

# Report of the Seventh Commonwealth Entomological Conference

6th - 15th July  
1960



LONDON  
COMMONWEALTH INSTITUTE OF ENTOMOLOGY  
56 QUEEN'S GATE S.W.7

DECEMBER 1960

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# **REPORT OF THE Seventh Commonwealth Entomological Conference**

**6th - 15th July, 1960**

## **Calling of the Conference**

The Sixth Commonwealth Entomological Conference, at its final meeting, passed the following resolution:—

“The Conference re-affirms the value of periodical meetings of entomologists drawn from as many countries of the Commonwealth as possible and recommends that steps be taken in due course for a Seventh Commonwealth Entomological Conference to be held in 1959, of which long notice should be given to enable the necessary arrangements to be made, at a place to be decided by the Executive Council of the Commonwealth Agricultural Bureaux.”

For the convenience of overseas entomologists it was considered preferable to convene the Conference for 1960, so as to precede the XIth International Congress of Entomology to be held in Vienna in August, and also the Commonwealth Agricultural Bureaux Review Conference, arranged for August-September 1960. Accordingly invitations were conveyed to the Governments of the Commonwealth countries in May 1958 to send delegates to a Conference to be held in London from 6th to 15th July, 1960.

## **List of Delegates and Observers**

The following official delegates attended:—

Aden.

Mr. J. H. Proctor.

Australia.

Mr. F. Wilson.

Barbados.

Mr. J. R. Metcalfe.

Canada.

Dr. A. P. Arnason.

Dr. N. D. Holmes.

Colonial Office.

Dr. R. A. E. Galley.

Mr. W. V. Harris.

Mr. D. Rhind, O.B.E.

Prof. O. W. Richards, F.R.S.

Mr. G. M. Roddan, C.M.G.

Federation of Malaya.

Enche Ahmad Yunus.

Mr. J. D. de Silva.

Ghana.

Mr. K. B. Armstrong (West African Cacao Research Institute).

Mr. G. K. A. Buahin.

Mr. J. Forsyth.

Dr. C. G. Johnson (West African Cacao Research Institute).

Dr. H. Roberts (West African Timber Borer Research Unit).

Mr. J. Rawnsley (Ghana Cocoa Marketing Board).

- India.  
Dr. M. L. Roonwal.
- Ireland.  
Mr. E. McMahon.
- Jamaica.  
Mr. G. Stell.
- Kenya.  
Mr. J. F. Graham.  
Mr. T. Jones (East African Agricultural and Forestry Research Organization).  
Mr. A. R. Melville.
- Mauritius.  
Mr. J. R. Williams.
- New Zealand.  
Dr. W. Cottier.
- Nigeria.  
Mr. P. H. Giles.  
Mr. A. M. Jordan (West African Institute for Trypanosomiasis Research).  
Mr. F. A. Squire.
- Northern Rhodesia.  
Mr. W. S. Steel.
- Seychelles.  
Dr. I. W. B. Nye.
- South Africa.  
Dr. J. W. C. Geyer.
- Southern Rhodesia.  
Mr. J. Ford.
- Tanganyika.  
Dr. A. C. Evans.
- Trinidad.  
Mr. M. G. Emsley (Imperial College of Tropical Agriculture).  
Prof. T. W. Kirkpatrick (Imperial College of Tropical Agriculture).
- Uganda.  
Mr. J. Bowden.  
Mr. J. M. B. Harley (East African Trypanosomiasis Research Organization).
- United Kingdom.  
Mr. J. D. Bletchly.  
Mr. W. P. L. Cameron.  
Mr. R. Chamberlain.  
Mr. M. Crooke.  
Dr. D. W. Hall.  
Mr. G. V. B. Herford, C.B.E.  
Mr. W. E. H. Hodson.  
Mr. F. H. Jacob.  
Dr. D. S. MacLagan.  
Dr. K. Mellanby, C.B.E.  
Dr. I. Thomas.  
Prof. V. B. Wigglesworth, C.B.E., F.R.S.  
Mr. D. W. Williams.  
Mr. D. W. Wright.

In addition the following attended as observers:—

Australia.

Mr. T. Greaves.

South Africa.

Dr. D. P. Annecke.

Dr. L. L. J. Ossowski.

United Nations.

Mr. O. B. Lean (United Nations Food and Agriculture Organization).

### Programme

The programme was as follows:—

Wednesday, 6th July

- 10.30 a.m. Opening Plenary Session of Delegates presided over by the Chairman of the Executive Council of the Commonwealth Agricultural Bureaux.  
2.30 p.m. First meeting of Committee.

Thursday, 7th July

- 10 a.m. Open Meeting: "Recent developments in insecticides for crop protection."  
*Chairman:* Dr. R. A. E. Galley.  
*Speaker:* Dr. J. T. Martin.  
11.30 a.m. Open Meeting: "Problems in the use of insecticides."  
*Chairman:* Professor H. G. H. Kearns, O.B.E.  
*Speaker:* Dr. A. B. Hadaway.  
2.15 p.m. Open Meeting: "Hazards and precautions associated with the use of pesticides."  
*Chairman:* Dr. I. Thomas.  
*Speakers:* Dr. J. M. Barnes.  
Dr. E. J. Miller.  
4 p.m. Open Meeting: "Research on stored-products pests and their control."  
*Chairman:* Mr. G. V. B. Herford, C.B.E.  
*Speakers:* Dr. D. W. Hall.  
Dr. J. A. Freeman, O.B.E.  
Dr. E. A. Parkin and Mr. A. A. Green, M.B.E.

Friday, 8th July

- 10 a.m. Open Meeting: "Biological control of insects and weeds."  
*Chairman:* Dr. W. Cottier.  
*Speaker:* Mr. Frank Wilson.  
11.30 a.m. Open Meeting: "Insect attack in relation to the physical characters and physiological state of the plant."  
*Chairman:* Professor O. W. Richards, F.R.S.  
*Speakers:* Dr. N. D. Holmes.  
Mr. R. G. Fennah.  
2.30 p.m. Second meeting of Committee.

Saturday, 9th July

Visit to Rothamsted Experimental Station, Harpenden.

Monday, 11th July

- 10 a.m. Open Meeting: "Recent investigations on timber-boring beetles."  
*Chairman:* Dr. M. L. Roonwal.  
*Speakers:* Mr. J. D. Bletchly.  
Mr. Tecwyn Jones.

Monday, 11th July—*continued*.

- 11.30 a.m. Open Meeting: "Termite control in afforestation projects and constructional timbers."  
*Chairman:* Mr. D. Rhind, O.B.E.  
*Speakers:* Mr. W. V. Harris.  
Mr. W. A. Sands.
- 2.30 p.m. Meeting of Sub-committee.

Tuesday, 12th July

- 10 a.m. Open Meeting: "The utilisation of pathogenic organisms in the control of insect pests."  
*Chairman:* Professor G. C. Varley.  
*Speakers:* Dr. K. M. Smith, C.B.E., F.R.S.  
Dr. L. L. J. Ossowski.
- 11.30 a.m. Open Meeting: "Recent advances and current trends in the study and control of tsetse flies and trypanosomiasis."  
*Chairman:* Dr. T. A. M. Nash, C.M.G.  
*Speakers:* Mr. J. Ford.  
Dr. K. S. Hocking.
- 2.15 p.m. Open Meeting: "Developments in the Study of the Dispersal of Insects."  
*Chairman:* Dr. B. P. Uvarov, C.M.G., F.R.S.  
*Speakers:* Miss Z. V. Waloff.  
Dr. C. G. Johnson.
- 4 p.m. Open Meeting: "Recent research on locusts and their control."  
*Chairman:* Dr. J. W. C. Geyer.  
*Speakers:* Dr. P. T. Haskell.  
Dr. R. C. Rainey.
- Evening. Reception for the Delegates given by the President and Fellows of the Royal Entomological Society of London.

Wednesday, 13th July

Visit to the East Malling Research Station, East Malling, Kent.

Thursday, 14th July

- 10 a.m.\* Open Meeting: "Developments in the study of plant viruses and their vectors, and their bearing on control measures."  
*Chairman:* Mr. F. C. Bawden, F.R.S.  
*Speakers:* Dr. M. A. Watson.  
Dr. A. F. Posnette.  
Dr. J. S. Kennedy.  
Dr. L. Broadbent.
- 2.15 p.m.\* Open Meeting: "The link between research work and its application in the field of plant protection."  
*Chairman:* Professor V. B. Wigglesworth, C.B.E., F.R.S.  
*Speakers:* Dr. A. P. Arnason.  
Mr. F. H. Jacob.  
Dr. G. Watts-Padwick.  
Mr. A. R. Melville.  
Mr. F. A. Squire.
- Evening Official Reception for Delegates given by Her Majesty's Government at Lancaster House, St. James's, S.W.1.

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\* Joint meetings with the Sixth Commonwealth Mycological Conference.

Friday, 15th July

- 9.30 a.m. Final meeting of Committee.  
3 p.m. Closing Plenary Session of Delegates.  
5.30 p.m. Informal Reception for Overseas Delegates given by the President and Council of the Institute of Biology.

Monday, 18th July

Visit to the Pest Infestation Laboratory, Slough.

#### Place of Meetings

The plenary sessions of the Conference were held in the Meeting Room of the Royal Entomological Society of London, at 41, Queen's Gate, London, S.W.7; and the committee meetings in the Council Chamber of the Society or the Board Room of the British Museum (Natural History), Cromwell Road, London, S.W.7. The open meetings of the Conference, the last two of which were held jointly with the Sixth Commonwealth Mycological Conference, took place in the Memorial Hall of the Royal Geographical Society, Kensington Gore, London, S.W.7.

These arrangements were made possible, respectively, by the courtesy of the President and Council of the Royal Entomological Society of London, the Director of the British Museum (Natural History) and the Director and Council of the Royal Geographical Society.

#### Opening of the Conference

The Conference assembled on the 6th July. The Chair was taken by Mr. A. Perera, Chairman of the Executive Council, Commonwealth Agricultural Bureaux, who welcomed the delegates in the following speech:—

Although not an entomologist myself, it gives me great pleasure to be associated with you at this Conference. There are fifty-six delegates and observers here, from twenty-one territories of the Commonwealth, and also a representative from the Republic of Ireland and one from the United Nations Food and Agricultural Organization. I extend a cordial welcome to each and all.

Several of you may have attended previous Conferences, but several, perhaps, have not done so. It may be helpful to give something of the background of these Conferences, of which the function has somewhat altered over the years. If, in doing so, I repeat what is already known to you, you must forgive me.

These Conferences, from their inception, have fulfilled a dual purpose. The first took place in 1920 and the remainder have followed at approximately five-year intervals. One purpose has been to provide an opportunity for economic entomologists from the various Commonwealth countries to meet together and discuss their scientific problems. The other has been to allow them, as technical representatives of the countries that jointly finance the Commonwealth Institute of Entomology and the Commonwealth Institute of Biological Control, to consider the work of the two Institutes, and to see how far their activities meet the needs of their countries, and to suggest any modifications that may seem desirable.

These Conferences are concerned with applied entomology and thus with pests of agriculture and associated problems of importance, such as insect-borne diseases. Although many of the Commonwealth countries have their own Universities and maintain their own research institutions which contribute to the advancement of fundamental knowledge as well as to the solution of local problems, the United Kingdom has played an important part in the development of economic entomology, both on account of the research carried out here and on account of the facilities it has offered for training those economic entomologists responsible for research work in the less developed territories. It is probable that such territories will for some time continue to need assistance from the more technically advanced countries of the Commonwealth.

The Conferences thus play an important part in bringing together research workers from this country and those working overseas. A varied programme of scientific discussions has been arranged for the open meetings at the present Conference, and should provide an opportunity for surveying recent advances in knowledge in different subjects and for an



exchange of views between workers interested in different aspects of them. It is hoped that they will lead to further advances, both in understanding the problems and in applying the methods of solving them.

The second purpose of the Conferences is concerned, if only indirectly, with the finance and administration of the Institutes. This aspect is primarily the responsibility of the Executive Council of the Commonwealth Agricultural Bureaux. The Bureaux, which were created to serve the needs of each of the agricultural sciences along the lines pioneered, in respect of entomology, by the Imperial Bureau of Entomology, are based on a common plan, and in the Executive Council all representatives of contributing countries have an equal place, irrespective of the size of the contribution of their respective countries. It is one of the functions of the Executive Council to convene this Conference of Commonwealth entomologists, although the agreement to hold such a Conference is the responsibility of the Governments of the various Commonwealth territories, which likewise appoint their delegates. The organisation of the Conference is one of the duties that falls on the Commonwealth Institute of Entomology, and the Director, in consultation with the Director of the Commonwealth Institute of Biological Control, has made provision for considering the affairs of both Institutes.

Consideration of the work of the Institutes forms a part of the comprehensive review of the Commonwealth Agricultural Bureaux organisation undertaken by the Review Conference such as is due later this year. There the work of each Institute and Bureau is examined, proposals for making modifications or increasing staff are considered, and as a result recommendations are transmitted to the respective Governments indicating the needs of the organisation.

Although the task of determining the finances and reviewing the work of the two entomological Institutes is now undertaken by the Review Conference, it is of importance that the views of the present Conference, which comprises the entomologists who make use of the services of these Institutes, should be made known as regards technical matters affecting them. The recommendations of this Conference cannot fail to be of the greatest assistance to the delegates attending the forthcoming Review Conference.

The Conference will accordingly be asked to consider the memoranda on the work of the two Institutes, which have been prepared by the Directors and have been distributed to the delegates. It is suggested that after each Director has introduced the memorandum on the work of his Institute, delegates should raise such points as seem to them to require consideration, and that the Conference should then appoint a Committee to consider them in detail.

Before concluding, it is appropriate to refer to changes in the Directorships of the two Institutes that have occurred since the previous Conference. Dr. W. R. Thompson, who was in charge of the Institute of Entomology's Parasite Service from its inception, and subsequently of the Institute of Biological Control that succeeded it, retired from the Directorship in 1958, and has been succeeded by Dr. F. J. Simmonds. Dr. W. J. Hall retired from the Directorship of the Commonwealth Institute of Entomology in 1958, and I am glad to be able to say that he is still attached to the Institute. He has been succeeded by Mr. E. O. Pearson, who has had the task of organising this Conference, assisted by Mr. R. G. Fennah, who was appointed as Assistant Director in 1958. Most of us are aware how efficiently they have carried out their duties, and we are fortunate in having them as Directors, and hope that we shall have the benefit of their services for many years.

It is with much regret that I have to refer to the death, last year, of Sir Guy Marshall, who was Director of the Institute of Entomology from its foundation in 1913 until 1942, after which he was a part-time worker on the staff for a further seventeen years. Associated with him was Dr. Sheffield Neave, Assistant Director of the Institute from its foundation and subsequently Director from 1942 to 1946. Although Dr. Neave is no longer connected with the Institute you may wish to send him an appropriate message of greeting.

I hope that the meetings will be of the greatest benefit to all present, and now declare the Conference open.

#### Formation of Committees

After the Conference had been formally opened the Director of the Commonwealth Institute of Entomology discussed briefly the Memorandum (Appendix 1) on the work of

the Institute for the past six years. He was followed by the Director of the Commonwealth Institute of Biological Control, who dealt with a corresponding Memorandum on the work of that Institute (Appendix II). Both memoranda had previously been circulated to the delegates.

After brief discussion, the Conference proceeded to appoint a committee to consider the memoranda in detail. The committee was constituted as follows:—

Mr. G. V. B. Herford (Chairman)	...	...	United Kingdom.
Dr. A. P. Arnason	...	...	Canada.
Mr. G. K. A. Buahin	...	...	Ghana.
Dr. W. Cottier	...	...	New Zealand.
Mr. J. Ford	...	...	Southern Rhodesia.
Dr. R. A. E. Galley	...	...	Colonial Office.
Dr. J. W. C. Geyer	...	...	South Africa.
Prof. T. W. Kirkpatrick	...	...	Trinidad.
Mr. E. McMahon	...	...	Republic of Ireland.
Mr. R. A. Melville	...	...	Kenya.
Dr. M. L. Roonwal	...	...	India.
Mr. F. A. Squire	...	...	Nigeria.
Mr. F. Wilson	...	...	Australia.
Enche Ahmad Yunus	...	...	Federation of Malaya.

It was agreed that the Committee should form a Sub-Committee to consider the work of the Commonwealth Institute of Biological Control, and this was later constituted as follows:—

Mr. F. Wilson (Chairman)	...	...	Australia.
Dr. A. P. Arnason	...	...	Canada.
Dr. W. Cottier	...	...	New Zealand.
Dr. J. W. C. Geyer	...	...	South Africa.
Mr. F. H. Jacob	...	...	United Kingdom.
Prof. T. W. Kirkpatrick	...	...	Trinidad.
Mr. A. R. Melville	...	...	Kenya.
Mr. G. M. Roddan	...	...	Colonial Office
Dr. M. L. Roonwal	...	...	India.

Dr. D. P. Annecke and Dr. L. L. J. Ossowski, both from South Africa, were invited to attend the meeting of the Sub-Committee as observers.

Mr. E. O. Pearson, Mr. R. G. Fennah and Dr. F. J. Simmonds attended the Committee meetings, but not as members, and Mr. R. F. Avery and Capt. H. S. Bushell, both of the Commonwealth Institute of Entomology, were present at the first two meetings of the Committee, but likewise not as members.

An account of the discussions in committee is given in Appendix III. The Committee's recommendations were submitted at the final plenary session of the Conference and, after slight emendation, were adopted as resolutions of the Conference.

#### Papers and Discussions

The papers read at the open meetings of the Conference, together with a summary of the discussions that followed, are printed as Appendix IV of this report.

#### Official Reception

Her Majesty's Government in the United Kingdom entertained the delegates to the Commonwealth Entomological and Mycological Conferences at an official reception held at Lancaster House, St. James's, on the evening of the 14th July. The Minister of Science and Lord President of the Council, the Right Honourable Viscount Hailsham, Q.C., received the guests and gave a short address of welcome to the delegates. Mr. F. Wilson (Australia) replied on behalf of the delegates to the Conferences.

### Visits

Visits were made to Rothamsted Experimental Station, East Malling Research Station, and, after the close of the Conference, to the Pest Infestation Laboratory, Slough.

### Proceedings at the Final Meeting

At the final meeting the chair was again taken by Mr. A. Perera. The conference considered the report of the Committee, presented by Mr. G. V. B. Herford, and while doing so discussed suggestions regarding the time and place of the next Conference. The recommendations of the Committee were adopted as the resolutions given below. The Chairman in his closing speech thanked Mr. Herford for his services as chairman of the Committee, Mr. Pearson, Mr. Fennah and the staff of the Commonwealth Institute of Entomology for the efficient arrangements which had been made for the Conference, and Dr. Simmonds for his assistance. Dr. M. L. Roonwal then proposed a vote of thanks to Mr. Perera for his kindness in presiding at the Plenary Sessions, and this was carried with acclamation.

## Conclusions and Resolutions

1. The Conference desires to record its appreciation of the services rendered to scientific workers in the Commonwealth by the Commonwealth Institute of Entomology and the Commonwealth Institute of Biological Control, and to express the hope that at the Commonwealth Agricultural Bureaux Review Conference to be held in August-September 1960, satisfactory financial arrangements, including adequate provision for contingencies, will be made to enable the services of these Institutes to be maintained and, where necessary, extended.

2. The Conference notes with appreciation the careful consideration given by the General Committee and its Sub-Committee to the matters brought before them and makes the following resolutions (3-26) based on the recommendations put forward by the Committee.

### Work of the Commonwealth Institute of Entomology

3. The Conference desires to record its appreciation of the valuable services rendered by Dr. W. J. Hall, the former Director of the Institute.

4. The adequacy of the coverage of the literature in economic entomology provided by the *Review of Applied Entomology* is proving increasingly difficult to maintain and must inevitably be reduced with each increase in the volume of the literature unless steps are taken to remedy the situation. In view of the importance that entomologists throughout the Commonwealth attach to the abstracts in the factual form provided by the *Review*, it is accordingly recommended that provision should be made for three additional members of the editorial and abstracting staff in the quinquennium 1962-67. Furthermore, it is urged that every possible step should be taken to ensure that salaries are adequate to attract and retain abstracting staff.

5. The Conference commends the efforts being made to reduce the arrears of indexing of the *Review of Applied Entomology* and notes with satisfaction the progress made towards the pre-war position in which the index to Series A appeared eight months, and that of Series B five months, after the issue of the December part of the relevant volume. In view of the value of the indexes in their present form, and of their influence on the use of the *Review* as a permanent work of reference, and consequently on the sale of back numbers, their standard should not be reduced in order to accelerate their production.

6. The systematic part of the *Insecta* section of the *Zoological Record* is essential to the work of insect taxonomists throughout the world, while its other two parts provide a bibliography of publications on entomology not covered by the *Review of Applied Entomology* and an index to the subjects with which these deal. The Conference regards its production as an important feature in the services rendered by the Institute and recommends that steps be taken to ensure its continued coverage of the growing volume of entomological literature.

7. The Conference notes that the present authorised establishment of the Identification Service of the Institute, together with the assistance it receives from workers in the British Museum (Natural History) and others, enables it to deal expeditiously with material of economic significance currently received for naming, within the limitations of existing taxonomic knowledge. The unsatisfactory position that exists in certain groups, notably the parasitic Hymenoptera, as regards the proportions that can be named to species can only be remedied by more taxonomic research in these groups. It would adversely affect the work of Commonwealth entomologists if the time spent on routine identifications were to be reduced and it is accordingly recommended that provision be made in the next quinquennium for two additional specialists, of whom one should work on the parasitic Hymenoptera and the other mainly on the Diptera.

### Reviews of Work

8. There is a general consensus of opinion that a useful purpose is served by the Reviews of Work in Economic Entomology in the Commonwealth prepared in connection with the Conference and published as a part of its Report, and that similar reviews, which should be shorter and more uniform in presentation, should be prepared in the future.

### **List of Current Research Projects**

9. The compilation of a list of current research projects in economic entomology that was undertaken by the Commonwealth Institute of Entomology as a result of a resolution of the Sixth Commonwealth Entomological Conference was followed by very few requests for the information that it was designed to supply and it is recommended that this compilation should not be repeated.

### **Directory of Institutions Engaged in Research in Economic Entomology**

10. The Conference is of the opinion that the information that would be furnished by a directory of institutions where work is being done in economic entomology is available, as regards the Commonwealth, in the *List of Research Workers in Agriculture, Animal Health and Forestry* published at intervals by the Commonwealth Agricultural Bureaux organisation, and that to divert the resources of the Commonwealth Institute of Entomology to the preparation and maintenance of such a directory on a world basis would not be justified.

### **Taxonomic Research**

11. The Conference reaffirms the views expressed by the Sixth Commonwealth Entomological Conference regarding the importance of expanding research in insect taxonomy and the key position occupied by the British Museum (Natural History) in relation to this. It records its appreciation of the facilities afforded by the Museum to the specialist staff serving with or attached to the Commonwealth Institute of Entomology, but is concerned lest the desirable expansion of taxonomic research by the staffs of the Museum and the Institute, by visiting taxonomists and by students should be limited by inadequacy of the space available to the Department of Entomology.

### **Phyto-Sanitary Co-operation in Africa**

12. The Conference notes with great satisfaction that the Inter-African Phyto-Sanitary Commission has now been established, thus implementing the suggestions put forward by the Fifth Commonwealth Entomological Conference in 1948.

### **Work of the Commonwealth Institute of Biological Control**

13. The Conference desires to record its appreciation of the valuable services rendered by Dr. W. R. Thompson, the former Director of the Institute.

14. The recommendation of the 1954 Conference to establish an East African Station is endorsed, subject to a sufficient demand for projects in the area. The establishment of such a station would involve the appointment of the two additional entomologists recommended by the previous Conference, and no capital expenditure on buildings would be proposed until the Station had proved its long-term value.

15. It is considered that the work of the Indian and Pakistan Stations has developed very satisfactorily, and has fully justified the approval given to their establishment by the last Conference.

16. The present system of renting laboratory accommodation at the European and West Indian Stations is unsatisfactory, and in view of the proven long-term value of these Stations it is recommended that permanent laboratory buildings be provided.

17. The nature of the work undertaken by the Institute makes it very desirable that the Director should spend much time at its Stations, and should visit Commonwealth and other countries from time to time in order to further the work of the Institute.

18. Provided that Resolution 17 is accepted, it is considered that from an entomological point of view the location of the headquarters of the Institute is of no great consequence.

19. Certain pests are of importance to a number of Commonwealth countries. It would be more efficient and economical if biological-control investigations relating to such species were undertaken on a co-operative basis. The Institute should foster development along these lines.

20. The Institute is at present collaborating with entomological organisations outside the Commonwealth to the advantage of all countries concerned. Such collaboration is highly desirable and should be extended as circumstances permit.

21. The work of the Institute inevitably entails research on the problems which it is requested to investigate. It is desirable, within limits to be determined for each individual project, that this research aspect should not be minimized.

22. Applied insect pathology comes within the scope of the Institute. It is recognized that the Institute has had great difficulty in finding suitable staff to develop this aspect of its activities. The Director should report on progress in this matter to the next Conference.

23. The Parasite Catalogue should be completed and brought up to date in its present form as speedily as possible. Subsequently the Institute should produce a critical Parasite Catalogue, the form of which should be determined by the Director in consultation with the entomological organisations of the Commonwealth.

24. The progress made in the preparation of reviews of biological control work in the different areas of the Commonwealth is noted. It is important that these reviews should be completed as soon as possible.

25. The scientific staff of the Institute should be increased above its present authorised establishment by three entomologists. This, with appointments to the three existing vacancies, would allow for two entomologists at the proposed East African Station, one insect pathologist, and staff for additional work at present Stations.

#### **Future Commonwealth Entomological Conferences**

26. The Conference reaffirms the value of meetings at approximately five-year intervals of entomologists drawn from as many Commonwealth countries as possible. It recommends that the Eighth Commonwealth Entomological Conference should be held in advance of the Commonwealth Agricultural Bureaux Review Conference following that of 1960, at a date to be recommended to Governments as far in advance as possible by the Executive Council of the Commonwealth Agricultural Bureaux.

#### **Acknowledgements**

27. The Conference wishes to tender its grateful thanks to Her Majesty's Government in the United Kingdom and to the Royal Entomological Society of London for the hospitality extended to it, and to the last named also for the privilege of using its Council and Meeting Rooms. It also wishes to thank the Council of the Royal Geographical Society for the use of their Memorial Hall for the Open Meetings of the Conference, and the Trustees of the Natural History Museum for the use of their Board Room for one of the meetings of the Committee of the Conference.

28. The Conference wishes that its grateful thanks be conveyed to Mr. F. C. Bawden, Dr. F. R. Tubbs, and Mr. G. V. B. Herford, and their staffs, for the welcome accorded to the delegates on the occasions of their visits to Rothamsted Experimental Station, the East Malling Research Station, and the Pest Infestation Laboratory, and for the admirable arrangements for the display and explanation of the work in progress at these centres.

## APPENDIX I

### MEMORANDUM ON THE WORK OF THE COMMONWEALTH INSTITUTE OF ENTOMOLOGY FROM 1ST APRIL, 1954 TO 31ST MARCH, 1960

During the six years that have elapsed since the Sixth Commonwealth Entomological Conference, the Institute has maintained and in general improved its services to the Commonwealth. The period has been, in some respects, a difficult one. The Agricultural Bureaux Review Conference which met in 1955 gave support to those recommendations of the previous year's entomological Conference that had a bearing on the staffing and finances of the Institute, but salary revisions have resulted in increases of the order of thirty-six per cent. over the salary rates current in 1955, upon which the Institute's finances for the quinquennium 1957-1962 were based. These have been, to some extent, offset by the increase in the Institute's total receipts from publications, which reached, in 1956-57, a record figure of £15,581. Nevertheless, in implementing recommended increases in staff, it has been necessary to bear in mind the overall financial position, and exercise prudence. There has been difficulty, in any case, in recruiting and retaining certain vital grades of staff, and in recent years the Institute has lost the services of some of its most experienced workers. The emphasis has thus had to be placed on the Institute's existing, major activities rather than on expanding into new fields.

2. In December 1954, negotiations were completed for the lease of No. 56 Queen's Gate, and the removal of the Publications Office and Library to the new premises was accomplished in seven days in May 1955. The extra space so acquired was greatly needed and has enabled the Institute's entire stock of publications, and library, to be brought together once more under one roof (Resolution 26).<sup>\*</sup> In 1958 the opportunity arose and was taken of buying the freehold of the premises, which are conveniently adjacent to the Natural History Museum and also to the Royal Entomological Society of London, from whom our former premises were leased and with whom our association has been so long and happy.

#### Identification of Insects

3. At the Sixth Commonwealth Entomological Conference it was recommended (Resolution 7) that the identification service of the Institute required strengthening by the appointment of three further specialists, one of whom should work on the Acarina, and this recommendation was accepted by the Commonwealth Agricultural Bureaux Review Conference, 1955. Two of these posts have since been filled, and the third will be if it is warranted by the financial position nearer the end of the present quinquennium (1957-62).

4. The number of identifications sent out by the Institute in the past six years is given in the following Table.

Year	Africa	America	Asia	Australasia, New Zealand & Pacific Is.	Europe	Total
1954-55	2,956	375	1,390	751	711	6,183
1955-56	3,568	333	1,802	848	653	7,204
1956-57	3,931	248	1,681	1,602	529	7,991
1957-58	2,680	280	2,210	1,338	581	7,089
1958-59	3,889	119	1,322	1,040	578	6,948
1959-60	3,732	235	2,098	1,193	293	7,551

<sup>\*</sup> In this Memorandum, references to numbered resolutions are to those given on pp. 10-13 of the *Report of the Sixth Commonwealth Entomological Conference, 1954.*

5. The identification work is carried out by a staff of ten full-time specialists and four who work on a part-time basis. The Institute has lost the services of three of its most experienced specialists. Dr. F. I. van Emden, who was an authority not only on the Diptera, but also on the larvae of the Coleoptera, died in August, 1958, and Sir Guy Marshall, whose knowledge of the Curculionidae was unrivalled, in April, 1959. Mr. N. C. E. Miller retired in August, 1958, after ten years' service as specialist in Hemiptera.

6. In 1955, Mr. D. MacFarlane took up appointment as specialist in Acarina, and in July, 1959, Mr. R. W. Crosskey and Dr. M. S. K. Ghauri, as specialists in Diptera and Hemiptera, respectively; in October 1959, Dr. B. J. Selman was appointed to work on the Chrysomeloid Coleoptera. There was a delay of nearly a year in filling the vacancies in the Diptera and Hemiptera, during which both groups were handled by Mr. R. G. Fennah, whose first year as Assistant Director was thus occupied, to a considerable extent, with routine naming. Through his efforts, no serious interruption of our identification services took place. Invaluable help is given by Mr. G. E. Bryant, Mr. R. J. Collins, Dr. Dirsh and Dr. W. J. Hall, working part-time as specialists in Coleoptera, Lepidoptera, Orthoptera and Hemiptera, respectively. Mr. W. V. Harris, Officer-in-Charge of the Colonial Termite Research Unit, which is attached to the Institute, determines termite material submitted for identification.

7. Mr. E. A. J. Duffy spent three months in Ghana and Nigeria in 1955 and a similar period in Trinidad and British Guiana in 1957, collecting material for his series of monographs of the immature stages of timber beetles; the expenses of these visits were met by the Governments concerned, assisted, in the case of the second, by the Colonial Development and Welfare funds and the Percy Sladen Trust.

8. Two members of the Colonial Pool of Entomologists, Mr. E. S. Brown and Dr. I. W. B. Nye, while in the United Kingdom between assignments abroad, have carried out taxonomic studies arising from the projects on which they had been engaged.

9. Members of the curatorial staff of the British Museum (Natural History), as in former years, have kindly undertaken identifications of insects in certain groups, and the Institute has also been able to avail itself of the assistance of other specialists working in the United Kingdom, the Commonwealth and elsewhere. The help of all has been much appreciated and is gratefully acknowledged. It is with much regret that we have to record the loss of three of these helpers, Dr. H. F. Barnes, Mr. C. L. Collenette and Dr. Karl Jordan, who for many years dealt with the identification of gall-midges, Lymantriidae and Anthribidae, respectively.

10. Between 1954 and 1960, 54,669 specimens have been presented to the British Museum (Natural History) and these have included the types of 678 new species and specimens of a further 1,490 species not previously represented in the Museum collections.

11. The Institute is today able to give better service, as regards naming insects, than at any former time: all arrears have been overtaken (including, notably, those in the Acarina) and collections are being dealt with expeditiously.

12. The degree of precision with which identifications can be made depends, of course, upon the state of taxonomic knowledge in the group concerned and the extent to which this is reflected in the indexing and arrangement of the working collections of the Museum. There is still an urgent need for an intensification of taxonomic research. Recommendations were made at the Sixth Commonwealth Entomological Conference regarding the supply and training of taxonomists, and these were duly transmitted to the organisations referred to by the Conference (Resolutions 18-20). The Institute has attempted, within the limit of its terms of reference, to help in implementing these recommendations, but the overall picture in insect taxonomy cannot be said to have changed greatly.

## Publications

### Review of Applied Entomology

13. The production of this monthly publication, now in its 48th volume, continues to be one of the Institute's most important activities. Neither the flow of literature requiring abstracting, nor its complexity, show any signs of diminishing, and it has been necessary to continue the policy, approved by the 1948 and 1954 Conferences, of selection of material



for abstracting. Grave difficulties have been experienced in recruiting and retaining abstractors with linguistic qualifications: since the 1954 Conference, nine abstractors have left and eight have been recruited, leaving us, on balance, with one less on our strength. Apart from the restriction which this shortage of abstractors places on the coverage of the literature (particularly foreign literature), the time that has to be spent on training new recruits seriously interferes with normal editorial duties and has contributed to the delay in the production of indexes.

14. The number of subscribers to Series "A" and Series "B" and the total cash receipts from sales of the *Review* over the past six years, with corresponding figures for 1953 for comparison, are shown in the Table below.

Vol.	Year	No. of subscribers		Total cash receipts (£)*
		"A"	"B"	
41	1953	1,232	1,025	5,197
42	1954	1,300	1,085	5,387
43	1955	1,349	1,083	5,290
44	1956	1,381	1,108	7,592
45	1957	1,391	1,073	6,603
46	1958	1,331	1,039	7,053
47	1959	1,361	1,036	7,039

15. The number of subscribers, which showed a steep rise in the post-war years, reached a maximum in 1957. The slight fall that occurred the following year was due mainly to subscribers reducing to one series only when formerly they had taken both, and probably reflected a reaction to the substantial increase (fifty per cent.) in the subscription rate that had to be made in 1957 to offset rising costs, the price of Series A being raised to £3 (from £2) and of Series B to 30s. (from 20s.).

16. The demand for back numbers of the *Review*, including complete sets, continues to be high, and receipts from this source have averaged some £1,500 per annum. To continue to be able to meet this demand, certain volumes of which supplies were running low have been reprinted by the xerographic process.

17. A defect from which the *Review* has suffered for some years past has been the delay in the issue of indexes. At the beginning of 1959 it became possible to put into effect special arrangements to overcome these arrears, and in the past eighteen months five indexes have been issued (those to Vols. 44, 45 and 46 of Series "A" and to Vols. 45 and 46 of Series "B") and it is hoped to be up to date by the end of this year.

18. A new edition of *Serial Publications Examined* was issued to all recipients of the *Review* in April, 1960.

19. Production of the *Review* was maintained uninterrupted by the prolonged printing dispute of 1959; two successive issues (June and July 1959) were prepared by a combination of varityping and xerographic reproduction, and in format, type face and general appearance were close replicas of the normal issue. The exercise, though costly, afforded useful experience of a possible alternative to normal methods.

#### Bulletin of Entomological Research

20. This quarterly journal reached its jubilee in 1959 and is now in the 51st year of its publication. It continues to serve, particularly, as an important medium for the publication of the results of research done in the developing territories of the Commonwealth. The increase in size initiated in 1950 has been maintained; the aim is about 800 pages (exclusive of index), but this has occasionally been exceeded so as to accommodate particularly lengthy but important papers. Figures for the size of volumes, number of subscribers, and total cash receipts (including those from sales of reprints and back numbers) during the past six years are given below. The rise in the numbers of subscribers received a check following the substantial price increase (to £5, from £3) that became necessary in 1957.

\* For the financial year ended 31st March of the next volume year.