the following resolution:—

“Resolved that the Advisory Board of the Imperial Council do defer consideration of this scheme until the next meeting of the Advisory Board and so enable the Provinces concerned to submit if they so desired schemes for rice research; and further that all such schemes should be considered together.”

In the course of the discussion arising out of the above mentioned scheme it was thought that it would be advisable if the Governing Body of the Council laid down the general principles which should govern the grant of funds, *e.g.*, whether the grant should be only for staff and equipment or might be for buildings as well, etc. The Vice-Chairman thought that before considering the matter the Governing Body would welcome an expression of opinion by the Advisory Board and it was decided that this question should be discussed at the first meeting of the Board in 1930.

M. S. A. HYDARI.

3rd December 1929.



**Proceedings of the meeting of the Advisory Board of the Imperial Council of Agricultural Research held at Pusa on Wednesday, the 4th December 1929.**

The following gentleman was present in addition to those whose names have been mentioned as being present at the meeting of December 3rd, 1929 :

Mr. Quirke.

2. The meeting lasted from 2-30 P. M. to 4-15 P. M.

3. *Financial assistance to the National Horse-breeding and Show Society of India.* (Item 12 of the Agenda).

Mr. Quirke after stating reasons in support of a grant to the National Horse-breeding and Show Society of India moved the following resolution:—

“Resolved that the Advisory Board of the Imperial Council do recommend to the Governing Body that a grant of Rs. 3,000 per annum for five years be made to the National Horse-breeding and Show Society of India”.

The resolution was seconded by Brigadier Williams and was supported by Messrs. Hewlett, Robertson-Brown, Milne and Henderson. Dr. Burns asked how a grant of this nature could be considered as a grant for research. Dr. Hyder replied that by giving a grant the Council would be helping practical research in animal husbandry. Colonel Graham added that work connected with the science of genetics had as much a claim to come under the heading of Research as work connected with any other science. Mr. Burt understood that the Society issued an Urdu Journal which was of help to those agriculturists who were also breeders of horses; as one of the functions of the Council was to aid in the dissemination of information, a grant to this Society was a legitimate charge on the funds of the Council. Mr. Clarke said that the Society was of very great help to certain classes of agriculturists in the United Provinces. The resolution was then put to the vote and carried.

4. *Board of Agriculture—*

(a) *Future constitution of the Board of Agriculture.*

(b) *Arrangements which should be made in future for meetings of the Cattle Conference, All-India Veterinary Conference and Sectional meetings of the Board.* (Item 9 of the Agenda—contd.)

At its meeting on the 3rd December the Advisory Board had remitted consideration of the composition of the future Board of Agriculture and Animal Husbandry to a small sub-committee. Mr. Burt in moving the adoption of the sub-committee's recommendations in this regard stated that the sub-committee was of opinion that the distinction between visitors and members except such distinguished visitors as the Chairman may decide to invite should be abolished; the sub-committee had considered the composition on this basis. Mr. Burt then moved the following resolution:—

“Resolved that the Board do recommend that the proposed wing of crops and soils of the future Board of Agriculture and Animal Husbandry should consist of the following:—

1 Vice-Chairman of the Imperial Council of Agricultural Research  
*ex-officio* Chairman of the Board.

- 2 Expert Advisers of the Imperial Council of Agricultural Research.
- 1 Secretary of the Imperial Council of Agricultural Research who will be *ex-officio* Secretary to the Board assisted by one or more technical Joint Secretaries appointed for each meeting.
- 1 Director, Imperial Institute of Agricultural Research.
- 1 Director-General of Commercial Intelligence (or an officer deputed by him).
- 1 Imperial Agriculturist.
- 1 Imperial Agricultural Bacteriologist.
- 1 Imperial Agricultural Chemist.
- 1 Imperial Economic Botanist.
- 1 Imperial Entomologist.
- 1 Imperial Mycologist.
- 1 Imperial Sugarcane Expert.
- 8 All other Class I Officers of the Imperial Institute of Agricultural Research, Pusa.
- (6—8) 1 Director, Institute of Plant Industry, Indore.
- 1 Secretary, Indian Central Cotton Committee.
- 1 Scientific Officer to the Indian Tea Association.
- 1 Scientific Officer to the United Planters' Association of Southern India.
- 1 Director, Lao Research Institute.
- 5 University Representatives of Science and Economics nominated by the Inter-University Board in consultation with the Chairman of the Board.
- 2 Representatives of the Co-operative Movement in India appointed by the Chairman of the Board.
- 3 Directors of Agriculture, or representatives of the Agricultural Departments of Indian States which are already represented on the Board.
- 20 Two un-official members from each Province (including the North-West Frontier Province) appointed by the local Government from the Provincial Board of Agriculture, Provincial Committee for Agricultural Research or a similar organization.
- 30 Three Agricultural Officers from each Province including the North-West Frontier Province.
- 3 Representatives from the Central Irrigation Board when formed.
- 7 Members nominated by the Chairman.

The resolution was seconded by Mr. Devadhar and carried after the proposal by Mr. Clarke that no restriction should be placed on Provincial Governments as to the source from which the latter should choose non-officials

which was supported by Dr. Burns, was put to the vote and lost. Mr. B. then moved the following further resolution :—

- “Resolved that the Board do recommend that the proposed wing of animal health and animal husbandry of the future Board of Agriculture and Animal Husbandry should consist of the following :—
- 1 Vice-Chairman of the Imperial Council of Agricultural Research *ex-officio* Chairman of the Board.
  - 2 Expert Advisers of the Imperial Council of Agricultural Research.
  - 1 Secretary of the Imperial Council of Agricultural Research who will be *ex-officio* Secretary to the Board assisted by one or more technical Joint Secretaries appointed for each meeting.
  - 1 Director of Veterinary Services, India (or officer deputed by him).
  - 1 Director of the Imperial Institute of Veterinary Research, Muktesar.
  - 1 Director of Military Farms.
  - 1 Principal, Lahore Veterinary College.
  - 1 Imperial Dairy Expert.
  - 1 Imperial Physiological Chemist.
  - 1 Imperial Agriculturist, Pusa.
  - 5 Section Officers of the Imperial Institute of Veterinary Research, Muktesar.
  - 2 Assistant Controllers of Military Dairy Farms.
  - 1 Assistant Imperial Dairy Expert.
  - 1 Assistant to the Physiological Chemist. \*
  - 1 An officer working on nutrition problems nominated by the Indian Research Fund Association.
  - 1 An officer deputed by the President, Forest Research Institute, Dehra Dun, for the consideration of grazing problems.
  - 1 The Second Imperial Entomologist (Dipterist), Pusa.
  - 1 Representative of the National Horse-breeding Association of India.
  - 1 Principal, Forman Agricultural Institute, Allahabad.
  - 2 Two co-operative representatives connected with animal husbandry to be appointed by the Chairman.
  - 4 Representatives of the Veterinary Departments in Indian States.
  - 2 Livestock Officers from Indian States.
  - 27 Three Veterinary Officers from each major Province.
  - 3 One Veterinary Officer each from Sind, North-West Frontier Province and Baluchistan.
  - 20 Two Agricultural Officers connected with animal husbandry work from each major Province and two from the North-West Frontier Province.
  - 10 One non-official interested in animal husbandry to be nominated by the Government of each major Province and the North-West Frontier Province.

2 University representatives connected with the Biological sciences to be nominated by the Inter-University Board.

5 Gentlemen interested in animal husbandry to be appointed by the Chairman.

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The resolution was seconded by Mr. Ware and carried after the proposal of Mr. Milne that there should be three instead of two agricultural Officers connected with animal husbandry work from each major Province and the North-West Frontier Province had been put to the vote and lost.

5. *Application from the University of Dacca for financial assistance towards agricultural research in the University. (Item 13 of the Agenda—contd.).*

The Board considered the report of the sub-committee appointed to examine the application from the University of Dacca for a grant for research in agricultural chemistry. On the motion of Mr. Burt seconded by Dr. Hyder the following resolution was passed :—

“ Resolved that the Advisory Board of the Imperial Council do make the following recommendation to the Governing Body :—

The Board welcomes this offer of co-operation by the Dacca University. A proposal is put forward for work on three problems ;

- (a) Methods for the mechanical analysis of soils ;
- (b) The Assimilation of nitrogen by the rice plant;
- (c) As a subsidiary portion of (a) a study of the organic matter in the soil.

The Board recommends that a part of the grant applied for should be made at once and trusts that Professor Ghose will be able to see his way to modify his proposals in certain respects in order that certain aspects of these problems to which the Board attaches particular importance may be worked out.

In the opinion of the Board the devising of a standard international method for the mechanical analysis of soils is much less important than the devising of a method for the mechanical analysis of soils of a laterite type which will enable the effect of cultural differences to be measured. The Board does not consider the estimation of the organic matter in soils to be as important as an investigation of the organic constituents of soils. The Board hopes that Professor Ghose will find it possible to modify and extend his proposals for soil research in this direction.

The Board considers the problem of the nitrogen supply to the rice plant to be of great importance and that research on this question should be encouraged. The problem is a very wide one and can be attacked by various methods. The Board would be glad to receive from Professor Ghose a more definite indication of the avenue of approach which he intends.

The Board therefore recommends that an immediate grant for a period of five years be given to cover the cost of one junior Assistant for the proposed soil investigations in order that the method of approach may be worked out and of one senior Assistant to enable work to be started on investigation (b). The Board also recommends that the Governing Body sanction a grant for the purchase of apparatus subject to a list of the apparatus required being furnished and approved by the Advisory Board.”

4th December 1929.

M. S. A. HYDARI,

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