

C.C.T.A./C.S.A.

TENTH MEETING OF THE SCIENTIFIC COUNCIL

1959

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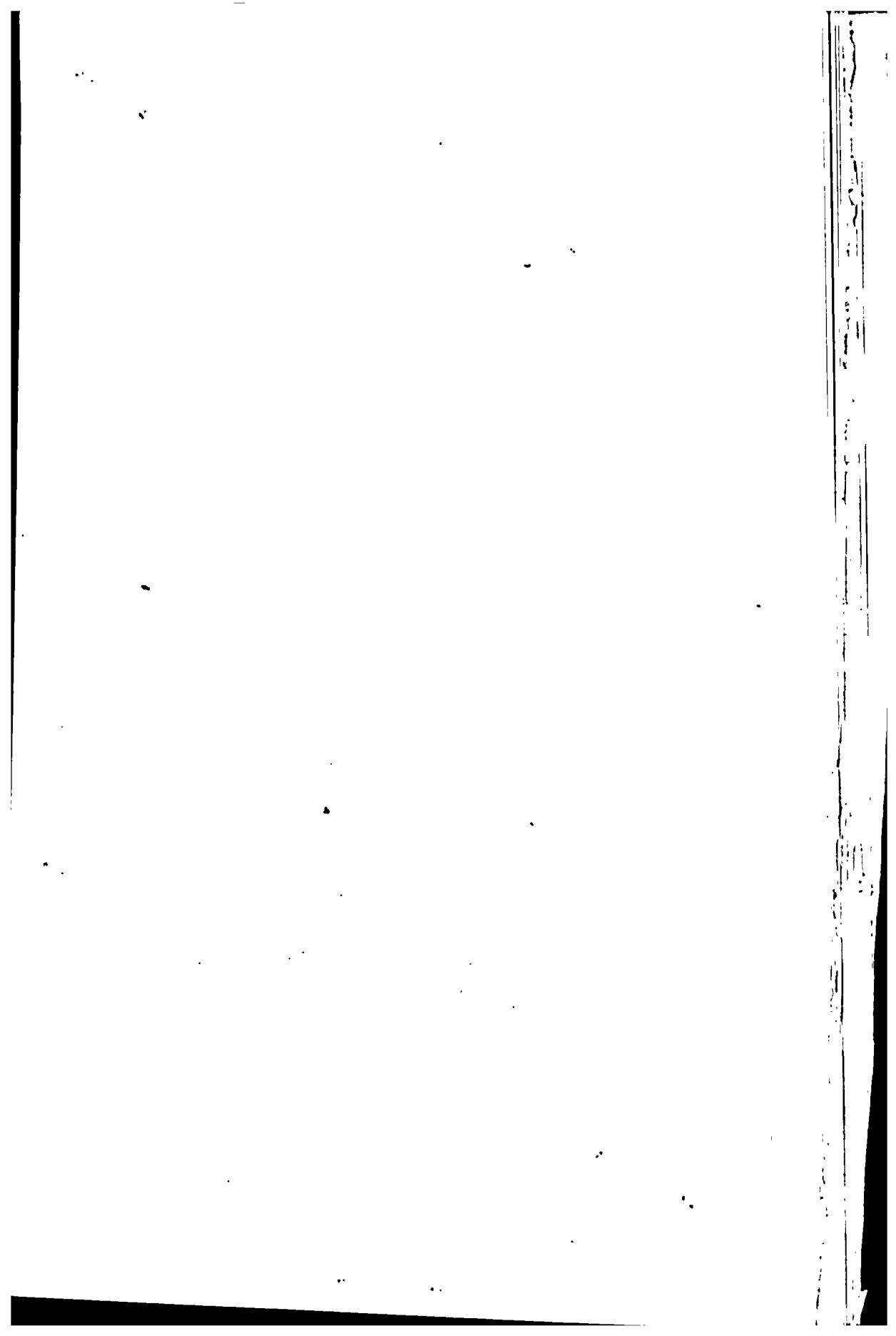
Scientific Council for Africa South of the Sahara

TENTH MEETING OF THE SCIENTIFIC  
COUNCIL

KAMPALA

1959

C.C.T.A.



ORGANIZATION OF AFRICAN UNITY  
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# COMMISSION DE COOPERATION TECHNIQUE EN AFRIQUE AU SUD DU SAHARA

Créée en Janvier 1950, la Commission de Coopération Technique en Afrique au Sud du Sahara (C.C.T.A.) a fait l'objet d'une Convention Intergouvernementale signée à Londres le 18 Janvier 1954. Elle se compose, à l'heure actuelle, des Gouvernements suivants : Belgique, Fédération de la Rhodésie et du Nyassaland, République Française et Communauté, Ghana, République de Guinée, Libéria, Portugal, Royaume-Uni, Union de l'Afrique du Sud.

## OBJECTIF

Assurer la coopération technique entre les territoires dont les Gouvernements Membres sont responsables en Afrique au Sud du Sahara.

## ATTRIBUTIONS

- 1) Traiter de tout sujet concernant la coopération technique entre les Gouvernements Membres et leurs territoires dans le cadre de la compétence territoriale de la C.C.T.A.
- 2) Recommander aux Gouvernements Membres toutes mesures tendant à la mise en œuvre de cette coopération.
- 3) convoquer les conférences techniques que les Gouvernements Membres ont décidé de tenir.
- 4) Contrôler du point de vue général et du point de vue financier l'activité des organismes placés sous son égide et présenter aux Gouvernements Membres toutes recommandations y afférentes.
- 5) Présenter des recommandations aux Gouvernements Membres en vue de la création de nouveaux organismes ou la révision des dispositions existantes pour la coopération technique, dans le cadre de la compétence territoriale de la C.C.T.A.
- 6) Présenter des recommandations aux Gouvernements Membres en vue de formuler des demandes conjointes d'assistance technique aux organisations internationales.
- 7) Présenter des avis sur toutes questions concernant la coopération technique que lui soumettront les Gouvernements Membres.
- 8) Administrer le Fonds Interafricain de la Recherche et la Fondation pour l'Assistance Mutuelle en Afrique au Sud du Sahara.

## BUDGET

Alimenté par les contributions des Gouvernements Membres.

## ORGANISATION

- 1) La C.C.T.A. se réunit au moins une fois chaque année. Ses recommandations et conclusions sont portées à la connaissance des Gouvernements Membres en vue de leur adoption à l'unanimité ainsi que de leur mise en œuvre dans les territoires intéressés.
- 2) Le Conseil Scientifique pour l'Afrique au Sud du Sahara (C.S.A.), Conseiller scientifique de la C.C.T.A., a été créé en novembre 1950, comme suite à la Conférence Scientifique de Johannesburg (1949), en vue de favoriser l'application de la science à la solution des problèmes africains. Il est composé de personnalités éminentes, choisies de telle sorte que les principales disciplines scientifiques importantes au stade actuel du développement de l'Afrique soient représentées. En tant que membres du Conseil ces personnalités n'agissent pas sur instructions de leurs Gouvernements respectifs mais sont responsables individuellement devant le Conseil.
- 3) Des Bureaux et Comités techniques traitent chacun un aspect particulier de la coopération régionale et interterritoriale en Afrique au Sud du Sahara.
- 4) Le Secrétariat de la C.C.T.A. et du C.S.A. comprend deux sièges : l'un, jusqu'ici à Londres, est en cours de transfert à Lagos, l'autre se trouve à Bukavu. Il est dirigé par un Secrétaire Général assisté de deux Secrétaires Généraux Adjointes et, à Bukavu, d'un Secrétaire Scientifique et d'un Secrétaire Scientifique Adjoint. Le Secrétaire de la F.A.M.A. est également adjoint au Secrétaire Général.

## PUBLICATIONS

Des brochures traitant de problèmes scientifiques et techniques, dont les données sont habituellement rassemblées en Afrique par le C.S.A., sont publiées à Londres. Toute demande d'information devra être adressée au siège de Londres du Secrétariat, à l'attention du fonctionnaire chargé des Publications et de l'Information.

# COMMISSION FOR TECHNICAL CO-OPERATION IN AFRICA SOUTH OF THE SAHARA

Established in January, 1950, the Commission for Technical Co-operation in Africa South of the Sahara (C.C.T.A.) was the subject of an Inter-governmental Agreement signed in London on 18 January 1954. It consists now of the following Governments: Belgium, Federation of Rhodesia and Nyasaland, French Republic and Community, Ghana, Republic of Guinea, Liberia, Portugal, Union of South Africa, United Kingdom.

## OBJECT

To ensure technical co-operation between territories for which Member Governments are responsible in Africa South of the Sahara.

## FUNCTIONS

- (1) To concern itself with all matters affecting technical co-operation between the Member Governments and their territories within the territorial scope of C.C.T.A.
- (2) To recommend to Member Governments measures for achieving such co-operation.
- (3) To convene technical conferences as agreed by Member Governments.
- (4) To supervise, from the financial and general points of view, the work of the organisations placed under its ægis and make recommendations thereon to the Member Governments.
- (5) To make recommendations to the Member Governments for the setting up of new organisations or the revision of existing arrangements for securing technical co-operation within the territorial scope of C.C.T.A.
- (6) To make recommendations to the Member Governments with a view to the formulation of joint requests for technical assistance from international organisations.
- (7) To advise Member Governments on any other subject in the field of technical co-operation which the Member Governments may bring to its notice.
- (8) To administer the Inter-African Research Fund and the Foundation for Mutual Assistance in Africa South of the Sahara.

## FINANCE

Contributions from Member Governments.

## ORGANISATION

- (1) C.C.T.A. meets at least once a year. Its recommendations and conclusions are submitted to Member Governments for unanimous approval and for implementation in the territories concerned.
- (2) The Scientific Council for Africa South of the Sahara (C.S.A.), Scientific Adviser to C.C.T.A., was established in November 1950 following the Johannesburg Scientific Conference (1949) to further the application of science to the solution of African problems. Its members are eminent scientists chosen in such a manner that the main scientific disciplines important at the present stage of the development of Africa shall be represented. As members of the Council they do not receive instructions from Governments but are responsible individually to the Council.
- (3) Technical Bureaux and Committees deal with specific aspects of regional and inter-territorial co-operation in Africa South of the Sahara.
- (4) The C.C.T.A./C.S.A. Secretariat has two offices, one in London and one in Bukavu. The London office is at present being transferred to Lagos. The Secretariat has at its head a Secretary-General, who is aided in his work by two Assistant Secretaries-General and, at Bukavu, by a Scientific Secretary and an Assistant Scientific Secretary. The Secretary-General is also assisted by the Secretary of F.A.M.A.

## PUBLICATIONS

Publications dealing with scientific and technical problems, the data of which are usually collected in Africa by C.S.A., are issued in London. Inquiries should be addressed to the London office of the Secretariat, for the attention of the Publications and Information Officer.



**C. S. A.**  
**Scientific Council for Africa South of the Sahara**

**TENTH MEETING OF THE SCIENTIFIC  
COUNCIL**

**KAMPALA**

**1959**

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Africa South of the Sahara.*

**C.C.T.A.**



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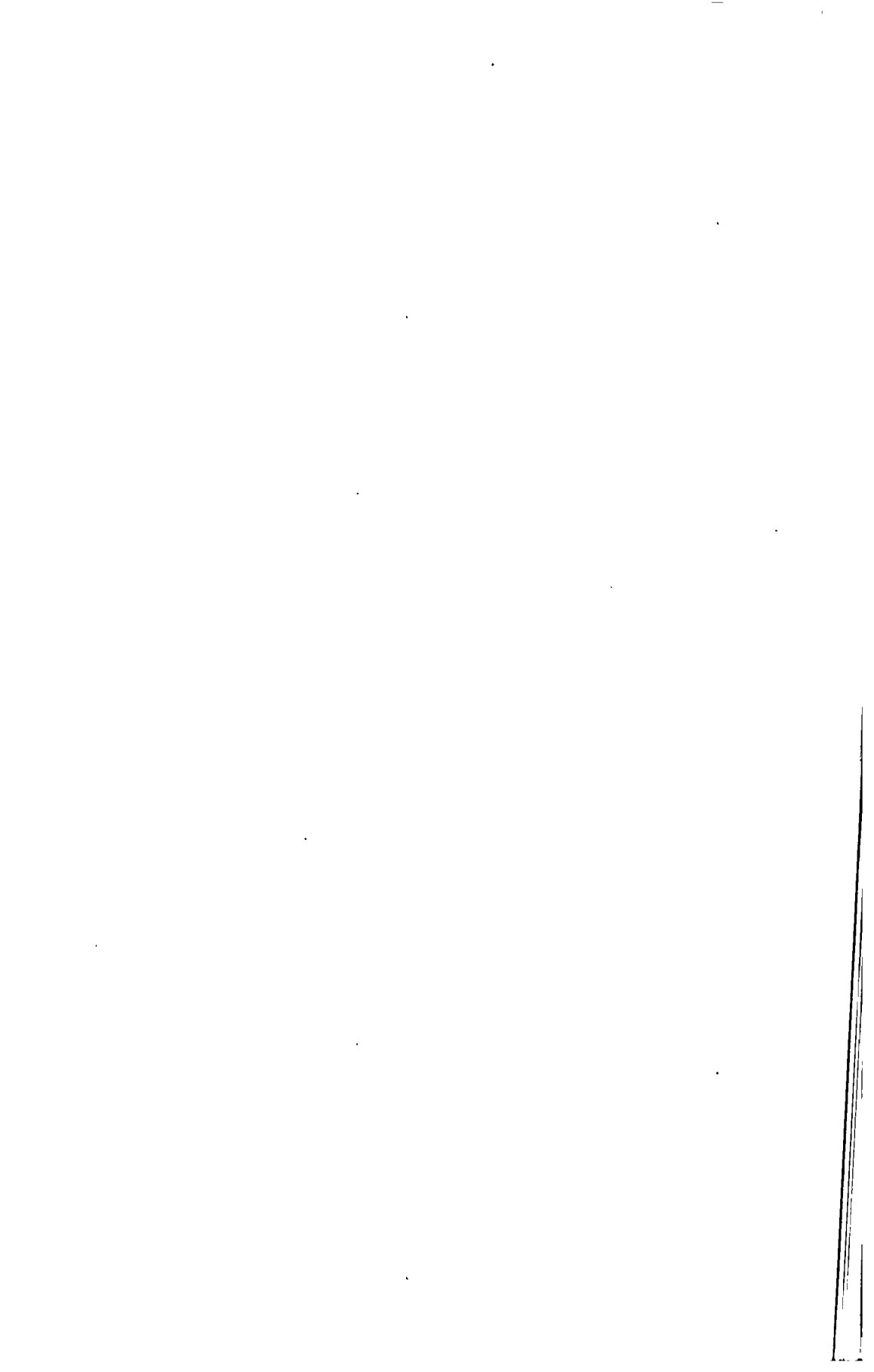
REPORT OF THE SECRETARY-GENERAL  
TO THE  
TENTH MEETING OF THE SCIENTIFIC COUNCIL

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## PART ONE—GENERAL AND ADMINISTRATION

### I.—GENERAL INTRODUCTION

The trends previously reported have become more marked in the last year, particularly in West Africa. The African countries are progressively taking over control of their affairs. Whether in a context of independence or of very wide internal autonomy, they are assuming responsibility in all technical and scientific spheres. It is accordingly to them that the Commission now addresses itself in matters concerning its activities.

This development is not without its difficulties and obstacles from a technical angle. Urgent needs arise which must be met immediately. Administrative and technical structures are upset and often thoroughly disrupted. Frequent changes of personnel occur, and the newcomers at times find difficulty in laying down a long-term policy in regard to technical matters because of the multifarious day-to-day problems and the lack of experience on the part of some junior officials. Finally, the nature of the relations between the countries of Europe and of Africa is changing and these relations are becoming less closely knit at the technical level.

At the same time, the interest displayed in Africa by other continents continues to increase. The international world organisations receive a succession of urgent, virtually unanimous directives from their members, for assistance to be given to Africa. Thus the outside technical resources available to the African countries are becoming more numerous, although awkward problems at times arise in co-ordinating and integrating them with the existing resources.

\* \* \*

C.C.T.A. is adapting itself to these new conditions. Not only is its membership broadening every year, but its organisation too is evolving in line with events. The Republic of Guinea has become the ninth Member. In 1960, three or four new members are expected to join. The European headquarters of the Commission is about to be closed and transferred to Lagos, where the Secretary-General has been established since May; the other headquarters being at Bukavu, the C.C.T.A./C.S.A. will thus be centrally located in the countries it serves.

The work undertaken reflects this development. The accent is on practical activities, of immediate application, strictly delimited. The increasing number of Member countries is leading to regionalisation of activities: a technical meeting is of value only if those really responsible take part, but the new States cannot send their delegates to too distant regions and it is



undesirable to assemble too many participants at one meeting. The international organisations are more closely associated than formerly in the work of the Commission and even in determining its programmes.

Thus the Commission remains the co-ordinating body for liaison between the countries of Africa, a means of close contact between technical services in the sub-continent and experts from Europe.

\* \* \*

In the context of this development, the role of the Scientific Council is growing in importance. The Members of C.S.A. are not only the advisers to the Commission but are becoming an essential factor in maintaining co-ordination on the technical and scientific level; in Africa itself, between governments and specialists or research workers, for whom present developments entail a risk of being cut off from political circles; between Africa and Europe, by maintaining the close links between specialists in the sub-continent and European experts. In this period of frequent change, the Council enables the laying down of priorities as between the manifold activities of the Commission and of Member Governments; it contributes to the proper maintenance of fundamental research. Finally, the Members and Associate Members of C.S.A. are a valuable source of advice and counsel for the Commission's organisations and consequently for the Member Governments themselves.

The advantage to the regional organisation for Africa South of the Sahara of having independent, qualified and experienced personalities available cannot be over stressed. The welcome extended to C.S.A. in August 1958 by a newly independent State, Ghana, is profoundly encouraging. The difficulties which other organisations encounter in laying down the broad lines of their programmes and deciding a long-term policy demonstrate the great value of the Council to the Commission and the Member Governments.

The basis of this authority, the justification of this work, are to be found in the underlying principles of C.S.A.; complete independence of its Members from any government or national authority; scientific eminence; experience of Africa and of African conditions. Accordingly there is no change to suggest for the future. On the contrary, the Council should continue in the way it has marked out for itself since the Johannesburg Conference.

## II.—THE COUNCIL

Reference will be made throughout the report to the activities of C.S.A.: Specialist Meetings, participation in Conferences and Symposia organised by the Commission, contribution to the work of F.A.M.A., etc. It should

further be noted that the Executive Committee held its Sixteenth Meeting immediately preceding the Fourteenth Session at Monrovia and that its three Members, Dr. du Toit, Professor Millot and Professor Lebrun participated in the whole of the work of the Session, joining in on many occasions to afford guidance to governments on scientific points. Particular note was taken by the new Members of the Commission of this action on their part, which called forth most appreciative comment.

### Membership of the Council

Six Members of the Council will reach the end of their three-year term after the Tenth Meeting:

Dr. Bates  
 Professor Forde  
 Professor Leduc  
 Professor Millot (Vice-Chairman)  
 Dr. Russell  
 Professor van den Berghe.

The Commission approved in principle the gradual increase in the number of Members from fourteen to twenty. Two new Members were appointed following the Ninth Meeting, Professor Hart and Dr. Martin (their appointment was confirmed by the Commission at its Fourteenth Session). It is for the Council to decide whether it wishes to proceed to a further nomination for 1960 or, as would seem to be indicated by last year's discussion, would rather defer any additional nominations to the Eleventh Meeting so as to be better placed to determine the effects on its work of the developments mentioned above, since it is in 1960 that events will take a more definite turn.

Whether six Members or more are to be appointed, the Council will need to proceed to elections at its Tenth Meeting. A detailed memorandum will be circulated by the Secretariat to the Members of C.S.A., suggesting a voting procedure. In view of past experience, the procedure suggested will be that of voting for several members on one list, taking into account the order of preference indicated by each Member of the Council.

Five Associate Members also reach the end of their three-year term:

Dr. Binns (veterinary sciences)  
 Dr. Haddow (medicine)  
 Dr. Obermuller (geology)  
 Professor Robequain (geography)  
 General Vaucel (medicine).

Last year, in view of the comments of the Executive Committee, the Council agreed that it would in future be advisable for the appointment of Associate Members to be linked with the programmes laid down for C.C.T.A./

C.S.A. In other words, each Associate Member would be asked to concern himself with an activity recommended by the Council. The number of Associate Members would thus be variable; but each would make a direct personal contribution to a specific aspect of the general work. Thus the Council decided to nominate for Associate Membership Dr. Tigani el Mahi, the psychiatrist, of Khartoum, who took a distinguished part in the Meeting on Mental Health (appointment confirmed by the Fourteenth Session).

### III.—FOUNDATION FOR MUTUAL ASSISTANCE IN AFRICA (F.A.M.A.)

The activities of F.A.M.A. will be considered in the several chapters of the report. It has become an integral part of the C.C.T.A./C.S.A. organisation and its work is integrated with that of the Commission.

The First Meeting of the Foundation was held in Monrovia immediately following the Fourteenth Session of the Commission. Observers from Spain, Somalia and the United States, as also from the U.N., I.L.O., W.H.O. and U.N.E.S.C.O. took part in the discussions. The Meeting adopted F.A.M.A.'s first annual report which is to be distributed soon. It also heard offers by Member Governments of technical assistance to be made available in 1959. Most of these were expressed in terms of money value: the total sum thus available for technical assistance under the F.A.M.A. scheme in 1959 is approximately 300,000 U.S. dollars. In addition, a considerable amount of assistance has been offered in kind (training and research facilities). The Meeting endorsed the general proposal for the organisation from time to time of *ad hoc* training courses in Africa, including courses of short duration for specialists and of longer duration for middle-grade officials or technicians; the latter courses wherever suitable to be designed for a part of the region and conducted in one language only.

At all meetings organised by the Commission since 1958, congratulations were expressed on the formation of F.A.M.A. and suggestions offered. The Directors of the Bureaux and permanent organisations of the Commission have on several occasions turned to F.A.M.A. Conversely, the Secretary of the Foundation has sought their advice in various matters. Finally, the Secretary-General and his assistants have presented detailed statements on F.A.M.A. and answered many questions regarding it during their travels in Africa.

In short, F.A.M.A. has now taken its place within C.C.T.A./C.S.A. It benefits from present and past activities of the Commission; it depends on it for the technical basis of its knowledge of African problems and peoples; sometimes its programmes are linked with one of the Commission's projects. The Commission's operations, thanks to this new body, are more complete, more far-reaching and spectacular. To the exchange of information and the co-ordination of programmes, F.A.M.A. has now made it possible to add the

training of supervisory staff and the provision of experts. It is too soon to determine the extent of the Commission's future action in the field of technical assistance. But it is not too soon to assert that the effect of the important decision taken in 1958 is to consolidate the edifice of inter-African co-operation and give fuller meaning to the term.

The Council fulfils an indispensable role in this development; as promised in Recommendation XI of the Ninth Meeting, the Members of C.S.A. have spared no effort in assisting the Secretary of F.A.M.A. and advising him whenever called upon to do so.

#### IV.—EXTERNAL RELATIONS OF THE COMMISSION

##### Non-Member Governments

The policy has been pursued of seeking to associate non-Member countries south of the 20th parallel in the activities of the Commission. Invitations to all meetings are sent to the Governments of Ethiopia, Italy (for Somalia), Spain and the Sudan. These invitations have produced varied results. Somalia has taken part in several meetings. The sending of delegates and participants from Ethiopia to a large number of symposia, specialist meetings and training courses will be noted; this is a new development. Spain and the Sudan have been represented only at one or two gatherings organised by the Commission.

\* \* \*

The continuing interest shown by Israel in the work of the Commission should also be mentioned. The Israel Government has asked for technical information on several events. Documentation destined for several territories has been sent by Israeli experts through the medium of C.C.T.A. Relations with the Netherlands concerned problems of technical assistance and questions connected with the mechanisation of agriculture. Finally, various requests for information have been received from the most distant and most unexpected countries: Poland, Rumania, Iran, Japan, Argentina, etc.

As regards non-member Governments outside Africa, the most salient fact of the year has been the interest shown by the United States in regard to the Commission, an interest expressed in several ways. The United States Government sent observers to the Extraordinary Session in 1958 and to the first meeting of F.A.M.A.; American research bodies and universities appointed observers to attend a number of gatherings, and their requests for information have multiplied.

Above all, the American technical aid department (I.C.A.) has adopted a positive attitude towards the Commission, details of which will be given in the body of the present report. The Fourteenth Session adopted the following Recommendation:

“The Commission considers that such offers can prove useful when they are of a precise character, exactly defined in their object and scope, and when they apply to scientific and technical subjects with which the Commission or F.A.M.A. are directly concerned. It RECOMMENDS that the Secretariat should submit such offers for the consideration of Member Governments, with precise indications of their relationship to the activities of C.C.T.A. or of F.A.M.A., in order that each case may be examined on its merits.

“The Commission finally RECALLS that its relations with I.C.A. can in no way interfere with bilateral arrangements between the Government of the United States and any one of the Member Governments”.

Among offers not dealt with in the chapters devoted to technical subjects, two call for separate mention:

It will be possible, when Member Governments so desire, to secure the participation in C.C.T.A. specialist meetings of American experts whose scientific or technical contribution could be of value; the practical arrangements will be made on behalf of the United States Government by the National Science Foundation.

A separate paper will be circulated to Members of the Council regarding I.C.A. proposed aid for new or existing African journals in the scientific and technical fields. I.C.A. is considering suggestions made through the Secretariat for assistance in the publication of individual reports, studies and monographs. These are, in general, less eligible for I.C.A. aid than journals but, in certain cases, the possibility of I.C.A. seeking aid from other organisations in the United States is also being considered. The possibility is also being considered by I.C.A. of providing aid in the form of help to the libraries of institutions in Africa with subscriptions to scientific and professional journals, but it is now feared that there will be insuperable administrative difficulties in the handling of such requests.

The Fourteenth Session noted the I.C.A.'s offer in respect of publications. As regards the launching of new periodicals and the extension of existing ones, it suggested that C.S.A. should submit recommendations if it felt that certain fields were insufficiently covered.

### **Relations with other International Organisations**

Details of the Commission's relations with other international organisations will be reviewed throughout this Report. There is no activity that does not involve such relations. Some fifty observers were sent by other international organisations to C.C.T.A. meetings and the first meeting of F.A.M.A. The Commission itself was represented at more than twenty meetings sponsored by other organisations, and was obliged to decline a still greater number of invitations. In the course of a year, twelve meetings were organised

by C.C.T.A./C.S.A./F.A.M.A. jointly with one of the international organisations. Finally, the habit has developed of unofficially consulting with Dr. Cambournac (W.H.O.), and now with Mr. Terver (F.A.O.), regarding the respective programmes before submitting them to governments, so as to avoid overlapping and permit co-ordination; a similar procedure is envisaged with Mr. Abbas (E.C.A.).

The basic principles of the growing understanding between C.C.T.A. and other international organisations are exactly as the Council had anticipated. The world organisations find it useful, when dealing with African problems, to turn to the competent regional organisation in order to make use of the close contacts which the Commission has established with every country, technical service and institution in Africa, to draw on the fund of experience accumulated by C.C.T.A. and C.S.A., and to profit by the scientific and technical qualifications of the Members of C.S.A. For its part, the Commission benefits by working with organisations which contribute world-wide experience, often large additional resources, and great authority.

Brief notes are given here on each of the organisations, the detail being dealt with in the chapters devoted to the relevant technical activities.

**(a) U.N.—New York ; Economic Commission for Africa (E.C.A.)—  
Addis Ababa**

Close relations have been maintained with the Bureau of Social Affairs in New York, bearing more especially on problems of community development and housing.

A salient feature of the past twelve months has been the creation of the E.C.A., which is dealt with in the chapter on economic questions. A Recommendation of the Fourteenth Session gives precise instructions to the Secretary-General for the establishment of close relations with E.C.A., in particular through the exchange of publications and mutual invitations to technical meetings and annual sessions.

**(b) F.A.O.—Rome, Accra**

Co-operation with F.A.O. has become much closer in the course of the past year in all fields relevant to natural resources, and also in questions of nutrition and statistics. The creation of an African Regional Office of F.A.O. at Accra should assist these relations; the Organisation will have more concrete programmes, the proximity of the offices will facilitate personal contacts. Finally, note should be taken of the expressed wish of Mr. Terver, the Director of the new Office, to maintain constant relations with the C.C.T.A./C.S.A. Secretariat. Interesting suggestions have been advanced by F.A.O. aimed at enabling F.A.M.A. to benefit by the technical advice of the

competent divisions in Rome in the study of certain problems of technical assistance.

**(c) W.H.O.—Brazzaville**

The same remarks apply as in previous reports regarding the excellent relations with the W.H.O. Regional Office. A report on the subject will be found in the chapter on health.

**(d) I.L.O.—Geneva, Lagos**

Relations with I.L.O. are covered in the chapter on labour. This includes a report on the conclusion of a formal Agreement between the two organisations. The new departure has been welcomed by the governments. This Agreement could serve as a precedent for defining relations with the other Specialised Agencies.

**(e) U.N.E.S.C.O.—Paris**

Liaison with U.N.E.S.C.O. is still somewhat loose, that Organisation having as yet few detailed programmes for Africa apart from its activities in respect of arid zones. References thereto will be found in various chapters of the Report. One special point will be raised by Professor Aubert, who was a member of the U.N.E.S.C.O. Advisory Committee on Arid Zone Research for several years; this made it possible to give expression to the views of C.C.T.A./C.S.A. Unfortunately his term has expired. It would be desirable, however, for a Member of the Advisory Committee to be informed of our work—mention is made of U.N.E.S.C.O.'s activities in respect of the arid zones at several points in the Report. Professor Aubert will propose the adoption by the Council of a Recommendation on the subject.

**(f) Other specialised Agencies and other International Organisations**

An account is given further on of relations with I.A.E.A. (Vienna) and W.M.O. (Geneva). Note will also be taken of meetings organised jointly with the International Children's Centre (Paris) and the World Federation for Mental Health (London). Lastly, among non-governmental organisations, special mention should be made of the International Road Federation which has often been called on by the C.C.T.A./C.S.A. Secretariat to meet requests for information.

**(g) General Remarks**

Several comments are called for apropos of relations with the international organisations:

Many scientists are concerned in the over-all co-ordination of the activities of the international organisations. In Africa South of the

Sahara, the problem is already a complex one; it becomes far more so when the territorial limits of these activities are not identical. One has only to mention the work of U.N.E.S.C.O. on arid zones, which concerns four adjoining sub-continent, to realise this. A memorandum will be circulated to the Members of the Council on the basis of comments by Dr. Russell.

It has been shown to be indispensable, when a meeting is organised jointly by C.C.T.A. and other international organisations, to lay down in advance their respective responsibilities and, indeed, to entrust the decisive role to one of them. The Fourteenth Session adopted a recommendation in this sense as proposed by the Executive Committee of C.S.A.

The problem of C.C.T.A./C.S.A. representation at meetings of interest to Africa organised by other international organisations is becoming increasingly difficult. The technical officers of the Commission are very few in number; that is one of its basic features. There are, however, cases where the Commission ought to be represented as such at a meeting sponsored by another international organisation—as, for instance, in the case of the E.C.A. Conference of Statisticians which is discussed later on. This raises a problem of finance which is to be considered by governments; but there is also the question of the choice of representatives, and the Secretary-General would like sometimes to be able to call on a Member or Associate Member of C.S.A. He will refer the question to the Tenth Meeting.

### Publicity

Considerable efforts have been directed by Member Governments and the staff of C.C.T.A. towards securing wider publicity for the activities of the Commission and the Council. Tours of Africa by C.C.T.A. staff have had favourable repercussions and Recommendation IX adopted by the Ninth Meeting, aiming at achieving closer relations between the Secretariat and the technical services of the various territories, has been widely implemented. Several news agencies now regularly publish news items concerning the Commission. Papers in British East Africa, the Federation of Rhodesia, Ghana, the Union of South Africa and the United Kingdom have printed supplements on the work of the Commission or the Council. Outside Africa the Commission is becoming better known, if the number of letters received by the Secretariat and the various Bureaux is any indication.

The Fourteenth Session stressed the problem and called on Member Governments to increase their efforts, especially in those regions of Africa where political evolution is taking place most rapidly. It also requested the C.C.T.A./C.S.A. Secretariat to prepare a small booklet on the Commission's activities.



## V.—WORKING METHODS AND ADMINISTRATION OF THE COMMISSION

### Working Methods

This year the Commission's attention has been drawn to the need for defining the organisation and operating methods of the C.C.T.A. Panels of Correspondents.

One of the Commission's functions is to facilitate regular exchanges of information between technicians and specialists in the same branch of science. Meetings of these specialised persons are of value; to maintain contacts between them subsequently is no less valuable. To this end, the Commission has systematically extended the so-called "panel of correspondents" procedure. When the Commission decides on the creation of a Panel of this kind for a given specialist branch, each government is asked to nominate one or more Correspondents, who are then empowered to correspond directly with each other as well as with C.C.T.A.

The Fourteenth Session gave certain directives, drawing attention in particular to the fact that those appointed as Correspondents should be suitably qualified persons with sufficient time to play a full part in technical exchanges. It also decided that each Panel should have a "Co-ordinator" appointed from among its members, to be known in future by that name. It also laid down that, where none of the permanent Bureaux of C.C.T.A. can assume the functions of Secretariat and where no other possibility exists for financing the costs of a Panel secretariat, these could be charged to the budget of the Commission.

A note will shortly be circulated on the functions of the Correspondents, which are of two kinds. On the one hand the Correspondent sees to the external communication of technical information assembled within the country for which he is accredited; he must therefore keep informed of developments in that country, maintain contact with the departments, institutions and research workers for the discipline concerned, and be ready to pass on any proposal or suggestion from these quarters. On the other hand, the Correspondent ensures the distribution within his country of information and proposals reaching him from outside either through his Panel or by way of the C.C.T.A./C.S.A. Secretariat.

As to the Co-ordinator, he initiates and provides a stimulus for the Panel's activity, asks its members for the necessary information and where applicable for essential reports (care is called for on this point, to avoid overburdening African technical departments). He is consulted by the C.C.T.A./C.S.A. Secretariat or its Bureaux on all matters touching his field. Finally, within the limits of general policy laid down by the Governments and under the responsibility and control of the Secretary-General, he maintains technical contact with the other international organisations. His is an

essential role; the work and success of the Panel largely depend on him, and the greatest care should accordingly be exercised in appointing him.

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Three new ideas, of varying importance, call for separate mention:

The Commission decided to reorganise its annual Session so as to relieve the plenary sessions of administrative problems, which will be dealt with elsewhere.

The Commission approved the proposal made by the Secretary-General, for the attachment of personnel on short-term secondment from the countries of Africa, to participate in the work of the Secretariat at headquarters and at conferences. They would acquire useful experience and, on their return home, would afford the Secretariat a valuable means of personal contact. It is to be hoped that this initiative will be given speedy effect; the Secretariat will take the matter up with governments following establishment at the Lagos headquarters. There is no reason why a similar procedure should not be introduced in certain of the Commission's permanent Bureaux.

The proposal is made three times in the Report, to hold meetings of directors of research institutes devoted to a given discipline (agriculture, sea fisheries, building). The purpose of such meetings is to compare structures, permit of better co-ordination of research and even to consider the possibility of joint operations. The Secretary-General considers this proposal extremely valuable and hopes to discuss it more fully with governments; but before doing so he would like to have the Council's views.

### **Administration**

Several senior appointments have been made to the C.C.T.A./C.S.A. staff. The Council will be especially pleased to note that Dr. Verdier, formerly Professor of Chemistry in the University of Natal, has taken up his duties as Assistant Scientific Secretary at Bukavu; during the first six months of his appointment, Dr. Verdier was introduced to the Commission at the Monrovia Session, and he represented the Secretary-General at a number of C.C.T.A./C.S.A. meetings; he has taken a very active part in drawing up programmes. The Council will also be glad to learn of the appointment of a second Assistant Secretary-General in London, Mr. Hawkins, who comes to the Secretariat from the Ministry of External Affairs of the Federation of Rhodesia and Nyasaland; his wide experience of working with the Commission on behalf of the Rhodesian Government for seven years will be of great value. Other appointments are noted in the relevant chapters: Dr. Fournier, Director of B.I.S.; Mr. de Lusignan, Assistant Director of I.L.I.; Mr. Paton, Assistant Director of S.P.I.

Lastly, there is the establishment at Lagos, as from May 1959, of an advance office of the Commission under the direction of the Secretary-General. This office is more particularly concerned with preparations for the permanent establishment of the headquarters, to be transferred from London in the spring of 1960. Extensive facilities afforded by the Nigerian Government promise favourable conditions for the transfer.

### Publications

The Secretary-General reported to the Ninth Meeting of the Council on the problem of publications as a whole and the Council approved the policy adopted. There would, therefore, seem to be no major problems to refer to the Council. Members of C.S.A. will find in Appendix IV the list of publications issued since 1958 or in preparation.

The Scientific Secretary will report on the development of the Bulletin *Science-Afrique*, which is in increasing demand. It is now known in Africa and outside Africa. Items in each number vary from seventy to eighty-five, and the Secretary-General would like to thank those whose communications contribute to the interest of the Bulletin.

Lastly, the Council will be pleased to know that the English edition of Dr. Worthington's book, *Science in the Development of Africa*, which was the subject of Joint Project No. 2, came out early in August 1958. 250 copies were sent to governments and more than 800 have been sold to the public. The French edition, *Connaissance scientifique de l'Afrique*, will appear in the course of the summer of 1959. Comment in the specialist press has been enthusiastic.

## **PART TWO—NATURAL RESOURCES**

### **I.—ORGANISATION OF AGRICULTURAL RESEARCH**

In the course of their travels in Africa, several Members of the Scientific Council have been struck by the diversity of the solutions adopted for the organisation of research, and more especially agricultural research, in all its forms. They have also observed the great desire of new countries to study the various possibilities very closely before deciding on the type of organisation to adopt. Finally, they have noted the increasing difficulty in co-ordinating research projects, owing to the speed of developments in Africa.

The Scientific Council at its Ninth Meeting recommended an examination of the various aspects of the subject (Recommendation XXXIII). The Fourteenth Session of the Commission approved that recommendation and decided that a Symposium should be held to examine problems of research: structure of research organisations, relations with administrative authorities, with technical departments, the universities and other higher education establishments, recruitment of research workers, extension work in rural areas in respect of results achieved, etc. F.A.O. for its part has expressed a wish to be associated with the Symposium, the aim of which will not be to seek an ideal form, applicable to every case, but to put the various possible solutions before those responsible for research in Africa. The Symposium will be directed to the competent authorities, experts, administrators and political leaders rather than research workers and specialists engaged in scientific work.

The Scientific Secretariat has already started to assemble information. Replies to a questionnaire have been received from the Belgian Congo, Northern Rhodesia, Nyasaland and the Federation, France, Senegal and the former French Equatorial Africa, Ghana, Nigeria, the East Africa High Commission, Uganda and Mauritius. It is hoped that the other countries will also furnish information and those taking part in the Symposium can already be promised documentation on a very large scale.

The Secretariat has been asked by the Commission for definite proposals for the Symposium. It intends to propose that it should be held during the summer of 1960, probably in the Belgian Congo. Before forwarding its suggestions, the Secretariat would like to have the guidance of C.S.A. as regards topics to be discussed, organisation of the discussions, agenda, invitations, chairmanship.

### **II.—PROTECTION OF NATURE**

Following on Recommendation XVI of the Ninth Meeting of C.S.A., there was a lengthy discussion at the Fourteenth Session of the problems raised by the destruction of natural resources in Africa. The appeal voiced

by C.S.A. Members was reinforced by the fact that other national and international bodies are doing their utmost to point out the grave danger threatening the patrimony of Africa (Professor Monod will doubtless communicate to the Council the text of the resolutions on the subject adopted by the Committee for the Protection of Nature in West Africa in March 1959).

The Commission was not, however, prepared to go so far as the Council proposed. It emphasised the advisory character of the nature conservation committees set up in each country and restricted the field of application to questions concerning flora and fauna; and it ruled out for the present the idea of a Charter for the protection of natural resources. However, the Commission's recommendation as it stands does permit of fruitful action:

“The Commission notes that several Inter-African meetings, and in particular the Pointe-Noire Forestry Conference, have expressed deep concern at the increasing rate at which natural assets are being threatened in Africa by indiscriminate exploitation and unnecessary destruction.

“It welcomes the fact that the Scientific Council has studied the question from a general point of view, and has raised the problem of nature conservation to its rightful place in the general framework of a rational utilisation of natural resources. It approves the general conclusions contained in Recommendation XVI of the Ninth Meeting of the Council.

“As regards the practical measures proposed by the Scientific Council, the Commission recommends:

- (a) that Committees for the conservation of nature should be established in those countries in Africa where they do not yet exist. These bodies will be of an advisory character and deal essentially with questions relating to flora and fauna. They will enable Member Governments and other responsible authorities in Africa to be better informed of the various aspects of the problem;
- (b) that an Inter-African Scientific Correspondent shall be appointed to ensure liaison among the Committees and international bodies; C.S.A. should submit a proposal for the appointment of the Inter-African Scientific Correspondent at its Tenth Meeting;
- (c) that close contact should be maintained with international organisations, and in particular with the International Union for the Protection of Nature and Natural Resources and with F.A.O. The Commission welcomes the latter organisation's suggestion to place at the disposal of C.C.T.A., for distribution to the national bodies, detailed information on the situation in other continents and on the extent of destruction in other parts of the world”.

C.S.A. will be called upon at its Tenth Meeting to nominate an Inter-African Scientific Correspondent. It might be as well if those Members especially competent in this question would forward some details in advance

concerning the expert they may have in mind. The Scientific Secretariat will in a few months' time ask Member Governments for information on the Nature Conservation Committees. Lastly, close co-operation will be maintained with the other international organisations in this field. F.A.O. has signified its great interest in the recommendation adopted by C.S.A. at Accra, as has also the Natural Sciences Division of U.N.E.S.C.O.

### III.—CLIMATOLOGY

As the Inter-African Correspondent for Climatology reported to C.S.A., the preparation of the Climatology Atlas has taken longer than expected. In view of the interest displayed in various circles and, in particular, by the World Meteorological Organisation (W.M.O.), Professor Jackson has decided to be very strict in the adoption of standards. He has taken all necessary precautions and sought the advice of the Maps and Surveys Departments in the countries concerned. He has examined comments and criticisms with the assistance of experts of the Trigonometric Survey in Pretoria; final drawings have been revised whenever possible.

The project has now reached its final phase. The first six sheets have been printed. A Working Group, meeting in London in May, approved the practical arrangements for proceeding to the sale and distribution of the binding and the sheets as and when ready. The main burden again falls on Professor Jackson, the Government of the Union of South Africa and the Witwatersrand University (which has undertaken the work of distribution).

Thus a major project of the Commission is nearing completion. There is no need to dwell on the favourable comment from all quarters, even those—like the Nairobi Housing Conference—somewhat remote from the problems of climatology. The achievement is a matter for congratulation, demonstrating as it does the manifest advantages of the Joint Project approach.

### IV.—HYDROLOGY

“The economic development and welfare of the population depends to a great extent upon the rational use of water resources, which calls for close co-operation in all aspects of hydrology.” The text of the conclusion adopted by the Meeting of Specialists at Bukavu sums up very accurately the work done by the Commission and the Council in the field of hydrology.

As far back as 1949, the Johannesburg Scientific Conference had declared that the problem of water, in all aspects, was one of the most important in Africa. This is recognised by all responsible persons in the continent. It is a particularly urgent problem in certain parts of Africa South of the Sahara, such as the Sudan and the Sahelian area.

### Meeting of Specialists on Physical Hydrology

The Scientific Secretary reported to the Ninth Meeting of the Council on the Meeting of Specialists on Physical Hydrology (Bukavu, July 1958), which therefore only needs recalling in broad outline:

Leaving aside the first item of the Agenda, dealing with the geographical study of hydrographic basins (the discussion of which was deferred until the Second Meeting of Specialists in hydrology), discussions were grouped under three headings: measurement problems, research matters, measures to be taken to promote inter-African co-operation.

The first two headings gave rise to discussions which were notable for their highly technical and, at the same time, essentially practical nature. Detailed discussions took place on the various types of apparatus used for the measurement of hydrological factors affecting the natural water-cycle: rainfall (rain gauges), evapo-transpiration (evaporimeters and lightmeters), the flow of rivers and flood levels (limnimetrical gauges). Recommendations were adopted on two aspects, in particular: the standardisation of equipment and the construction of apparatus suited to African conditions. Several recommendations, intended for the attention of W.M.O., whose technical assistance will be of the greatest value, were also adopted. It is expected that more information on the problems of measurement in the field of hydrology will be presented at the 1961 Inter-African Conference. The Commission's Publication No. 33 deals with the work of the meeting.

In accordance with Recommendation XXII of the Ninth Meeting of C.S.A., the Commission decided to set up a Panel of Correspondents and appointed Mr. Rodier, Head of the Hydrology Department of O.R.S.T.O.M., as Co-ordinator. One of the new Co-ordinator's tasks will be to draw up, with the help of his Panel, a detailed list of organisations concerned with hydrology.

### Second Meeting of Specialists

Preparations are going ahead, as broadly laid down at Accra, for the Second Meeting of Specialists, under the direction of Dr. Russell, chairman designate of the meeting. It is to be held at Yaoundé, Cameroun, at the end of November 1959. F.A.O. has announced its intention of being represented by its hydrologist from Tanganyika.

The final Agenda has been drawn up by Dr. Russell, following the Conference of Hydrologists of East Africa held at Entebbe at the end of August 1958, to cover:

- (1) Effects of land use on the hydrological regimes of catchment areas (research and analysis of data for small experimental catchments and for large hydrological basins; effect on hydrological regimes of changes in land use; direct measurement of infiltration and percolation).
- (2) Investigation and exploitation of ground water (methods for

locating ground water; occurrence and movement of ground water in relation to its exploitation; conservation and control of ground water).

(3) Collection of data for sediment load of rivers (techniques for sampling bed load and suspended load; validity of methods employed; estimation of rates of siltation of storage reservoirs).

### **Inter-African Conference on Hydrology**

The purpose of the Second Meeting of Specialists on Hydrology is more especially to complete the information already assembled at the Bukavu meeting, thus enabling the Commission to proceed with preparations for the Inter-African Conference. This, it will be recalled, is due to be held in Nairobi in the second half of January 1961. A preparatory meeting of experts in London, right at the beginning of 1960, will draft the agenda and make preliminary arrangements. It has been considered desirable not to hold the preparatory meeting of experts at Yaoundé at the same time as the Meeting of Specialists, so as to avoid the risk of the Inter-African Conference being simply an extension of the Yaoundé meeting. Thus it is hoped that the Conference will cover hydrological problems as a whole.

It is to include specialists in all the branches concerned: hydrology, agriculture, silviculture, geology, possibly even navigation, industry, etc. In the meantime, a first indication of the probable agenda has been given by the Bukavu Meeting of Specialists, which suggested several sections to cover hydrology, meteorology, surface waters (infiltration and run-off, soil moisture, streams and rivers, lakes and swamps) and geo-hydrology (underground water, geological and geophysical prospecting). The C.S.A. Meeting at Kampala will, no doubt, wish to issue directives on the matter.

The interest aroused by C.C.T.A./C.S.A. activities in matters of hydrology is continuously on the increase, as is evidenced by the numerous enquiries received by the Secretariat, in particular from Nigeria, the Sudan and Ethiopia. It is already clear that the Inter-African Conference on Hydrology will be one of the most important events in the C.C.T.A. programme.

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The Fourteenth Session of the Commission likewise suggested that C.S.A. should devote one of its specialist meetings to problems of water treatment. This question is dealt with later in the chapter on technological activities.

## **V.—GEOLOGY AND GEOPHYSICS**

### **Geology**

The digests of geological publications dealing with Africa South of the Sahara have continued to be issued in both languages in the form of two-monthly mimeographed bulletins. Circulation has been extended in line



with general C.C.T.A. policy. Publications dealing with the Second Meeting of the West Central Regional Committee (Accra, 1957) and the Joint Meeting of the East Central and Southern Committees, held at Tananarive in April 1957, have been distributed. The publication devoted to the Joint Meeting of the three Regional Committees at Leopoldville in July 1958 is almost ready, as also the bibliography of published material on the Jurassic and Cretaceous systems.

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On the proposal of the Belgian authorities, the three Regional Committees met at Leopoldville from 14th to 16th July 1958. Fifteen Member territories were represented. The meeting was followed by a six days' visit to parts of Lower Congo. This was the first time that a Joint Meeting of the three Committees had been held. It was of particular value owing to the presence of a large number of geologists who had been delegates at the Meeting of the Association of African Geological Surveys, held a few days previously. The technical problems on the agenda were thus discussed by more than eighty specialists, including about twenty representatives of mining and oil companies.

Some of the technical discussions covered stratigraphic nomenclatures, basic geological surveys, copper deposits, charnockites, carbonatites, pre-Cambrian nomenclatures, etc. Two points are of special interest:

(a) The increasingly close relationship between the Association of African Geological Surveys and C.C.T.A. Point 9 of the Leopoldville meeting's conclusions proposed a division of spheres of activity, which was approved by the Fourteenth Session, by which C.C.T.A. would concern itself with regional geology, pure and applied, and with activities of a regional character, while the Association would devote its attention to general syntheses and basic documentation, and would deal with regional matters only in those parts of Africa outside the area covered by C.C.T.A. The President and the Secretary-General of the Association and the Inter-African Scientific Correspondent of the Commission would keep in constant touch. This division corresponds to the situation which has, in fact, gradually developed and thus appears to be the right and logical solution (as indicated by Recommendation XVII of the Ninth Meeting of C.S.A.).

(b) Dr. D. Clark, an Associate Member of C.S.A., had submitted a memorandum proposing the setting up of a panel of experts, with a view to establishing quaternary archeological and geological correlations. This memorandum was closely studied at Leopoldville by a sub-committee of thirteen geologists, who expressed their interest in the suggestion. Their conclusions were not, however, in complete conformity with Dr. Clark's proposals. They considered it premature to set up a panel of

experts and thought it better to wait until a greater number of more accurate regional surveys, providing sufficient information on quaternary deposits, was available to enable proper inter-territorial correlations to be made between experts (Resolution II of the Leopoldville Meeting).

A general conclusion to be drawn from the Joint Meeting is that such events should be exceptions rather than the rule. The purpose of the Regional Committees is to study problems from a regional angle. Large gatherings of geologists from all parts of Africa are not entirely suited to this purpose and are better held within the framework of activities of the Association of African Geological Surveys. The Commission gave unequivocal expression to this view.

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### Geophysics

At its Eighth Meeting the Council appointed Inter-African Scientific Correspondents for Seismology (Dr. Hales, Johannesburg), Geomagnetism (Dr. Herrinck, Leopoldville), and Oceanography (Dr. Anderson, Cape Town). Since then, Professor J. P. Andrews has been replaced by Dr. D. M. Tompson, of the Cosmic Ray Observatory, Makerere College, Kampala. As regards the Correspondent for Ionospherics, there appears to be some difficulty in appointing a scientist attached to O.R.S.T.O.M. On the other hand, it has been suggested that Dr. Herrinck, of the Bureau de Géophysique de l'Institut Météorologique, Leopoldville, should be asked to take over these duties; there are four observation stations in operation in the Belgian Congo, of which three have an ionospheric forecasting section. Dr. Herrinck edits the distinguished scientific review *Ionosphere*.

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After Dr. Naudé, a Member of C.S.A., had reported on the International Geophysical Year and its extension, the Council decided at its Accra meeting to defer the Second Meeting of Specialists, to be held jointly with the Scientific Committee for the International Geophysical Year (C.S.A.G.I.). It will be for the Tenth Meeting of the Council to pronounce on this point.

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Finally, information will be transmitted to the Council by the Scientific Secretariat on progress on the magnetic map of Africa to be drawn up by Inspecteur-Général Delienne, of Paris.

## VI.—PEDOLOGY, SOIL CONSERVATION AND UTILISATION

### Inter-African Pedological Service (S.P.I.)—Pedological Map of Africa

The Service should be fully staffed by the autumn of 1959, with the appointment of an Assistant Director as decided in 1958 and recommended on several occasions by the Council. The British Government has put forward a highly qualified candidate, Mr. Paton. On completion of advanced university studies, specialising in geology, Mr. Paton spent six years in Borneo where he carried out large-scale analytical work on soil classification.

Within the limits as laid down by the Thirteenth Session of the Commission (see Report to the Ninth Meeting of C.S.A.), S.P.I. has undertaken a great many activities during the year under review. On his return from Paris, Dr. d'Hoore spent a few days in Togo to investigate the request for technical assistance made on behalf of that country by France. Separate reports have been made on his missions, which properly form part of the Director's activities and should be encouraged.

S.P.I. devoted the major part of its time to soil mapping and classification. In accordance with the recommendations of the Council of Management, the S.P.I. programme on soil classification included the following points:

- to complete documentation on classification systems and cartographic methods already in use in Africa South of the Sahara;
- to promote exchanges of view at regional level in collaboration with the sub-committees established by the various Regional Committees for Soil Conservation and Utilisation;
- to establish the basis of an agreement on nomenclature which could be submitted to a meeting of specialists.

Additional information has been obtained on classification systems and cartographic methods, by means of a questionnaire sent to all regular correspondents; thirty-three replies have been received. The Service has also received many publications, maps and reports, most of them dealing with tropical African soils, but some also from tropical America and from Indonesia.

C.S.A. has already been informed by Professor Aubert, Member of the Council, of the exchange of views which took place at the Fourth Meeting of C.R.A.C.C.U.S. at Yaoundé in January 1958 and the meeting of the C.R.A.C.C.U.S. Sub-Committee of Pedologists at Brazzaville in June 1958. Standardisation of the criteria and terminology of classifications is progressing; while considerable differences still exist as between the Congolese and French classifications, it can nevertheless be stated that each individual unit in one classification has its equivalent in the other; advances worthy of note have been made in this respect as regards soils of almost exclusively tropical nature; comparison of the draft pedological sketches of the adjacent areas of

the former French Equatorial Africa and the Belgian Congo has proved particularly interesting.

Sub-committees have held similar exchanges of views for South Africa (Pretoria May 1959) and East Africa (at the Meeting of British East African Pedologists, to which Dr. Russell invited pedologists from neighbouring countries and Dr. d'Hoore).

No progress has been made in West Africa, however, which is unfortunate since it is in this part of Africa that the most serious gaps appear to exist; the only pedological maps of this region available to S.P.I. are those of Ghana, Liberia and Nigeria. It is to be hoped that the C.R.O.A.C.C.U.S. meeting at Dalaba in November 1959 will provide an occasion for the convening of a sub-committee of pedologists; but the fact cannot be ignored that this part of the sub-continent is behindhand.

The method selected by the Council and the Commission, consisting of aiming at regional agreements before starting on the next stage, namely standardisation as between the regions of Africa, thus seems to be bearing fruit. It is, of course, too soon to make any forecast regarding the over-all map. Following on useful meetings of C.R.A.C.C.U.S. and its sub-committee, Dr. d'Hoore prepared a first sketch to a scale of 1/5,000,000 on which he has entered the data available to him. The central region—Cameroun, former French Equatorial Africa, and Belgian Congo—is well covered; in the east it covers Ruanda-Urundi, Uganda and Tanganyika, as well as part of Kenya and of the Sudan; in the south, the Federation of Rhodesia and Nyasaland, Mozambique and Swaziland, as also the northern part of the Union of South Africa and the northern and eastern parts of Angola; and lastly, in the west, Ghana, Liberia and part of Nigeria. It is only a first draft, of course, but it does clearly indicate the gaps and inaccuracies for certain regions.

Dr. d'Hoore intends to revise this first sketch and submit a second draft to the Soils Conference at Dalaba. It will be remembered that the first part of this meeting is to be devoted to discussion of problems of soil analysis and classification.

As regards methods of soil analysis, Dr. d'Hoore has continued to assemble documentation and has published a number of articles. He has likewise maintained close contact with specialists carrying out basic research on the genesis and pedogenetic characterisation of African soils.

Several pedological meetings, culminating in the Dalaba Conference, will combine to make 1959 an important milestone in the Commission's work in the field of pedology. The growing interest of African countries in that work is exemplified by the fact that, on a recent visit to the Ivory Coast, the Secretary-General learned that the new Government ranked pedological research as one of its foremost concerns. There is also much interest on the part of the world organisations in the Commission's work; Professor Aubert will be able to report to the Council on the comments of U.N.E.S.C.O.;

the Secretary-General has been informed of F.O.A.'s interest in the course of his conversations with leading officials of that Organisation, and in particular with the Director of the new African Regional Office, Mr. Terver, who hopes to have as an assistant an eminent pedologist who would be able to co-operate closely with S.P.I.

### **Inter-African Soils Bureau (B.I.S.)**

Thorough discussion by C.S.A. at Accra on the functions and organisation of B.I.S. led to the tabling of definite proposals (Recommendation XXVI of the Ninth Meeting). The Commission endorsed the Council's recommendation:

“The Commission APPROVES the conclusions reached by the Scientific Council at its Ninth Meeting in respect of the functions of B.I.S. (Recommendation XXVI); in particular, it ENDORSES the views of the Council that, in the future, the activities of B.I.S. should be directed more towards liaison between technical organisations working in Africa, and that it should play a more dynamic part. It FEELS that it is important to re-define the functions of the Bureau, at a time when a new Director will be taking over and when an expert is to be appointed as Assistant Director. The Commission therefore RECOMMENDS:

- (a) that the senior staff of B.I.S. should establish close and direct contact with all departments, organisations and individuals concerned with the conservation and utilisation of African soils;
- (b) that B.I.S. should regularly publish its journal *African Soils*, maintain its high quality, and publish frequent reports on the most important work in progress in Africa in the field of soil conservation and utilisation and related fields;
- (c) that B.I.S. should maintain its documentation and distribution service and extend it to subjects specially relating to soil conservation and utilisation;
- (d) that B.I.S. should maintain its translation service of scientific documents for the benefit of specialists working in Africa;
- (e) that B.I.S. should maintain close liaison with F.A.O. and soil conservation bureaux and organisations outside the geographical area of the Commission, in accordance with the general instructions given by Member Governments to the Secretary-General of C.C.T.A./C.S.A.”

The Member Governments have meanwhile approved the appointment of Dr. Fournier to replace Mr. Guilloteau as head of B.I.S. Dr. Fournier is a highly-qualified young pedologist seconded from O.R.S.T.O.M. He has published a number of papers on erosion problems and is a member of several international associations (Soils Sciences, Geological Association, etc.).

On the other hand, there has been some disappointment as regards an

Assistant Director. An appointment was to have been made at the beginning of the year, if possible, of an English-speaking agronomist whose experience would be complementary to Dr. Fournier's. Several candidates suggested have declined. It is regrettable that no nomination has been made at the time of writing this Report.

Once this obstacle has been surmounted, the Bureau can assume its full importance in accordance with the recommendation of the Fourteenth Session. The B.I.S. Council of Management held its Eleventh Meeting in Paris in April, following the Monrovia Session, in order to work out details of the latter's directives. Various administrative changes were recommended with a view to improving the documentation and distribution services. In view of the extensive work involved in the reorganisation of the Bureau, the Chairman of the Council of Management, Mr. Ferreira da Silva, agreed to undertake a short-term mission with B.I.S. to guide the Director and relieve him of the multifarious tasks arising on the eve of the Soils Conference.

As regards the technical aspects of the Session's recommendation,

(a) it was provided that the Director should undertake a journey in Africa each year; the 1959 one will be to Ghana, Ivory Coast, Guinea and Senegal, the 1960 one will be devoted to East, Central and South Africa; the liaison functions devolving on the Bureau can thus be fulfilled; the Council recommended, however, that the transition from the function of the B.I.S. as a documentation centre to that of a liaison body should be brought about very gradually;

(b) the Council asked Dr. Fournier to make the necessary arrangements for the review *African Soils* to appear regularly three times a year;

(c) the documentation service will be maintained and enlarged (B.I.S. at present has an index of 140,000 cards; its correspondents at end 1958 numbered 680 and the number of bibliographical cards distributed amounted to about 10,000 annually); B.I.S. will be expected to publish ten bibliographical bulletins a year;

(d) Dr. Fournier has been appointed as the C.C.T.A./C.S.A. Secretariat's liaison officer with U.N.E.S.C.O. Natural Sciences Division; he will go to Rome in November for the F.A.O. Conference; these two facts illustrate the importance attached to liaison with the other international organisations. It should also be recalled that Mr. Guilloteau was general rapporteur of the Congress of the International Union for Nature Conservation at Athens in September 1958.

Professor Lebrun and Professor Aubert, who are members of the Council of Management of B.I.S., may perhaps care to furnish additional information on the decisions referred to above, in the elaboration of which they played a big part, but in the meantime the adoption of these decisions is a matter for satisfaction. One year after S.P.I., B.I.S. now has a clear

directive adapted to present circumstances and revised after being in operation for a number of years. Other questions await settlement, and in particular the eventual transfer to Africa of the Bureau. It is true that it has not been possible to amalgamate S.P.I. and B.I.S. as had been hoped in certain quarters and that there are problems of co-ordination. But B.I.S. is already in a position to resume its work, the new Director has entered on his duties with competence and enthusiasm, and there are grounds for optimism regarding the work that will be accomplished. This is particularly important at present in view of developments in West Africa and of the increasing attention being given to problems of soil conservation.

### **Regional Committees for Conservation and Utilisation of the Soil**

There is no need once more to stress the usefulness and originality of the Commission's regional activities in the field of soils; specialists enough bear witness to the facts. The interest shown by F.A.O. in this aspect of C.C.T.A.'s work is another token of this.

As in previous years it is S.A.R.C.C.U.S. (South) which has been the most active of the Regional Committees. It held a sub-committee of pedologists at Pretoria from 30th April to 6th May (see above). The Seventh Meeting of S.A.R.C.C.U.S. will take place at the beginning of 1960, probably in Nyasaland.

C.R.A.C.C.U.S. (Central) held its Fourth Meeting in January 1958 at Yaoundé. This has already been reported on; and as regards the sub-committee of pedologists set up at that time, the encouraging results of its work are mentioned above.

C.R.O.A.C.C.U.S. (West) has not emerged from its inactivity; it has even lost its Secretary, who has left Dakar and has not yet been officially replaced. The Fourteenth Session decided, however, that it should hold its Third Meeting at Dalaba on the occasion of the Soils Conference. This is a good thing, for never has the maintenance and re-establishment of liaison between the agricultural services in West Africa been of greater importance.

E.A.R.C.C.U.S. (East) for its part has resumed its noteworthy activity. While questions of soils classification were referred to a separate meeting of pedologists at Kampala, the Committee held its Third Meeting at Usumbura and Astrida (Ruanda-Urundi) from 11th to 16th May 1959. Some thirty delegates attended from all the Member territories and Madagascar. The Vice-Governor-General, Monsieur J. P. Harroy, who has always shown a keen interest in the work of C.C.T.A./C.S.A., made a notable speech on the problems of co-operation in this field, of which he has expert knowledge. The two Bwami of Ruanda and Urundi were present at the discussions. The Scientific Secretary attended the meeting and will be able to report on it to the Council. It dealt with the utilisation of water in agricultural development. Recommendations were adopted to promote conservancy measures on

catchment basins, to encourage the measurement of water distribution, to set up in each country a central body responsible for the collecting and analysing of hydrological data, and finally to continue the work done with a view to the judicious utilisation of water supplies.

The Belgian Government officially proposed that the Eighth Meeting of S.A.R.C.C.U.S., Fifth Meeting of C.R.A.C.C.U.S. and Fourth Meeting of E.A.R.C.C.U.S. should be held jointly at Leopoldville in 1961. The topic suggested for the meeting is "the study of regional plans for rural improvement with a view to the intensification of agriculture and the conservation of the soil". Separate meetings will also enable each of the committees to study its own problems. Finally, separate visits will be arranged for the three committees to Katanga, Lower Congo and Kivu respectively. There can be no doubt that such a meeting would be of great interest and no country is better placed for the study of such a topic than the Congo; it should also be recalled that the Congo belongs to the three Regional Committees. On the other hand, it may be remembered that the conclusions arising from the Joint Meeting of the three Regional Committees for Geology were unfavourable to this procedure; they were endorsed by the Commission, which recommends respect for the separate identity of the Regional Committees. It would appear desirable for C.S.A. to pronounce on this question from a scientific standpoint.

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At the last meeting of the Scientific Council, the problem of the area of jurisdiction of the Regional Committees was discussed. The present apportionment is based on administrative divisions, with the result that arid and semi-arid zones are particularly badly placed, their problems being less exhaustively studied than those of the humid zones. This is a general comment which also applies to forests and animal resources.

The Members of C.S.A. discussed the matter very fully but considered that, as things were, it would be undesirable to upset the existing subdivision. They recommended, however, that a meeting of specialists from semi-arid zones should be held in the near future (Recommendation XXIV, (e)). That meeting took place on the occasion of a meeting in East Africa called by the British authorities; Dr. Russell will report to the Council on it. It does not appear to have reached any definite conclusions on the problem, which still remains. The Fourteenth Session recommended that the Inter-African Soils Conference should examine the desirability of holding periodical meetings of experts from the semi-arid regions. As a guide to the discussion, it would be most advantageous if the Tenth Meeting of the Council gave its scientific views, in accordance with the wish expressed in the recommendation quoted above.



### Third Inter-African Soils Conference

The Third Inter-African Conference will take place from 2nd to 12th November 1959 at Dalaba, Guinea. The gathering will be of particular importance for the Commission. It will enable it to review eight years of co-operation and to lay down the broad lines of future policy in this field. Its aim will, however, in the main be scientific. The Preliminary Meeting of Experts, held in Paris on 29th and 30th September, drew up an agenda, divided into three headings:

Study and Classification of Soils.

Conservation of Soils (including methods of publicity and teaching).

Utilisation of Soils.

Consideration of these items on the basis of reports submitted by the Directors of B.I.S. and S.P.I., and by the Secretaries of the Regional Committees on the work of the C.C.T.A. bodies, will be preceded by a general discussion. Dr. d'Hoore, the Director of S.P.I., and Dr. Russell were appointed as general rapporteurs for the first item, the former in respect of regional studies and soils classification; the latter in respect of special problems (evolution of organic matter, nitrogen cycle, physical properties of soils and water distribution). Dr. Fournier, Director of B.I.S., and Mr. Pepler, of Pretoria, were appointed as general rapporteurs for item two, respectively for work on the measurement of erosion and run-off, the effect of agricultural practices on erosion, the relationship between soil conservation and water distribution; and for publicity and teaching methods in respect of conservation. Lastly, Dr. Saunder, of Salisbury, and Sr. Godinho da Goveia, of Lourenço Marques, will be rapporteurs for item three, respectively for maintenance of productivity and the effect of rotations and for problems of utilisation in arid and semi-arid regions.

The Conference will also include excursions in the field. About a hundred delegates are expected to attend from the Member countries of the Commission, from certain non-member countries and from several international organisations (U.N.E.S.C.O. will be represented by the Director of the Natural Sciences Division, F.A.O. by two experts on African soils). All those who, within the Commission, are in any way responsible for the organisation of co-operation will be present (Directors of the two Bureaux, Secretaries of the Regional Committees, C.S.A. Members concerned).

Very comprehensive arrangements have been made by the Meeting of Experts, for the distribution of preliminary documents, for the preparation of preliminary synthesis reports by the rapporteurs already appointed, and for the organisation of the discussions.

### VII.—PHYTOGEOGRAPHY

Two events have been arranged for next autumn to precede the Third Inter-African Soils Conference.

(a) The U.N.E.S.C.O. Advisory Committee on Humid Zone Research will meet at Adiopodoumé (Ivory Coast) in October; this will be followed from 20th to 24th October by a C.C.T.A./U.N.E.S.C.O. Symposium on "Vegetation in Relation to the Soil". Preliminary arrangements have been made at a preparatory meeting at which C.C.T.A. was represented by Professor Aubert.

(b) Taking advantage of the presence of climatologists, botanists, ecologists, physiologists and soil physicists at the Symposium, and in accordance with C.S.A. recommendations (Recommendation XVIII (c) of the Eighth Meeting and Recommendation XXIX (b) of the Ninth), a short meeting (expected duration one day) will be held on 25th October under the Chairmanship of Professor J. Phillips.

One of the main aims of the meeting will be to make recommendations for the creation of a post of Scientific Correspondent for Botanical Geography in Africa. The appointment of an outstanding personality to this post is urgent in order to give the desired stimulus to the Panel of Correspondents set up to cover the field of chorology. The chief task of the Scientific Correspondent and the Panel will be to proceed with the Botanical Atlas of Africa.

As regards the comprehensive atlas of the principal types of vegetation, to be based on an essentially physionomic classification and the compilation of which has been entrusted to Professor Aubréville, there is nothing fresh to report. From the Report of the Inter-African Forestry Conference at Pointe-Noire it is clear that the Atlas is still at the planning stage. Professor Aubréville is in the first place collecting the basic material; he will then convene a working group, in agreement with the C.C.T.A./C.S.A. Secretariat, which will meet in Paris and will call in specialists established or temporarily residing in Europe. This working group will make a final choice of the documents assembled and determine definite standards of presentation. The Forestry Conference recommended that the compilation of the Atlas should be entrusted to the Centre Technique Forestier Tropical at Nogent-sur-Marne. The maximum delay for completion of the project was to be three years; the specialists concerned are requested to forward the relevant documentation to Professor Aubréville forthwith. In spite of previous requests, he has so far received nothing, so that it is impossible for him to proceed.

## VIII.—FORESTS

### Second Inter-African Forestry Conference

Professor Lebrun informed his colleagues at the Ninth Meeting at Accra of the salient features of the Conference, which took place at Pointe-Noire in July 1958. These are recalled briefly here:

More than fifty delegates and observers attended the Conference. F.A.O. sent an observer and an American Professor from Harvard was also

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present. Some 120 papers were submitted, comprising a documentation unique of its kind which constitutes one of the most valuable contributions of the Conference.

Subjects on the agenda included the implementation of the Recommendations of the First Inter-African Conference relating to natural stands, artificial silviculture, improvement of forestry policy and, finally, the establishment of permanent inter-African liaison. In addition, three committees dealt respectively with the nomenclature of African forest formations, open forests and forest fires.

The programme included three excursions in Middle Congo, enabling delegates to see for themselves various forestry methods in the shape of artificial stands in dense forest and savannah, and also eucalyptus plantations. After the Conference, some of the delegates joined in a long excursion in Gabon, visiting a peeling plant at Port Gentil and a large-scale experiment in okoumé planting near Libreville. Agreement was general on the success of the Conference and the value of the technical documentation has already been noted. The high qualifications of the delegations and the efficient organisation of the excursions enabled very valuable discussions to be held. In addition, the feeling of comradeship which unites forestry experts made itself felt in a particularly lively and outstanding manner.

Of the general recommendations, the most striking are those dealing with forestry conservation. The problem of nature preservation as a whole has already been dealt with in this Report. Mention should, however, be made of the firm way in which four of the recommendations stress the responsibilities of Member Governments as regards the future of African forests.

Several of the Conference's technical recommendations are of a particularly practical nature, dealing as they do with regeneration and enrichment techniques for natural stands, introduction of valuable exotic species, storage of seed, and fire protection. Industrial problems connected with forestry development were not forgotten: costs for various silvicultural methods, manufacture of wood pulp, production of special varieties suitable for peeling.

Mention should also be made of the recommendation in favour of the principle of regional planning to ensure a balanced exploitation of agricultural, pastoral and silvicultural resources within the context of the rational utilisation of the soil. Finally, C.S.A. will be interested in the recommendation of the Pointe-Noire Conference calling the attention of Member Governments to the need to provide the requisite training facilities for young African forestry staff to enable them to acquire the same knowledge and skill as Europeans. It will also note the two recommendations stressing the need for keeping local populations better informed of the economic value of forests and of the dangers of certain traditional practices, such as uncontrolled bush fires.

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F.A.O. has signified its interest in several of the recommendations. Its plans not yet having official status, they cannot be reviewed here. It does seem, however, that the new African Regional Office will be especially concerned with the sphere of forestry, which will be covered by one of Mr. Terver's assistant directors. A number of these activities will deal with the economic problems involved in the exploitation of forests and the utilisation of their products; F.A.O. can do useful work in this respect. Among draft projects connected with recommendations of the Pointe-Noire Conference, particular mention should be made of those for research on the utilisation of the soil in forest regions and for a training centre on the same subject, and also of numerous activities concerning the training of African forestry workers in various parts of Africa.

### **The Future of Inter-African Co-operation in the Field of Forestry**

Recommendation 10, 2, of the Forestry Conference proposed a scheme for the establishment of a permanent system of liaison: on the one hand, information of general interest could be exchanged among all foresters in Africa South of the Sahara; and on the other, specialised information on particular subjects could be circulated to the small groups of foresters concerned. The Fourteenth Session approved the formation of the proposed Panels of Correspondents, but it recommended that the number of these Panels should not be too great.

As regards the Secretariat for the Panel of Correspondents, discussions are to take place between the Director of the F.A.O. African Regional Office and the C.C.T.A./C.S.A. Secretary-General with a view to making the best use of the potentialities of the two organisations; two C.C.T.A. Member Governments have offered to provide the Secretariat if the Commission so desires.

Already, C.C.T.A.'s contacts with forestry circles in Africa have enabled the circulation of F.A.O. publications sent out by that Organisation on the basis of lists drawn up by the Secretariat in London.

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The first part of Recommendation 10 of the Pointe-Noire Conference deals with future inter-African meetings on forestry matters. Other conferences are to be held. The forestry circles concerned, however, feel that large-scale conferences should be held at fairly long intervals, so as to avoid too frequent interruption of work and heavy expenditure. They also recommend that, at future inter-African conferences, matters of general interest should be discussed at plenary sessions, while specialised subjects should be dealt with in committee by delegates from the same natural vegetation belts and concerned with the same types of forest. Finally, in view of the experience of F.A.O. and of the value of co-operation at world level, they expressed the

hope that future inter-African conferences might be organised by C.C.T.A. and F.A.O. jointly.

It is F.A.O.'s intention to set up in Africa, as in other continents, a Regional Forestry Commission whose plenary meetings—corresponding to our Inter-African Conferences—would be held at more frequent intervals than proposed by C.C.T.A./C.S.A.; the first meeting of the kind, which it would be desirable to merge and to combine with the Third C.C.T.A. Inter-African Conference, might be organised by F.A.O. in 1961 or 1962.

### Meeting of Specialists on Open Forests

At its Ninth Meeting the Scientific Council decided to convene a Specialist Meeting, under the Chairmanship of Professor Lebrun, on open forests in Tropical Africa (Miombo, forests composed of *Brachystegia*, *Isobrerlinia*, Mopane, *Lophira butyrospermum* and similar species) (Recommendation XXVIII).

This decision meets the desires of several delegates to the Pointe-Noire Conference. The area of open forests in Tropical Africa is well in excess of a million square miles. A vast belt of forests of this type extends across the territories of Rhodesia, Nyasaland, British East Africa, the Belgian Congo and Mozambique. Similar types of forests (though composed of different species) are to be found in the northern and north-western parts of Tropical Africa (Guinea, Sudanese Republic, the northern Ivory Coast and Northern Dahomey). The areas in question are generally rather dry and their human and animal populations comparatively small. Situated as they are at considerable distance from any market, their present economy is highly local in character: pit-props, production of bees-wax, etc. Their resources are little known and practically untapped.

The meeting will be held at Ndola in November 1959. The agenda will include the following items: definitions, geographic areas and floristic composition of open forests, fire protection, silvicultural principles applicable to their management, exploitation by use of natural varieties or introduction of exotic varieties or stands, promotion of research at inter-African level.

## IX.—PHYTOTECHNICS

Among practical activities, of immediate application, which the Commission is desirous of undertaking, special importance attaches to the study of the main crops of economic value for the countries of Tropical Africa. Discussion should not be limited to experience acquired in Africa. In the case of many crops it would be desirable to draw on the experience, successful and unsuccessful, of other continents. With this in mind, the Scientific Council recommended the holding of joint C.C.T.A./F.A.O. meetings on these crops (Recommendation XXX).

### (a) Grain Legumes

A technical F.A.O./C.C.T.A. Meeting on Grain Legumes held in Bukavu from 10th to 15th November 1958 was attended by some thirty nutrition experts and agronomists from six Member countries. F.A.O. was represented by three specialists, C.C.T.A. by its Inter-African Secretary for Nutrition, Dr. Latsky.

After the First Plenary Session, at which Dr. Platt delivered a statement on the importance of grain legumes in African nutrition and agriculture, two sections were set up. One, under the Chairmanship of Mr. A. Angladette, delegate of France, considered the production of legumes for human food or animal fodder; the other, under the Chairmanship of Dr. Platt, dealt with the food value of legumes for supplementing African diets, present consumption, and methods for increasing it.

The very heavy programme of the first section made a full exchange of views between agronomists and nutrition experts difficult; moreover, the almost total absence of specialists in the field of animal feeding resulted in a very superficial study of the question. The two sections, nevertheless, together drew up a list of edible species of grain legumes classified according to their value for human food, from the agronomic and agricultural standpoint. One of the plenary sessions was devoted to the study of methods for increasing the consumption, utilisation and production of grain legumes.

The majority of the recommendations are aimed at increased production and consumption of legumes, acting on the agronomic and consumption factors. One recommendation asks Member Governments to pursue and extend survey programmes for legumes of economic value which may exist among local flora. These plants would be submitted to scientific bodies for identification and would be preserved, on the one hand in the form of reference herbaria, and on the other hand in the form of live collections serving as propagation and selection stock. The publication of a world catalogue of species and "cultivates" is likewise recommended. As thorough discussion of the problems of plant production for animal feeding was not possible, the meeting recommended that the question should be considered at a further joint meeting of agronomists, agrostologists, zoo technicians, animal feeding experts and veterinarians. F.A.O. has informed the C.C.T.A./C.S.A. Secretariat that this meeting could take place in or after 1961. These various recommendations call for decision by C.S.A.

### (b) Cacao

The First Technical Meeting on Cacao, organised by F.A.O. with the co-operation of C.C.T.A., was held at Accra from 8th to 15th February 1959. This was a world meeting attended by eighty people. The discussions were of high technical quality, covering the various aspects of cocoa production.

F.A.O. already has a cocoa study group, but it is mainly concerned with economic questions. It was requested that a technical working party should

be set up. To promote the collection of genetic material on a larger scale in the regions of origin of the cacao tree, the organisation of small specialised expeditions was recommended. The maintenance and distribution of this material raises problems and the application of phytosanitary measures was recommended, also the creation of regional phytosanitary stations. The African station would be set up in Nigeria; the Inter-African Phytosanitary Commission has been asked for its views on this subject.

The establishment of a centre for basic research on *Phytophthora infestans*, the fungus most injurious to cacao cultivation, was called for. This centre should be located outside the cacao-producing regions and be modelled on the Institute for Research into Plant Blights operating in Portugal. Compilation of two publications was recommended, the one for use of scientists, the other for the use of growers. Should training centres be set up, it was specified that for the cacao-producing areas of Africa they should be organised in co-operation with C.C.T.A./F.A.M.A. Finally, the creation of a special Cocoa Fund was recommended with a view to implementing these various projects.

#### (c) Banana

The Ninth Meeting of the Council recommended that C.C.T.A. should hold a Symposium on the banana. The Fourteenth Session of the Commission approved that recommendation. The Council Members emphasised that banana production, already of considerable importance in part of the C.C.T.A. area (and which also concerns Somalia) is at present developing rapidly in Africa; they also noted that the falling off in Central American output might constitute a factor favourable to development in Africa.

The Symposium will take place under joint C.C.T.A./F.A.O. sponsorship at Abidjan in spring or autumn 1960. It will cover problems of production, transport and marketing, as also diseases of the banana tree. The Ivory Coast producers are displaying keen interest in the Symposium, of which they have great hopes. The comparison of their views with those of growers from other areas of Africa (in particular the British Cameroons) and of Central American experts should prove fruitful. The meeting will include at least three days of excursions to the banana plantations of the Ivory Coast.

#### (d) Other Crops

Among other points concerning phytotechnics which might figure in the joint C.C.T.A./F.A.O. programme, the Director of the F.A.O. Regional Office has suggested rice cultivation and the cultivation of secondary cereals (millet, sorghum). It will be recalled that there was some question of a world meeting on the coffee tree to be organised by F.A.O. in collaboration with C.C.T.A., probably in Ethiopia. And lastly, a suggestion was made for holding a meeting on fruits other than the banana, for instance citrus fruits.

**(e) Weed Control**

The Fourteenth Session endorsed the recommendation adopted by the Ninth Meeting of the Council and expressed itself in favour of the Commission interesting itself in weed control should an opportunity arise.

**(f) Medicinal Plants**

In the part devoted to botany it would appear useful to interpolate the following interesting suggestion made by the C.C.T.A./C.S.A. Scientific Secretary:

Africa possesses a very rich flora, yet very little has been done for the systematic study of the utilisation of this wealth from the medicinal standpoint. O.R.S.T.O.M. (France) has in its specialised agronomy department a section for aromatic medicinal plants, spices and perfumery plants. Similarly, I.N.E.A.C. (Belgium) has a section for miscellaneous economic plants. C.S.I.R. (South Africa) has just undertaken, with the help of an American pharmaceutical firm, the examination of several hundred plants to study their pharmacological effects and determine the presence of alkaloids; in addition, certain university laboratories in South Africa are conducting research into natural products extracted from local plants. A Symposium is to take place in 1960 in Australia. The Secretariat at Bukavu has received many requests from pharmaceutical circles. Further examples could be given, but the above suffice to indicate the interest of scientific quarters both from the pharmaceutical point of view and from that of the synthetic use of natural products. The moment, therefore, seems ripe for considering the opportuneness of concerted action.

The Council might in the first place consider convening a specialist meeting of chemists, botanists, pharmacists and possibly manufacturers. Such meeting should lead to definite conclusions on the sectors deserving of coverage. Should general documentation work appear necessary, this might be entrusted to one or two specialists and take the form of a "Joint Project"; consideration might even be given to associating private firms in the financing of the project.

(g) As indicated above, the Commission hope that F.A.M.A. will direct a sustained effort to the organising of training courses. Phytotechnics (and possibly phytopathology) might offer an interesting field in this respect.

**X.—PROTECTION OF AGRICULTURAL PRODUCTION****(a) Quelea**

After holding two Scientific Symposia in 1955 and 1957, C.C.T.A./C.S.A. is now directing its efforts to extending inter-territorial co-operation in control methods. The Thirteenth Session recommended the establishment of regional bodies for co-operation, but the results have been disappointing.



Nowhere has a flexible, swift and effective inter-territorial system been set up, enabling the essential information to be circulated in a minimum of time to allow of co-ordinated control operations.

At Monrovia, in February 1959, the Fourteenth Session recommended implementing a suggestion made by C.S.A. An inter-governmental symposium will be convened shortly (probably in the spring of 1960) for consideration of the desirable forms of international action and inter-territorial co-operation. Mr. Mallamaire, of Dakar, has been consulted on the practical implementation of the project, which should make it possible to reach practical conclusions.

For its part, F.A.O. had contemplated the setting up of a special fund to provide for research on quelea. The response of governments to F.A.O.'s appeal will not permit of a large-scale project, but does provide the Organisation with the means for a very useful association with the Commission's projects. There is thus every reason for supposing that the Symposium will be held under joint sponsorship and that responsibility for subsequent action will be shared by C.C.T.A. and F.A.O.

#### **(b) Locusts**

As mentioned on a previous occasion, F.A.O. and U.N.E.S.C.O. undertook a joint ecological study of the main breeding grounds of the migratory locust. The project is to last three years and will cover a vast area extending from West Africa to the Near East. The Commission took part in a preliminary meeting held in London in February 1958. A progress meeting was held in December 1958. Mr. Mallamaire, who is a leading expert in locust control in Africa, is providing very effective liaison between F.A.O. and C.C.T.A. on this subject.

#### **(c) Rodents**

The important part played by birds (quelea) and insects in the destruction of agricultural crops should not obscure the damage wrought by certain vertebrates, both among standing crops and those in storage. The Second Symposium on the Quelea Bird drew the attention of biologists to the danger to farm produce constituted by anseriformes, columbidae and rodents. Activities on this subject may possibly be proposed at a future date.

#### **(d) Storage of Food Crops**

The last C.C.T.A. meeting was in 1957. F.A.O. appears desirous of holding a joint meeting with C.C.T.A. in 1961. A C.S.A. directive would be valued.

#### **(e) Eichhornia Crassipes**

News arrived in the middle of 1958 of the infestation of the Upper Nile basin by *Eichhornia crassipes*. This bears out the repeated warnings on the subject given by C.S.A. Governments of threatened territories should take

all possible measures to prevent the invasion of fresh areas which are ecologically favourable to the pest.

As regards the Upper Nile, a bilateral aid procedure was immediately brought into play to assist the Sudan, thanks to speedy and effective action by the Belgian authorities. At the same time, the Commission is proceeding with the implementation of the resolutions of the Leopoldville Symposium in 1957, on the lines laid down by the Ninth Meeting of C.S.A. (Recommendation XXXVII):

The Belgian authorities have entrusted the Office of Waterways (Bureau des Eaux) at Leopoldville with the task of compiling and publishing the map of regions of Africa ecologically favourable to the spread of the plant. The map will be published without cost to governments. According to information received from Leopoldville, work is proceeding normally.

The Phytosanitary Commission recommended an absolute ban on the importation, transit, possession, cultivation, sale and transport of *Eichhornia* (Recommendation XVII, Third Session). This recommendation is binding.

Professor Lebrun gave the Ninth Meeting of the Council information on the despatch of a mission to the Amazon basin, where *Eichhornia* originated; the object will be to determine the factors that have prevented the spread of *Eichhornia* on a disastrous scale in that region. The mission will consist of a Belgian expert, a British expert sent by the United Kingdom, and an expert recruited locally for his knowledge of the Amazon basin. The Commonwealth Institute of Biological Control at Ottawa, which has stations in Trinidad, California, India and Pakistan, has offered its services.

Finally, the Joint Secretariat was requested in Recommendation XXXVII (*e*), of the Ninth Meeting of the Council, to prepare estimates of the cost of publishing a pamphlet on harmful aquatic plants. Dr. H. Wild, of the Royal Botanic Gardens, Kew, has agreed to undertake this work with the assistance of the specialists at Kew and of Mr. J. E. Dandy, of the British Museum.

## **Phytosanitary Protection**

### **Inter-African Phytosanitary Commission**

The Phytosanitary Commission has pursued its activity. 1957, the first year of the Commission's Scientific Secretariat, was a year of research devoted to the collecting and indexing of documents relating to existing legislation in Africa and to consultations with the African territories concerned. However, 1958 saw a start in practical work, with the elaboration of a system of protection against diseases and noxious insects liable to be introduced into Africa.

(a) An information service was organised, consisting of:

the compilation and keeping up to date of card indexes for insects and diseases present in Africa South of the Sahara, insects and diseases present in neighbouring islands but not on the continent of Africa, and insects and diseases not present in Africa;

the despatch of newsletters and bibliographical notes likely to be of interest to phytosanitary protection services in Africa.

The Secretariat is in constant touch with the relevant services in and outside Africa. One concrete result is that, through its contacts with the United States Plant Protection Department, the Secretariat of the Phytosanitary Commission has been able to secure the agreement of an American aviation company to the disinfecting, without charge, of aircraft engaged in traffic between the United States and Africa with a view to eliminating any risk of introducing *Popillia japonica*.

The Secretariat's work is based to a large extent on documents compiled by the two Commonwealth Institutes for Entomology and Mycology, with which it has contracts.

(b) A complete text of phytosanitary legislation for all countries of Africa South of the Sahara, drafted by the Scientific Secretariat, was discussed at the Meeting of Experts in Nairobi in March 1958. Its conclusions were submitted to the Phytosanitary Commission; once approved, the arrangements recommended will be binding.

(c) Practical measures have been worked out to supplement the draft legislation. The most important is the organising of a chain of quarantine stations for Africa. Strict rules must be observed before these stations can be officially recognised. Inspection of existing stations is in progress. The co-ordinated control of dangerous imports can thus become effective and a serious danger to Africa will be averted. Mention has already been made of the special quarantine arrangements envisaged for the cacao plant.

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The general report on the Phytosanitary Commission indicates that it appears to have completed the first phase of its work, and it will be for the Fourth Session of the Commission next October to lay down a programme of activities for its Scientific Secretariat. This will be a particularly opportune moment as it coincides with the change of Scientific Secretary on the retirement of Dr. Risbec, who has activated the work and carried out his duties in a most praiseworthy manner.

It is not for C.S.A. to make decisions on the administrative aspects of the problem. It would, on the other hand, be most useful if the Members of the Council would indicate, from the scientific standpoint, what should be expected of the Commission and its Scientific Secretariat in the future,

as also the conditions of co-operation desirable as between the permanent Bureaux of C.C.T.A. and the Scientific Secretariat of the Phytosanitary Commission.

### **Diseases of the Coconut Palm**

At the request of the Togo authorities, a meeting was organised at Lomé in March, to coincide with the visit of the Scientific Secretary C.C.T.A./C.S.A., on a disease of the coconut palm (St. Pauls Wilt) which is causing widespread damage in Togo and Ghana. In spite of research carried out by a number of specialists, the origin of the disease is not known. The Government of Togo therefore requested that trained experts should be sent out, by way of technical assistance from F.A.M.A. and F.A.O. The purpose of the restricted meeting at Lomé was to offer suggestions on the best means of solving the problem.

After taking note of research so far carried out, the specialists ruled out certain possible causes of the disease in favour of the theory of a virus transmitted by a vector which might be an insect. Little is yet known, however, of the basic physiology of the coconut palm, and research would be desirable. The meeting requested that F.A.M.A. and F.A.O. should find a virologist and an entomologist equipped to study the disease, while not neglecting basic research on the physiology of the plant. It seems likely that the two experts will be sent out by the specialised French institutes (I.R.H.O. and O.R.S.T.O.M.).

At the same time, identical or similar diseases of the coconut palm exist in Mozambique, Trinidad and Jamaica, and possibly in the Philippines. It would be desirable to have the benefit of their experience. The Togo authorities have issued an invitation to hold an international meeting, in Lomé, on St. Pauls Wilt and similar diseases. The Symposium or Specialist Meeting could take place with the collaboration of F.A.O. in 1960 or 1961. The views of C.S.A. would be most valuable.

## **XI.—MECHANISATION OF AGRICULTURE**

There is important progress to report on the Commission's activities in respect of mechanisation of agriculture.

A Secretary has been appointed to be responsible for permanent co-operation. He is Mr. M. N. Garrard, of the National Institute of Agricultural Engineering, who is particularly well qualified and has brought great energy to the assumption of his duties. This appointment has made possible the convening without further delay of the so often deferred First Meeting of the Inter-African Committee for the Mechanisation of Agriculture. The meeting will take place on 1st and 2nd July at Silsoe. As arranged, the Agenda will cover the following points:

action taken on the recommendation of the Entebbe Conference;  
 swamp reclamation and rice production;  
 mechanised cultivation in arid and semi-arid zones;  
 forest clearance and plantation crops;  
 soil conservation in mechanised crop production;  
 establishment of a common basis for evaluating the performance of  
 tractors;  
 bulletin.

The meeting will be essentially technical in character. One delegation has stressed that priority should be given to the promotion of simple agricultural methods which are better suited to African conditions than heavy and costly mechanisation; other delegations will probably share this view.

In addition to the delegations of Member Governments, observers from F.A.O. and the Netherlands will attend; the former will announce the F.A.O.'s projects in this field, which appear to be concerned principally with the improvement of local equipment and agricultural practice in semi-arid zones.

It is to be hoped that the resumption of the Committee's activities will make it possible to reply to numerous requests on this subject. Mechanisation of agriculture is a topical question in every country in Africa. Unfortunate experiences and the occasional successes deserve to be known and carefully studied. The often inordinate hopes placed on mechanisation need to be reduced to their rightful proportions. This is one of the most interesting spheres of inter-African co-operation; it may also be one in which the services of F.A.M.A. will be useful.

## XII.—FISHERIES

### Hydrobiology

As already indicated to the Council, the Third Symposium on Hydrobiology and Inland Fisheries has been postponed, as an International Congress on Limnology is to be held in Vienna in 1959. The Symposium could take place in 1960 or 1961. The Federation of Rhodesia had intimated its desire to be host to the Symposium; the same wish has been expressed by the Tchad and by the Sudanese Republic. F.A.O. is prepared to be associated in the Symposium.

Among possible subjects for discussion, the following may be mentioned:

Professor Fradé suggests that the Symposium should deal with the great lakes: study of fish migrations and currents in the great lakes, collaboration among institutes concerned with the hydrobiology of the great lakes, re-examination of the possibilities of introducing pelagic fish into Lake Nyasa, and possibly planctonivorous and voracious fish into

Lake Kivu. These problems are of particular interest in view of the creation of great artificial lakes coincidental to the construction of barrages.

Various other topics might be considered: pollution of water courses; quarantine measures for fish transported from one hydrographic basin to another; piscicultural propaganda films.

Lastly, there is need for closer co-operation in matters of hydrobiology, more particularly by recommending the appointment of a Co-ordinator for the Panel.

The Fourteenth Session requested C.S.A. to put forward suggestions on the subject. This is an essential activity for many African countries in process of development. The excellent results observed in certain regions, for instance in the Belgian Congo, show that much can be hoped for from inland fisheries, from the economic and nutritional standpoint. At a time when numerous projects are being worked out for the exploitation of river basins in Africa, it would seem to be indispensable to respond swiftly to the Commission's invitation.

### **Results of the Symposium on Oceanography and Sea Fisheries off the West Coast of Africa**

A start has been made in carrying out the recommendations of the Luanda Symposium (1957) along the lines laid down by the Ninth Meeting of the Council (Recommendation XXXIX).

(a) The Panel of Correspondents has been constituted. Dr. E. Postel, Director of Research at O.R.S.T.O.M., who is eminently qualified and has at his disposal the facilities of the Overseas Fishery Laboratory of the Natural History Museum in Paris, has been appointed Co-ordinator of the Panel.

(b) and (c) The first task of the Co-ordinator was to ask, through the Secretariat, for the list of institutions dealing with oceanography and sea fisheries. He was asked to give priority to the implementation of three of the recommendations of the Luanda Symposium: Recommendation IV, for the compilation of an inventory in Latin and the languages in current use, of the species habitually met with in African waters, with reference to the scientific names; Recommendation V for a descriptive catalogue of all species living in African waters; Recommendation XIII for a list of taxonomists with knowledge of the ichthyological species of Africa.

The Co-ordinator will remain in close contact with the U.N.E.S.C.O. Advisory Committee on Marine Sciences and the Fisheries Division of F.A.O. The latter, in particular, has expressed its wish to collaborate with C.C.T.A.; three of its projects are similar to C.C.T.A. ones, namely, a list of specialists in marine biology; monthly bibliography of marine sciences and fisheries; catalogue of species living in marine conditions and of their

environment. Mention of these projects is in itself sufficient to demonstrate the value of joint working.

(d) C.C.T.A. will be represented at the World Scientific Meeting on the Biology of the Sardine, sponsored by F.A.O., in September 1959.

### **Symposium on Marine Biology and Sea Fisheries off the East Coast of Africa**

The Council has already been informed of the forthcoming meeting of a Symposium similar to the Luanda one, but concerned with the East Coast of Africa. In view of the experience of the Luanda Meeting it decided that the agenda will, in this instance, be more restricted. On the suggestion of Professor Millot, who will be presiding, the agenda will cover: taxonomic and biological inventory of marine fauna of economic value; a study of artisan-scale and commercial fishery methods in East African waters; a survey of resources for research at present available in the region; and finally, discussion of the possibilities for international co-operation.

The Symposium will take place at Cape Town, at the invitation of the Union Government. The date has had to be postponed to the beginning of 1960 so as not to clash with the Training Centre on Piscicultural Statistics arranged by F.A.O. at Tanga (Tanganyika) in November and December 1959. In preparation for the Symposium, a considerable documentation will, of course, be assembled. Other interested organisations will be invited to send observers (F.A.O., U.N.E.S.C.O., P.I.O.S.A.).

### **Survey of Fisheries of Major Economic Interest and Other Activities in Respect of Fisheries**

The Commission endorsed the Council's decision at its Ninth Meeting in favour of holding, from time to time, meetings devoted to fisheries and to the principal fish of major economic interest. It decided that the first of these symposia should deal with the thunnidae as suggested by the Council. It is understood that F.A.O. wishes to be associated in its organisation.

The Tenth Meeting of C.S.A. will need to issue directives, as detailed as possible, on the convening of this Symposium, the topics to be discussed and possibly the agenda. The Secretariat had in mind a date early in summer 1960, and a venue in East Africa.

At the Fourteenth Session, several countries called on the Commission to facilitate better co-ordination of research by various institutes. One cannot do better than quote the relevant Recommendation:

“ The Commission generally WELCOMES the efforts made at inter-African level to facilitate the development of fishing. In view of the nutritional value of fish, it CONSIDERS that C.C.T.A. should pay particular attention to the subject. It SUGGESTS *inter alia* that C.S.A. should examine measures to be recommended to develop the co-ordination of

research as between existing specialised Institutes on the West and East coasts. It NOTES that one delegation has even considered the possibility of establishing at some future date an Inter-African Fishery Research Institute, which is evidence of the interest aroused by this problem."

There is no question for the moment of setting up an Inter-African Institute, as the Belgian Government observed in its official comments on the conclusions of the Fourteenth Session. But it would be very useful to hold a meeting of the directors of the institutes in existence on the West coast, so as to afford them an opportunity of comparing and co-ordinating their programmes and possibly of drafting joint programmes. The Belgian Government suggests that this should be done at a meeting of specialists. The Tenth Meeting of the Council should take a decision on this suggestion and see that the appeal of the African countries does not go unanswered.

### XIII.—ANIMAL RESOURCES

#### **Inter-African Bureau for Epizootic Diseases (I.B.E.D.)**

As in the past, the Bureau's work has covered the collection, collation and distribution of information on animal diseases. The quarterly *Bulletin* edited by the Director, Mr. Beaton, and the other regular publications issued, together constitute a means of liaison which is highly valued in veterinary circles in Africa.

The personal links established between Mr. Beaton and the veterinary services of the individual countries of Africa make the Bureau's work particularly effective. The Bureau keeps up correspondence with the African countries direct. The Director and Assistant Director undertake frequent journeys.

I.B.E.D.'s functions of examining requests for technical aid in the field of animal resources is likely to develop in the coming years. Already, as indicated in the Report by the Secretary of F.A.M.A., Mr. Beaton has been called upon by F.A.M.A. for advice and guidance, and has responded with typical ability and energy. (The question of training courses will be referred to later.)

The Council of Management of I.B.E.D. held its Seventh Session at Luanda in July 1958. It will hold its Eighth Session at Muguga in July 1959, when the new premises which the British authorities have had built will come into use for the first time.

#### **Inter-African Advisory Committee on Epizootic Diseases (I.A.C.E.D.)**

Dr. Binns gave the Ninth Meeting of the Council some details on the Fifth Meeting of I.A.C.E.D., held at Luanda in July 1958. In addition to the Members of C.C.T.A., the International Office of Epizootics, F.A.O. and W.H.O. were represented. The two co-Directors of B.P.I.T.T. came from



Leopoldville. The text of an Inter-African Agreement on Foot and Mouth Disease was adopted in its final form, as also various measures relating to rinderpest control. The question was raised of the prohibition on exports of meat originating from rinderpest-infected areas; the ban seriously affects the economy of a number of African countries and it is advisable to determine by systematic laboratory tests at the earliest possible moment whether this prohibition is, in fact, necessary or not. The negotiations between French Government departments and O.I.E. will be followed with special interest; the Fourteenth Session of the Commission added its authority to this resolution. Another decision requests I.B.E.D. to keep records of movements of livestock across international frontiers, so as to assist veterinary departments in determining the likelihood of introduction of the disease through the importation of meat. Finally, a recommendation dealing with the extension of training facilities for laboratory technicians in the field of veterinary medicine will be the subject of further discussion at the Sixth Meeting of I.A.C.E.D.

This will take place at Muguga in July 1959. An Inter-African Agreement on Rinderpest will be proposed. The disease will be the subject of exchanges of views, as will also foot and mouth disease, rabies, lumpy skin disease in cattle, swine fever and bovine pleuropneumonia (which is of concern to the newest C.C.T.A. Member, Guinea).

### **Regional or Specialist Meetings**

The value of inter-territorial co-operation has been clearly demonstrated during the year. In the veterinary field, as in many others, the study of certain problems demands close co-ordination undivided by frontier demarcations. Apart from either very general or highly specialised discussions organised on an inter-African level, there is therefore a need for restricted gatherings of leading technicians from neighbouring territories. Thus it was decided to convene a small meeting, at Kaduna in December 1958, of one or two veterinarians from each of the territories in the Niger-Tchad area, and to devote it to inter-territorial co-operation in the field of rinderpest and pleuropneumonia control. A similar meeting is planned for September in Nairobi to afford an opportunity of discussion of rinderpest control by leading figures in the veterinary departments of the three East African territories, Northern Rhodesia, the Sudan, Ethiopia and Somalia.

The Fourteenth Session of the Commission approved in principle the holding of such meetings and recommended that they should be held whenever the services concerned manifest the desire.

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The F.A.O./C.C.T.A. Panel of Experts on Bovine Pleuropneumonia has been formed. A meeting was to have been held in 1959. F.A.O. wishes to hold the First Meeting in Australia, whereas C.C.T.A. proposes that it

should take place at Nova-Lisboa (Angola). The Panel being a world one, the views of F.A.O. will probably prevail.

In another sphere, the Commission was represented at the First Meeting of the F.A.O./O.I.E. Panel of Experts on Ticks, in London at the end of November 1958.

### **Animal Trypanosomiasis**

A Symposium on Animal Trypanosomiasis was arranged to coincide with the 1958 Meeting of I.A.C.E.D. at Luanda. Discussion covered more particularly the standardisation of methods of investigation and the criteria for evaluating the trypanocide effect of existing medicaments. The Belgian and French delegates contributed an account of the utilisation of trypano-tolerant breeds, which was received with special interest by delegates from countries where the introduction of such breeds might be possible. A report on the Symposium will be published by the Commission.

The holding of the Luanda Symposium is evidence of the gradual developments which have led to I.B.E.D. concerning itself with animal trypanosomiasis. As a result of discussions spread out over several years (see, for example, Recommendation XLV (*b*) of the Ninth Meeting of C.S.A.), the Directors of B.P.I.T.T. and I.B.E.D. have reached an agreement on the following basis:

B.P.I.T.T. continues with its bibliographical index and issues information on the tsetse and on trypanosomiasis in animals and in man, including American trypanosomiasis;

as regards those aspects of animal trypanosomiasis of concern to veterinarians working in Africa, B.P.I.T.T. confines itself to noting titles of and references regarding publications in its bibliographical bulletin; reports reaching B.P.I.T.T. which are of interest to veterinarians are sent to I.B.E.D.;

matters common to human and animal trypanosomiasis are distributed by both Bureaux.

### **Training Courses**

A Training Course on Brucellosis was held at Elisabethville, in June 1958, under joint C.C.T.A./F.A.O./W.H.O. auspices. Eight doctors and nineteen veterinarians attended from the Member countries of C.C.T.A., Somalia and the Sudan. Instruction was by experts from the Pasteur Institute, W.H.O., the Onderstepoort Centre (South Africa) and the Weybridge Laboratory (England).

In view of this excellent result, a similar course is to be held in July/August 1959 on Helminthological Technology. It is intended for doctors and veterinarians who can then give further training to personnel in their own countries; it will follow the Symposium on Helminthiasis. An attendance of about twenty is expected. Much of the course will be held in the

E.A.V.R.O. laboratories, through the kindness of Dr. Binns. Instructors from London and Glasgow will be sent by the British Government, from Lyons by the French Government; one more will be provided by W.H.O.

As noted above, the First Meeting of F.A.M.A. stressed the value of Inter-Territorial Training Courses. The veterinary field offers good scope for such courses. The Secretary of F.A.M.A. has, therefore, informed I.B.E.D. that he would like to propose to Member Governments that a training course in this field should be held each year, some of the courses being for senior officials and dealing with highly specialised subjects, others being longer and intended for middle-grade personnel. I.A.C.E.D. is to formulate proposals at its Sixth Meeting; these will be reported to C.S.A., which may wish to offer an opinion.

### **Animal Husbandry**

The Council of Management of I.B.E.D. has, on several occasions, discussed the value of a permanent organisation for inter-African co-operation in the field of animal husbandry. Its Members unanimously agreed that co-operation in this sphere would be valuable, since animal husbandry in Africa South of the Sahara raises problems peculiar to the sub-continent. The Director suggests two formulae. One involves the setting up of a new, separate, Bureau of Zootechnics. The other envisages a combined Bureau, serving both animal husbandry and the questions at present handled by I.B.E.D. Mr. Beaton's preference is for the second formula and it does appear better suited to the need.

The Fourteenth Session of the Commission was unable to reach a final decision and referred the matter to a working group which is to meet at Muguga on 16th July. It is probable that agreement will be reached to extend co-operation to cover certain problems connected with animal husbandry, subject to exact demarcation of the new branches of activity. The Secretary-General will report to C.S.A. at Kampala.

## PART THREE—TECHNICAL, ECONOMIC AND SOCIAL

### I.—HEALTH AND NUTRITION

#### Tsetse Fly and Trypanosomiasis—Permanent Inter-African Bureau (B.P.I.T.T.)

The Ninth Meeting of C.S.A. approved in broad outline a memorandum on the functions of B.P.I.T.T. (Recommendation XLIV (a)). The Fourteenth Session accepted the terms of this memorandum. The attributions of the Bureau are thus clearly defined.

The issue of information on trypanosomiasis continues (in liaison with I.B.E.D., as set out above). The role of the Secretariat of the Panels of Correspondents for Tuberculosis, Leprosy, Bilharziasis, Treponematosiis, Mental Health and Medical Uses of Radio-isotopes was stressed by the Commission. Despite the efforts of Dr. Louis, Secretary of the Panels, activities have been slow to resume in this field. The majority of the Correspondents do not reply to the letters addressed to them. A number of them appear to have been nominated by governments without taking sufficient account of the indispensable scientific qualifications (in some countries, the same Correspondent figures on three or four Specialist Panels). A big effort is called for in this matter.

B.P.I.T.T., having resumed more active responsibilities, has proved a source of initiative in the health field. Several suggestions have been advanced by the Co-Directors (one, for the utilisation of radio-isotopes, will be the subject of action right at the beginning of the coming year). Contact is constantly maintained with the W.H.O. Regional Office, especially by Dr. Demarchi, who resides at Brazzaville. B.P.I.T.T. has delegated Dr. Louis (and sometimes one of the Co-Directors) to meetings organised by W.H.O. along with C.C.T.A. (Mental Health Seminar, Symposium on Leprosy), as also the Annual Meeting of the Regional Committee of W.H.O. at Monrovia in September 1958.

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As several Member Governments have emphasised—the Belgian Government in especially pertinent terms—when approving the memorandum defining the functions of B.P.I.T.T., the implementation of the recommendations will depend largely on the administrative structure conferred on the Bureau. In this connection, the Secretary-General would like to offer certain comments:

The Co-Directors are very busy men, each being the director of a national institute, and it is not right to burden them with the responsibility for the Bureau's routine administration. Their scientific advice is of the utmost value; their role should be restricted to that of "Scientific Advisers" to B.P.I.T.T.

In that case, the running of the Bureau would be placed in the hands of the Secretary of the Panels of Correspondents, who would assume the title of Director and would need to be employed full-time by the Commission.

The Bureau would be better able to secure a hearing in the countries of Africa and would be in closer contact with the medical services therein if its functions and programmes were laid down by a technically qualified Management Council which would meet, say, every two years. The first meeting could take place on the occasion of the next Inter-African Conference on Medical Co-operation.

The international character of the Bureau should be stressed. For reasons of economy, the Commission has drawn almost exclusively on Belgian personnel, who have given of their best. However, as the Bureau is located at Leopoldville, it would be a good thing to bring in people from other countries.

A memorandum has been circulated by the Joint Secretariat, in agreement with the Co-Directors, and in accordance with the instructions of the Fourteenth Session. A statement of C.S.A.'s views from the scientific standpoint is desirable.

### **Trypanosomiasis—International Scientific Committee for Trypanosomiasis Research (I.S.C.T.R.)—American Aid**

The Luanda Symposium on Animal Trypanosomiasis has already been mentioned. It took place shortly before the very important I.S.C.T.R. Seventh Meeting held in Brussels in August with Professor Neujean in the chair. The attendance numbered forty-five, from Member countries of the Commission, Spanish Guinea and the United States.

The agenda included three items, dealing respectively with the chemotherapy of animal trypanosomiasis, the entomology of the tsetse, and human trypanosomiasis.

The Committee noted with satisfaction the excellent results obtained in chemoprophylaxis of both human and animal trypanosomiasis. In the human field, one of the biggest difficulties consists in the movements of population and the existence of "virus reservoirs", which are difficult to control. The attention of governments was drawn to the practical importance of the recommendations adopted by the 1955 Conference on Medical Co-operation, in regard to the medical consequences of population movements. The Committee recommended wider use of health passports. In the

veterinary field, attention was again drawn to the danger of chemo-resistant strains of trypanosomes developing and to the advantages of trypanosome-tolerant breeds of cattle, such as Ndama in areas of trypanosomiasis infection. From the entomological standpoint, there are large gaps in our knowledge, and recommendations were adopted with a view to filling them: study of the food preferences of tsetse flies linked with a more detailed study of their habitat. The Committee again emphasised the value of undertaking selective experiments in the destruction of game.

A Report of the Seventh Meeting is to be published. The Eighth Meeting will take place in the summer of 1960; it could be held in West Africa. In connection with this meeting, the question arises whether the reorganised B.P.I.T.T. might not usefully act as Permanent Secretariat to I.S.C.T.R. It exists to keep in touch with questions relating to trypanosomiasis; its two Co-Directors (the future Scientific Advisers) are specialists. If C.S.A. shares this view, the C.C.T.A./C.S.A. Joint Secretariat will convey the proposal to the Members of I.S.C.T.R.

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It will be remembered that the American Technical Aid Department (I.C.A.) had offered to assist in the promotion of research in the field of trypanosomiasis. As recommended by the Ninth Meeting of the Council (Recommendation XV), the question was laid before I.S.C.T.R. at Brussels; I.S.C.T.R., however, felt that the principle of the acceptance of financial and/or technical aid should first be considered by the Commission. The Fourteenth Session of the Commission and the First Meeting of F.A.M.A. welcomed the I.C.A. offer and recommended that specific and detailed proposals should be prepared by the specialists concerned, with the co-ordinating assistance of B.P.I.T.T. and I.B.E.D. A number of proposals have accordingly been made. At present I.C.A. is giving active consideration to two requests for aid—one for a large-scale tsetse eradication project in Northern Nigeria, the other for the help of one or two additional research workers on a project for the laboratory culture of trypanosomes which is being conducted by Dr. Boné, of I.R.S.A.C. (Associate Member of C.S.A.). Other proposals have been made, on the suggestion of the Belgian authorities, for research on chemotherapy, the award of fellowships to enable research workers to undertake advanced training, and the grant of a subsidy to B.P.I.T.T. to assist in the publication of the *Bulletin* and the compilation of maps of distribution of glossinae.

I.C.A. is also awaiting a report that is being prepared for the U.S. National Academy of Sciences on a study undertaken, under the direction of Dr. Harrar of the Rockefeller Foundation, on the use of science and technology in the economic development of Africa South of the Sahara. One of the subjects dealt with will be trypanosomiasis. The Report is expected to be ready in June 1959.

### Meeting on Medical Co-operation

As strongly recommended by the Council last year (Recommendation XLIV (b)), following the statement by Professor Fraga de Azevedo, the Commission is making special efforts to promote inter-territorial co-operation in the field of medicine. This form of activity, though not spectacular, is none the less valuable and to a great extent complements the outstanding work of W.H.O.

In certain cases, meetings for co-operation are arranged on a bilateral basis, which is an excellent thing; a meeting of the kind was held for the medical services of Uganda, Tanganyika, Belgian Congo and Ruanda-Urundi.

In other cases, B.P.I.T.T. and the Commission are called upon to facilitate the holding of such meetings which, however, are sponsored by the services concerned. This applies in the case of the meeting held at Bangui from 9th to 13th February 1959. There were delegates from the Belgian Congo, the Centrafrican Republic and the Republic of Congo, a representative of W.H.O., and the Secretary of the C.C.T.A. Panel of Correspondents.

Short papers were presented on medical organisation on either side of the frontier, measures for control and detection of trypanosomiasis, the campaign against leprosy and tuberculosis, problems raised by yellow fever, yaws and other endemic diseases. Mention should also be made of a paper on anti-polio vaccination using an attenuated live virus administered orally. As regards trypanosomiasis it was noted that, in spite of the fact that the disease is in marked regression, constant vigilance is essential, particularly in frontier areas. Tuberculosis at present constitutes a major public health problem, but existing arrangements for prophylaxis, detection and treatment are adequate. For yellow fever, the need for prophylaxis by general vaccination of the population against the Amaril virus was stressed, and greater use of systematic viscerotomy for diagnosis and epidemiological research was recommended.

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Finally, the Commission decided to hold its Third Inter-African Conference on Medical Co-operation at Sa da Bandeira (Angola) in September 1960. The Preparatory Meeting of Experts took place in Lisbon on 25th April, a representative of W.H.O. being present. Its Chairman, Professor Fraga de Azevedo, will doubtless wish to tell the other Members of the Council about it.

The Conference agenda will allow thorough discussion of the implementation of the recommendations of the Second Conference (Leopoldville, 1955) as regards inter-territorial co-operation; it also covers the study of possible measures for international co-operation within the framework of

C.C.T.A. and other organisations, and also the consideration of results of past meetings of a medical character. Lastly, the co-ordination of activities of a prophylactic nature for each major endemic disease will be studied.

### **Other Activities in the Field of Medicine**

*(a) Meeting of Specialists on Virus and Rickettsia Diseases (Recommendation XLVI of the Ninth Meeting of C.S.A.).*

Dr. Binns will report to the Council on the Specialised Meeting on Virus and Rickettsia Diseases communicable between man and beast, of which he was Chairman at Entebbe from 3rd to 10th June 1959. The meeting had been decided on two years ago. Leading items on the agenda included: virus diseases communicable between man and domestic animals or wild animals, yellow fever, rickettsia diseases, problems of immunisation and immunology.

Both written and oral communications were to be presented on these various subjects and the contribution of another Associate Member of the Council, Dr. Haddow, Director of the Virus Research Institute at Entebbe, was expected to be especially valuable. On the other hand, Professor Oosthuizen, who was to have taken the chair, was unable to do so and the technical preparations for the meeting were seriously affected in consequence. Furthermore, in the absence of any responsible head of the London Secretariat at the time when requests should have gone out for papers and the latter should have been received, preparations were somewhat upset, for which the Secretary-General tenders his apologies. The fact that it was possible to hold the meeting satisfactorily with some thirty delegates and observers present (from Member countries, Ethiopia, Italy, W.H.O. and F.A.O.) is due to Dr. Binns, to whom thanks and congratulations are due.

*(b) Mapping of Vectors of Diseases.*

Professor van den Berghe will report progress in this sphere to the Council. In particular he has had conversations with Professor Jackson, Inter-African Scientific Correspondent for Cartography, and will submit suggestions arising from those conversations. It has already been noted that I.B.E.D. has proceeded with the cartography of ticks and B.P.I.T.T. with that of glossinae. General co-ordination, however, is still not as good as might be.

*(c) Joint C.C.T.A./W.H.O. activities.*

It has become a commonplace to remark on the excellent relations between the two organisations; these have been maintained during the past year.

The programme has been fulfilled as set out in detail by C.S.A. at Accra (Recommendation XLIX).

The Seminars on Mental Health and on Nutrition were held at Brazzaville and Bukavu (Lwiro) and are reviewed elsewhere in this Report.



The W.H.O./C.C.T.A. Symposium on Leprosy took place in Brazzaville in April 1959. Dr. Demarchi, Co-Director of B.P.I.T.T., represented the Commission.

The Symposium on Biharziasis will meet in April 1960 in East Africa; the Seminar on Public Health (with special reference to the connection between human medicine and veterinary science) in June 1960; the Symposium on Tuberculosis in August 1960, in Nairobi; the Inter-African Malariology Conference at the end of 1960, probably in the Cameroons.

These various meetings are to be entered to the credit of W.H.O.; C.C.T.A. has only an incidental part to play by assisting in the circulation of preliminary information and securing substantial representation of the various countries. The C.C.T.A./C.S.A. Secretary-General would like to express his gratitude to the W.H.O. Regional Office for keeping him so closely in touch with its work; the more specialised, or more administrative, work of the Commission in medical matters is thereby facilitated.

(d) Training Courses.

Two Training Courses arranged in the field of medicine will be on Helminthological Techniques, in July 1959 at Muguga, and on the Use of Radio-isotopes, in spring 1960 at Leopoldville. Details are given elsewhere in this Report.

(e) Orientation of future C.C.T.A./C.S.A. Meetings.

Two important points are made in a recommendation of the Fourteenth Session, on which the opinion of C.S.A. would be welcomed.

The Commission recommended that proposed activities "should be spread out over a sufficient period of time, in order to avoid specialist meetings being held with undue frequency". For instance, at least nine meetings in the domain of health have been planned for 1960 (three C.C.T.A. meetings and training courses, two W.H.O. meetings and four W.H.O./C.C.T.A. meetings). Although catering for different specialists, these meetings nonetheless cause extra work for the medical services, and give rise to repeated absences. The Commission's recommendation accords with a widespread feeling in Africa which the Secretary-General has frequently heard mentioned in the course of his travels. This being so, and despite the highly interesting nature of the Specialist Meeting on Ankylostomiasis recommended by the Council at Accra (Recommendation XLVIII), it would seem desirable to postpone this meeting; W.H.O. for its part would like it to be deferred to 1961 so as to be able to be associated with it.

The Commission drew attention to preventive medicine and considered that this "should not be sacrificed to therapeutic medicine and that research on the various aspects of preventive medicine is just as deserving of attention as research on major diseases". The W.H.O./C.C.T.A./F.A.O. Seminar on Public Health, and indirectly the Specialist

Meeting on Ankylostomiasis, accord well with this context. It would be interesting to know the Council's view, so as to give suitable direction to suggestions for the programmes for 1961 and the succeeding years.

### **Mental Health**

Following on the C.C.T.A./W.F.M.H./W.H.O. Meeting of Specialists at Bukavu in March 1958, the Ninth Meeting of C.S.A. drew up a programme of action (Recommendation LI) of which the Commission took note:

(a) Specialist Meeting on Child Psychology and basic personality structure of the African and Madagascan populations.

A Meeting of Specialists will be held on this subject at the end of August 1959 at Tananarive, under the chairmanship of Professor Millot. Its purpose will be to take stock of existing knowledge, to guide and co-ordinate research work and to consider the special problems of the African child. It will be preceded by the drafting of two Reports, one dealing with the psychological structure of the adult African and the other with the African child and the development of his personality. The meeting will include general papers to enable an over-all picture to be obtained of basic psychological characteristics in the different African peoples, and specialised papers followed by discussion on the development of the personality and the evolution of the psyche in the course of existence, taking internal and external factors into account. Professor Millot has looked after the preparations in every detail. There is every promise of a most interesting meeting.

(b) Psychological problems of social status in Africa and mental health of African students.

The Council decided in principle to include in its 1960 programme a Meeting of Specialists on "the influence of rapid social and cultural change and of the breakdown of traditional customs on the mental health of African populations". The meeting "will study the tensions resulting from efforts at adaptation to modern civilisation, the consequences to be drawn when preparing education and teaching programmes in Africa, and finally the particular problem of African students" (Recommendation LI (b) (ii) of the Ninth Meeting). The meeting could be held under the chairmanship of Dr. Tigani el Mahi.

While agreeing in principle to this meeting, the Commission called for great care in its preparation and particularly that the extensive basic documentation on the subject already existing in Africa should be assembled in advance.

(c) Traditional psychotherapy.

The Bukavu Meeting noted the benefit that might accrue to specialists training in modern methods from careful study of traditional methods of psychotherapy, and recommended that the possibility of a gradual evolution from one system to the other should be examined.

The Scientific Council has announced its willingness to hold a Meeting of Specialists on this subject in a few years time. It is desirable to define the present state of knowledge beforehand by drawing up reports on the problem. The Correspondents referred to hereunder might usefully make known their views; their reports would be circulated through the Secretariat of the Panel.

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A start has been made in the joint implementation by governments in Africa of other recommendations of the Bukavu Meeting. The most important deals with co-operation between specialist circles. The Fourteenth Session of the Commission approved the setting up of the Panel of Correspondents as recommended by the Bukavu Meeting and asked for nominations for Co-ordinator. The name of Dr. Tigani el Mahi has recently been submitted to the Commission. B.P.I.T.T. will be responsible for the Secretariat of the Panel.

The Seminar on Mental Health recommended by the Bukavu Meeting was held in Brazzaville. The majority of those present were public health administrators, civil servants in charge of public health services and some heads of general hospitals. The discussions were led by eminent specialists invited by W.H.O., among them Dr. Krapf, Dr. Sivadon and Dr. Tigani el Mahi.

### **Symposium on Child Welfare**

The Symposium on Child Welfare was held at Lagos from 25th to 31st March under the joint sponsorship of C.C.T.A. and the International Children's Centre (C.I.E.). Professor Debré, a leading personality in the French medical world, took the chair and much of the success of the meeting was due to his skill and authority. Attendance numbered about fifty, the medical sciences being especially well represented.

As will be remembered, the Symposium was divided into three sections: adaptation of the child to the social evolution of his country; health education and propaganda among the population; and food and nutrition. The agenda was thus a vast one, probably too vast. Many questions could barely be touched on and several of those taking part were disappointed at discussion of a superficial and general nature. The lesson is worth noting for the future, especially if it is decided to proceed with the holding of a second meeting of the kind as recommended by the Symposium.

The conclusions of the Symposium are nevertheless of great interest. They cannot be summarised in a few lines and we must confine ourselves to noting the most important ones.

The discussion on the first and second parts stressed the need for co-ordinating the activities of the various specialists called upon to concern themselves with mothers and children—doctors, paediatrists, nurses,

educationalists, nutritionists, administrators, and so on. Team work is indispensable. In the field of medicine itself, the separation of curative and preventive medicine is to be deplored; often it is thanks to passing through the hands of the doctor that the mother can be reached by the educationalist and instructed in the rudiments of health education. As a general rule, therefore, the Symposium recommended the creation in each country of a planning and co-ordinating committee for the protection of children.

Problems of health education engaged the attention of the Symposium. Methods of action *vis-à-vis* the local populations, the most favourable periods for interesting them in measures of child protection, the places where that education should be carried out, were subjects of much discussion. It was recommended that a small committee composed of specialists in health education should be set up in each country to co-ordinate action in this field and advise on the training of personnel. The holding of a meeting of an international character on the problem was also recommended. This question would seem to deserve some priority. The Secretary-General would like to be able to make proposals to Member Governments and requests the opinion of the Council. Projects of other international organisations must be taken into account, for such a meeting should be arranged in close association with them. In this respect it is recalled that a meeting is planned with W.H.O. on the problems of health education and sanitary development in towns. F.A.O. has unofficially notified C.C.T.A. that it is thinking of arranging a Meeting on Nutrition and Health Education in about 1961 or 1962. Thus concern that preventive medicine should not be neglected as compared with therapeutic medicine, already referred to, is being manifested in a number of ways.

After discussing the links to be created between the school and the African family, so as to avoid setting up dangerous tensions in the child, the Symposium naturally went on to problems of juvenile delinquency. It recommended systematic surveys to be carried out in various African countries on the causes and forms of juvenile delinquency, on the model of C.I.E.'s methods on the one hand and those adopted by the Government of South Africa on the other. This matter should be considered in connection with a recommendation of the Fourteenth Session, which is discussed later in this Report, for the holding of a Meeting on the Social Aspects of Urbanisation.

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On two occasions, in 1957 and 1958, C.S.A. recommended the formation of a Panel of Correspondents composed of persons in charge of protection of mothers and children in the various countries of Africa. The Symposium studied these recommendations and welcomed C.S.A.'s suggestion. It felt, however, that there were serious difficulties in appointing the Panel. On the one hand, close co-ordination must be ensured between this Panel and those

already existing in related spheres (education, nutrition, certain diseases, and so on); on the other hand, and above all, the majority of countries have not yet carried out the necessary co-ordination within their own territory, and it might be better to defer the formation of the Panel proposed by C.S.A. until all the African countries have set up the planning and co-ordinating committees for the protection of children referred to above. The Panel of Nutrition Correspondents, for its part, when consulted at its Lwiro Meeting in May, declared itself unequivocally opposed to the formation of the new Panel.

### Nutrition

Aspects of nutrition were briefly discussed at the Lagos Symposium; the only recommendation of concern to C.C.T.A. requests the latter to help in spreading knowledge on the somatic development of the child (for instance, growth diagrams and somatic measurements).

On the other hand, the Commission during the year under review was associated with a Seminar organised by F.A.O. and W.H.O. in co-operation with C.C.T.A. at Lwiro (Bukavu) from 18th to 28th May. This was a sequel to previous Seminars organised by the same specialised agencies; those attending were already well known to each other. Moreover the meeting was very carefully prepared. It was of undoubted technical interest. Dr. Verdier, who was there for the Secretariat—while Dr. Latsky, Inter-African Secretary for Nutrition, represented the Commission—will report to the Council.

The subject-matter studied was very extensive and there were few problems of nutrition that were not touched on: consumption levels, clinical surveys on the state of nutrition, education in this field, training of personnel, establishment of chairs of nutrition in the universities. Four of the conclusions call for special note:

Compilation of food distribution maps, which would permit of correlation with other nutritional factors.

Qualitative improvement of foods in Africa rather than improvement in quantity; certain crops should be systematically encouraged—grain legumes (see also C.C.T.A./F.A.O. Symposium on this subject), fruits, etc. This latter point should be borne in mind when the Commission comes to draw up its programme for meetings in the sphere of phytotechnics.

Interdependence of nutrition and numerous other disciplines; nutrition is a new science in which knowledge is still largely pragmatic.

Holding of training courses of five to six weeks for either senior personnel or junior staff. This might be an interesting branch of activity for F.A.M.A., in co-operation with F.A.O. and possibly W.H.O. C.S.A.'s advice would be welcome.

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On the occasion of the Seminar at Lwiro, the C.C.T.A. Panel of Nutrition Correspondents held its first meeting on 24th and 28th May; Dr. Verdier was present.

The meeting recommended that the Commission's Publication No. 19 on nutritional research should be revised so that the new edition could appear before the next Inter-African Conference on Nutrition. The work will include, as previously, information on all activities in the field of nutrition in Africa South of the Sahara, together with a summary of work completed, or in progress in Africa, in respect of certain subjects relevant to nutrition (medicine and chemistry, for example). Dr. Latsky, Inter-African Secretary, will be responsible for this work. But he will be able to carry it out only if the Correspondents belonging to the Panel supply him with the necessary basic information. It must be pointed out, however, that at the moment there are several countries which have supplied no data at all in recent years; on the other hand, regular information is received from the Federation of Rhodesia, the United Kingdom and the Union of South Africa.

The Panel felt that its activities should be strictly circumscribed in future. Thus it decided to gather information on the various methods of preparing food (and especially for children) and on its biological value; Professor Platt kindly offered his services for this survey.

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In conclusion, confirmation will be required in the coming months that the Fourth Inter-African Conference on Nutrition will be held in 1961. The Third Conference (Luanda, 1956) had recommended that the next Conference should meet in the Belgian Congo in 1960. That year is not convenient, because of the holding of two important world events, the International Conference on Nutritional Sciences at Washington and the International Conference on Dietetics at Edinburgh. The Inter-African Conference cannot therefore meet until 1961. The Secretariat has already been informed of the interest of the Nutrition Division of F.A.O. and the W.H.O. Regional Office, which ought therefore to be closely associated in the preparations for and holding of the Conference. As to topics, the Panel of Correspondents has recommended that the Conference should be mainly devoted to "national food policy" and should also include technical discussion on certain individual problems.

#### **F.A.M.A. Training Course on the Medical Uses of Radio-isotopes**

At its Ninth Meeting, C.S.A. issued directives regarding preparations for a possible course of training in the medical uses of radio-isotopes. In view of the marked interest in certain quarters, and despite the reservations of others, it was decided at the Fourteenth Session and the First Meeting of F.A.M.A. that the course would be held at Leopoldville towards the middle

of 1960. The Belgian Government will provide the greater part of the material facilities and offers from the French Commissariat de l'Énergie Atomique will cover any further equipment needed; instructors will be supplied by the Belgian, British and South African Governments as also by W.H.O. and, if need be, the International Atomic Energy Agency and by I.C.A. A few fellowships will be available.

This will be an introductory course—there can be no question of training real specialists in a matter of a few weeks. There will be some elementary lectures on basic principles; other expositions will cover medical problems proper and possibly utilisation in medical entomology; lastly, there will be lectures to show the dangers involved in the handling of radio-isotopes and the reasonable limits which must on no account be exceeded, bearing in mind the present state of progress in the countries of Africa.

The course will be bilingual. Although few official candidates have been registered, a large attendance seems assured.

## II.—TECHNOLOGY

### **Second Inter-African Conference on Housing and Urbanisation**

The Conference met in Nairobi from 19th to 30th January, having attracted an especially numerous attendance of 105, including observers from Ethiopia and from three U.N. organisations, as well as thirteen private individuals. The number of preliminary papers was evidence of the interest aroused by this gathering—more than 150 (the printed C.C.T.A. publication will have to be confined to brief summaries of the technical documents).

The agenda fell into four parts. The first, dealing with the problem of urbanisation as a whole, its causes and effects, will be considered in the chapter on Social Sciences.

The second part was devoted to town planning, means of combating or failing that, remedying, overcrowding in towns, together with the organisation of residential quarters. The statements of delegates convinced the Conference of the importance of emphasising to the governments responsible the necessity for integrating their town-planning policy with their general development plans; preliminary surveys should be made, covering economic, technical and sociological aspects, by teams composed of experts in the various disciplines. Planning should apply from the highest to the lowest level, and the Conference recommended the setting up of permanent bodies to this end; it should always be relevant to the known and foreseeable factors regarding living standards and the economic resources of populations.

The third, more technical, section concerned the types of housing to be constructed and their organisation. It started with a survey of housing types in relation to the way of living of the populations, exigences of the climate, health requirements and local supplies of building materials. A large part of the discussions turned on the improvement of the traditional habitat in

both rural and urban environments, and another part on problems of training skilled craftsmen and operatives so as to improve output. An interesting recommendation calling on F.A.M.A. was adopted in this respect.

The last section dealt in detail with the technical problems of housing: water and electricity supplies, sanitary installations, kitchens, equipment, use of local materials (wood, thatch, stabilised earth and so on), construction on heaving soil, etc. This discussion ended with the adoption of a number of recommendations, some of which constitute directives for the Inter-African Secretariat on Housing.

An exhibition held in connection with the Conference included contributions from the majority of Member countries. Recommendations requiring international action were considered by the Committee on Housing after the Conference. The Committee formulated in precise terms the requests addressed to Mr. Stutterheim as Inter-African Secretary for Housing, and in particular requested the circulation of a list of research bodies working in this field and of a bibliography of books and articles published on these subjects. The United Nations observer, Mr. Weissman, who was present at the Conference, was able to compare U.N. projects with those of C.C.T.A. There are good grounds for hoping for close liaison in future.

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The Inter-African Secretariat on Housing has an important role to play following the Conference. No reminder is needed regarding the technical qualifications and high efficiency of the Committee's Secretary, Mr. Stutterheim, Director of the National Building Research Institute of Pretoria. It is good that the Commission has now provided this Secretariat with some means of functioning. Mr. Stutterheim has already made a journey of a few weeks' duration to West and Central Africa. This body should quickly occupy its due place in the work of C.C.T.A.

Leaving aside the Third Inter-African Conference to be held in several years' time, mention should be made of three specialist meetings recommended by the Nairobi Conference and the Committee on Housing.

(a) C.C.T.A./W.H.O. Seminar on Hygiene and Sanitation in Relation to Housing. The Conference recommended the holding of such a Seminar around 1961. It would be attended by engineers, architects, town planners and administrators on the one hand, and doctors and educationists on the other. Occasions for co-ordinating the views of these various specialists are too rare and a Seminar as envisaged should be valuable.

(b) Meeting on problems of architecture and construction of certain community units. The Nairobi Conference dealt mainly with urban family housing. There are complex technical problems involved in the construction of certain community centres (hospitals, schools, municipal buildings). The usual methods of co-operation could usefully be employed in regard to



these problems, the more so as each of them concerns several disciplines. The Joint Secretariat has consulted the Inter-African Secretary on Housing and, through him, experts in various parts of Africa. He may later propose that C.S.A. should devote one of its specialist meetings to the subject in the future.

(c) Meeting of representatives of research organisations in Africa.

It is desirable to promote the fuller exchange of information among research bodies in the sphere of housing and to seek some degree of co-ordination. It is to this end that the Conference asked Mr. Stutterheim to distribute a list of research organisations in Africa (to be supplemented for the rest of the tropical world by the U.N. Bureau of Social Affairs). To the same end, the Committee on Housing recommended a meeting in the near future, in the form of a Symposium, of representatives of research bodies in Africa South of the Sahara; as far as possible, the meeting should be preceded by a general survey of the institutions in question carried out by an expert (probably from U.N.).

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The Secretary-General felt that a full account of the results of the Nairobi Conference was called for. Later in the present Report it will be noted as having been disappointing from the social sciences aspect. But from the purely technical aspect it constitutes a landmark. A gathering on this scale should certainly be the exception; the masses of documents, and crowds of delegates, are difficult to manage. Yet without such a meeting it would have been impossible to assemble the technical information or for the delegates to meet. Considered as an end in itself, such a conference is open to criticism; but looked at in its proper perspective as an important stage on the road of co-operation, it assumes its true significance. For confirmation, one has only to refer to the number of enquiries, requests for technical assistance, and suggestions that have come in as a result of the Conference.

### **Radio-isotopes**

The Council and the Commission have on several occasions recorded their view that the extension of co-operation in the field of radio-isotopes would benefit the various African countries. Many statements have been issued concerning radio-isotopes and, more generally, the peaceful uses of atomic energy. The establishment of laboratories has been announced; a reactor using enriched uranium was recently set up at Leopoldville and another may soon follow in South Africa. There are undoubted benefits to be derived from making technical facilities and equipment available to the under-developed African territories. The matter has aroused public interest and great things are expected of it.

The first major activity of the Commission was the Meeting of Specialists in Pretoria in 1957. Its recommendations have now been largely implemented.

(a) Information has been circulated. It is likely to increase in volume with the establishment of the three Panels of Correspondents as laid down by the Commission. The Survey on the Use of Radio-isotopes in Agriculture which is to be launched, and is to incorporate contributions from the Correspondents, merits special attention. It would likewise be desirable for governments to furnish more exact details, as promised, on the progress of their programmes for the use of radio-isotopes in Africa.

(b) The Joint Secretariat circulated the texts of the English, French and South African regulations on the transport of radioactive substances, as also the I.A.E.A. recommendations on the international transport of radioactive substances.

(c) Following a prior exchange of views of a very satisfactory nature, the Secretary of F.A.M.A. visited the Officers of I.A.E.A. at Vienna. The interview was favourable; contact has been established between the two organisations and Mr. Ensor has on a number of occasions sought the help of I.A.E.A. in order to meet requests for information.

(d) As noted above, a training course is to be held on the medical uses of radio-isotopes. Subsequently, a second course might be held on the use of radio-isotopes in agriculture.

### Roads

In accordance with Recommendation L of the African Regional Scientific Conference at Johannesburg, the Commission entered a new field, that of road building technology, in 1958. A Specialist Meeting on Road Research took place at Lourenço Marques from 25th to 30th August, under the chairmanship of Engineer F. Mouta. The attendance numbered about forty, including observers from Italy, the Permanent International Association of Road Congresses and the International Roads Federation.

The agenda covered the three main aspects of the road problem in Africa: road economics; road construction and maintenance; and mechanisation of construction and maintenance works. Three rapporteurs were appointed to prepare the basic reports for the meeting. Mention should be made of the number of papers circulated in advance—more than fifty, which is very numerous for a specialist meeting. The discussions were of a practical nature, further underlined by visits to various works in progress in the south of Mozambique Province. The Report on the Meeting is contained in Publication No. 34.

The Fourteenth Session approved the setting up of a Panel of National and Territorial Correspondents, with a Co-ordinator who has yet to be appointed. In addition to this Panel, and in view of the wide variety of questions connected with roads, each main subject will be entrusted to one particular Correspondent nominated by the country whose experience is greatest in that field. The following list was proposed by the meeting and approved by the Fourteenth Session (Recommendation XLIII):

economics of roads and road transport (French Republic and Community);  
properties of African soils (Union of South Africa);  
earth roads (Belgium);  
pavement design (United Kingdom or a British territory);  
soil stabilisation (Portugal);  
bituminous surfacings (Federation of Rhodesia and Nyasaland).

As regards the Panels of Correspondents, the Meeting also assigned important tasks to them: collection of data on geological, pedological, climatological and hydrological factors likely to contribute to research on road building materials and on drainage and anti-erosion measures; exchange of information on the treatment of non-surfaced roads, on the costs of road construction and the performance of different types of road-building machinery. Finally, the Meeting suggested that pilot studies should be carried out on the construction of improved roads and on road surfaces, and that the technical road dictionary published by the Permanent International Association of Road Congresses should be revised by that body.

The holding of an Inter-African Road Conference had been mooted, but the Specialists' Meeting felt that this would be premature. On the other hand, the experts called for the summoning of further specialist meetings. They suggested a Symposium on Soil Stabilisation to study African experience with cement, bitumen and any other materials and consider the possibilities of joint research. The Fourteenth Session decided that the Symposium should meet in Kenya at the beginning of 1960.

### **Other Activities of a Technological Nature**

There was a long discussion at the Ninth Meeting of the Council on the extension of activities in the technological sphere. The Commission has so far done little in this field, which is surprising. The purpose of C.C.T.A. is to facilitate direct contacts between research workers and technicians in all fields where the exchange of experience and the co-ordination of activities afford possibilities of mutual benefit. The field of technology answers well to this description. Whether in matters of water treatment, corrosion, port construction or production of fertilisers and so on, the techniques practised in the more advanced countries may be of immediate benefit to the others. The progress of under-developed countries largely depends on their having access to a technology adapted to African conditions. There is no sphere in which co-operation can assume a more concrete and more directly profitable form. Whenever the Commission touches on this sphere of action, numerous echoes are at once aroused; its activities in respect of housing have called forth numbers of communications and have been followed with interest by experts from all countries; the Meeting on Road Research was highly successful. The first requests for technical assistance are largely directed to just these technological fields.

The Ninth Meeting of the Council adopted Recommendation LVI, which was later discussed by the Fourteenth Session. The latter explicitly approved C.S.A.'s ideas. Following suggestions thereupon submitted by the Executive Committee of C.S.A., the Commission also declared that "it would approve of C.S.A. devoting one of its specialist meetings in 1960 to the problem of water treatment". Dr. du Toit and Professor Lebrun will explain to the Council why they suggested this topic. The problem is of paramount importance for semi-arid zones, and if it can be confirmed that the methods perfected in certain parts of Africa South of the Sahara can be economically employed elsewhere and enable brackish or salt water to be used for irrigation and the watering of animals, this will be a success for inter-African co-operation.

It will be for the Tenth Meeting of C.S.A. to decide on devoting one of its specialist meetings in 1960 to this topic, lay down the broad lines of the agenda, decide which specialists to invite and suggest a venue. The U.N.E.S.C.O. Advisory Committee on Arid Zone Research is planning a similar study meeting; it might be associated with the C.S.A. meeting.

Furthermore, the Council may offer suggestions for exploring other fields of technology. The Scientific Secretary will lay before C.S.A. a detailed memorandum proposing that problems of the transport of electric power in tropical countries should be studied at inter-African level.

### III.—SOCIAL SCIENCES

#### Second Inter-African Conference on Housing and Urbanisation

Technical aspects of the Nairobi Conference are reviewed above and it has been noted that from this angle the Conference was a success, that success being proportionate to the technicality of the points discussed. It must not be forgotten, however, that the Conference was also intended to provide for exchanges between social sciences experts and persons responsible for housing. The process of urbanisation now affects the whole of Africa; its repercussions are bound to be considerable since, as noted by the rapporteur for the first part of the Conference, Professor Lebeuf, the urban population in Africa is growing at the rate of 1.4% annually. It thus seemed a good idea to bring ethnologists, sociologists and economists together with administrators in charge of housing for discussion on the causal factors of migration to the towns and the growth of the latter, and then to get them to study together methods of forecasting future housing needs and discuss methods of finance.

These points were on the agenda at Nairobi and the final Report contains certain pertinent and interesting conclusions. Nevertheless it must be admitted that the objective was not fully attained. The social sciences experts were few in number as compared with the many engineers, architects

and administrators. Of the latter, the majority were anxious to proceed quickly to the technical discussions, and the exchanges of views on the first part were not so substantial as those that followed.

The Fourteenth Session of the Commission expressed regret at this and instructed the Secretary-General to submit proposals for further study of the social problems connected with urbanisation. A Symposium will therefore be proposed. Its nucleus will consist of social sciences experts, around whom will be grouped a few housing technicians. U.N.E.S.C.O. has promised its help, which should be valuable, as will also that of U.N., on account of the thorough surveys carried out in other continents. Care must be taken, however, not to err in the opposite direction this time.

### **Study of Migrations in West Africa (Joint Project No. 3)**

The Scientific Director of the Project, Mr. Rouch, made a progress report to the Commission in May, and Mr. Piault, in charge locally at Kumasi, gave the Scientific Council further details at its Ninth Meeting. The survey has been completed in the Ivory Coast (notably at Bouaké) and in Ghana (at Kumasi in particular). The survey has been extended to the Togo frontier; the work will go on till September.

There is no point in repeating here the details of the enquiry of which Members of the Council are well aware: it covers the systematic survey of migratory movements from Upper Volta, Soudan, Niger, Northern Togo and Northern Dahomey towards the coast of Ghana and the Ivory Coast. It is directed to the statistical and qualitative study of the problems in its various aspects. Thanks to the co-ordinating factor of C.C.T.A./C.S.A., the enquiry is being conducted by similar methods and with similar teams in countries of differing sovereignty and administrative structure. In accordance with Recommendation LXII of the Ninth Meeting of the Council, there will be a meeting towards the spring of 1960 to decide on how the results are to be utilised. The analysis will take account of their value in a number of distinct branches—statistics, economics, labour, health, etc. Two reports will be circulated before the meeting, indicating the general trends revealed by the enquiry and containing a critical examination of the methods used. It will also be necessary to reach decisions regarding publications of the results of the enquiry.

### **Other Activities in the Sphere of Social Sciences**

The Council at its Ninth Meeting adopted very full recommendations on the subject (Recommendations LIX, LX, LXI). Little fresh arose at the Sixth Meeting of the Committee on Social Sciences, which was held at Lisbon from 21st to 24th April last. A brief review follows.

The first stage in the collection of information on governmental archives is complete. A comprehensive document will shortly be circulated. A start

can then be made on the second stage of collecting information on non-governmental archives held by missions, tribal authorities, private persons and so on. Serious obstacles will be encountered in this work.

The Committee on Social Sciences requested Dr. Silva Rego to submit proposals for periodic meetings of historians and archivists in order to study the practical problems of co-operation, and in particular as regards making available to historians the archival documents necessary for their work.

The Committee recommended that measures should be encouraged for the systematic recording and collection of existing oral traditions in Africa; this material, indispensable for the knowledge of history and the analysis of civilisations, is fast disappearing and it will soon be too late to save it. The Panel of Correspondents set up for Ethnohistory should meet promptly.

The study of quaternary archaeological and geological correlations is dealt with in the section on Geology. The proposed Atlas of Pre-History suggested by Dr. Clark is a long-term project which will be raised at the Sub-Committee on Geology, Paleontology and Climatology of the Congress on Pre-History meeting at Leopoldville in August, with Dr. Clark and Professor Lebeuf present. As to archaeological research in the Niger/Tchad/Nile area, Professor Lebeuf made it known that it will be possible for work to start shortly; the Panel formed to cover this subject could meet soon.

The Committee on Linguistics will meet in Brussels in June 1959, with Dr. Guthrie presiding; it will be possible to give fuller details at the Tenth Meeting. The Committee was to consider in particular the publication of a brochure on place names intended for use of research workers.

The Commission was approached by the general rapporteur of the international gathering on "The Cinema and Africa South of the Sahara", which Professor van den Berghe attended. The organisers would like C.C.T.A. to be associated with their work. The matter was raised at the Fourteenth Session, but received no official backing from any of the Member Governments.

Professor Gourou is proceeding with the compilation of the 1/1,000,000 demographic maps. He has been asked to communicate details, through the intermediary of the Joint Secretariat, for the information of all African countries, of standard procedures for the compilation of maps of numerical distribution and density of population. The map to 1/10,000,000 scale will appear shortly.

The Committee again recommended the publication of an annual Bulletin of Social Sciences.

Finally, U.N.E.S.C.O. informed the Joint Secretariat of its intention of compiling short anthologies of traditional African literature. What seems to be contemplated is a work of popularisation, very different in concept from the undertaking recommended by the 1955 Social Sciences Conference.

### Organisation of Co-operation in the Field of Social Sciences

After lengthy discussion, the Ninth Meeting of C.S.A. at Accra approved in principle a memorandum submitted by the Joint Secretariat in agreement with the Scientific Secretary for Social Sciences and supported by Professor D. Forde (Recommendation LVIII). The Sixth Meeting of the Committee for Social Sciences drew up a reorganisation plan which will be implemented in the coming months; it meets the view of the Council as expressed at Accra.

The general co-ordination which is essential in the matter of social sciences will be provided from time to time by *ad hoc* meetings and permanently by the Secretary for Social Sciences, who will be appointed to the C.C.T.A./C.S.A. Secretariat at Lagos or at Bukavu at the beginning of 1960. Subject to this proviso, scientific activities will be conducted within the framework of panels and committees already existing, or to be created as occasion demands, in the fields with which the Commission is concerned:

Archives: existing Panel of Correspondents; Co-ordinator—Mr. Baxter, Chief Archivist of the Federation of Rhodesia and Nyasaland.

History: Panel of Correspondents to be set up; Co-ordinator—Dr. Silva Rego, Professor at the University of Lisbon.

Ethnohistory: Panel of Correspondents to be set up; Co-ordinator—Mr. Vansina, Head of I.R.S.A.C. Research Station at Astrida (Ruanda-Urundi).

Archaeology: Sub-Regional Panel of Correspondents covering the Niger/Nile area (Nigeria, Niger, Tchad); Co-ordinator to be appointed; organisation bound up with the project for archeological research in the area.

Physical Anthropology and Genetics: no Panel at present; Dr. Hiernaux has been asked as Inter-African Scientific Correspondent to cover also physical anthropology and genetics; he is enquiring into the possibilities of establishing a centre for the collection of unpublished information on somatic anthropology.

Psychology: decision deferred in view of the existence of a Panel of Correspondents on Mental Health and a Scientific Correspondent for Psychotechnical Tests.

Economic questions: no change in the existing arrangements.

As regards the Inter-African Secretary for Social Sciences, unfortunately Professor Lebeuf is leaving the Commission. He will be replaced when he leaves and this change will coincide approximately with the introduction of the system described above.

### Libraries and Documentation

Although somewhat outside the context of the present chapter, it is convenient to report here on a suggestion from the C.C.T.A./C.S.A. Scientific Secretariat:

The two Scientific Secretaries have, in the course of their travels in Africa, been struck by the lack of information available to research workers as regards scientific and technical periodicals to be found in the libraries of their own or neighbouring countries. They therefore feel that C.S.A. should renew the recommendation adopted by the African Regional Conference at Johannesburg in 1949 (and referred to by C.S.A. at its first two meetings) for the compilation of a list of reviews and periodicals of a scientific and technical nature held by libraries in Africa.

It remains to be seen how the articles could be communicated to the researchers interested. The Johannesburg Conference contemplated the setting up of regional photostat units. This is an ambitious plan; and facilities of this kind exist in most of the Institutes. It would seem that an expert might make useful recommendations on this point, or failing that a small group of experts meeting for the purpose.

C.S.A. is invited to make known its views on these two suggestions; if it favours the former, it should indicate how the list in question should be drawn up. Professor van den Berghe has notified the Joint Secretariat of his interest in the project and that he hopes to offer his comments at Kampala.

#### IV.—ECONOMICS AND STATISTICS

##### **Inventory of Economic Studies (Joint Project No. 4)**

The work of Miss P. Ady, Editor of the *Inventory*, is now complete (Publication No. 30). It includes an appendix in Portuguese giving the titles of works mentioned in the *Inventory*. Supplementary lists are to be published periodically to cover new studies completed or in hand in the field of economics.

##### **Comparative Study of National Accounting Systems (Joint Project No. 6)**

The Commission approved the arrangements for compiling a descriptive and comparative study of national accounting systems employed in Africa South of the Sahara, with reference to the international system recommended by U.N. and O.E.E.C. The two experts appointed to carry out this work are Miss P. Ady, Associate Member of the Scientific Council, Fellow of St. Anne's College, Oxford, and Mr. Courcier, Head of the Economic Accounts Department in the franc area. Mr. Milton Gilbert, Director of the Economics and Statistics Section of O.E.E.C. in Paris, is acting as adviser to the two experts.

The experts are sharing the work of analysis. Mr. Courcier is well placed for obtaining information on African territories in the franc area; Miss Ady has prepared a survey of the systems operated in the Federation of Rhodesia, Belgian Congo, South Africa, Ghana and East Africa.



A report is to be circulated in the summer with a summary of the two experts' work. It will include a description of the systems and some comments on their comparability. This report will be considered by a Working Group. Its object will be to examine the content of the survey and possibly to reach conclusions on the opportuneness of adopting common standards. The Working Group will also have to decide on the distribution of the reports and conclusions.

There can be no doubt that this sector is one of great interest in the economic development of the countries of Africa. The point figures on the agenda of the First Conference of Statistics convened by the United Nations Economic Commission, which attaches particular importance to it. The International Association for Research on National Income and Wealth, it will be noted, also proposes to hold an African conference in 1960 or 1961 (to be organised in part by Miss Ady and Mr. Gilbert) to study the methods of calculating national income, the use of forecasts of national income in working out long-term economic policy and to study general problems of evaluating income and wealth in Africa. The Association has requested the co-operation of C.C.T.A. in organising its conference, which may be held at Bukavu or Lagos. Dr. Martin and Miss Ady having advised in favour, this co-operation has been promised.

### **West African Regional Meeting of Economists**

The Secretary-General drew attention at the Tenth Meeting of the Council to the desire manifested by several personalities at the head of economic affairs in West Africa to establish mutual contact. They met at Ngor (Dakar) in November 1958. Some thirty people took part in the meeting, among whom were personalities in control of economic affairs in French West Africa, the Federation of Nigeria and Ghana.

The meeting was of a personal character. It was not its purpose to study clearly defined questions with a view to reaching inter-governmental decisions, but rather to provide a meeting ground for exchanges of views between economists. No agenda had been drawn up beforehand; those attending were not government delegates. Half the time was spent in informal discussion in small groups with no fixed procedure; no report was issued and no recommendations were adopted.

Lively discussions took place, covering the main subjects of interest to the countries in the region, under the following headings:

problems concerning capital investment (financing, private savings, investment from outside sources);

fiscal problems and the possibility of developing direct taxation;

agricultural problems (land tenure, modernisation of agriculture, stabilisation of commodity prices);

social problems (assistance to African business men, urbanisation).

It is difficult to draw any general conclusion from this meeting. It was useful, since it afforded an opportunity for direct contacts between economists. It would not, however, be suitable for repetition in the same region in the same form—another gathering should not be of so general a nature. Will there be other meetings on definite topics? In view of the establishment of E.C.A., it is not for C.C.T.A. to propose them. However, there is no reason why governments wishing to arrange direct discussions among themselves should not use the Commission as intermediary. At Ngor it was proposed to compare market research of interest to several countries in one region and perhaps to undertake or supplement such researches jointly. At the Kaduna Veterinary Meeting a resolution was put forward in favour of holding a meeting on the cattle and meat trade in the Niger/Tchad region. This is a profitable form of activity. Should it not prove possible to develop it on a bilateral basis, the Commission might usefully intervene. The Fourteenth Session recognised this in laying down that it is for Member Governments to take the initiative (Recommendation XLIX (c)).

### **Other Activities in the Field of Economics**

#### **United Nations Economic Commission for Africa (E.C.A.)**

Before entering on a discussion of other C.C.T.A. activities in the field of economics, it is appropriate to take note of the major event in recent months, the establishment at Addis Ababa in January 1959 of E.C.A. This body held its First Session at the New Year in the Ethiopian capital. Its programme is a vast one, covering every aspect of economic development. It will have large resources and be able to draw on the considerable experience of U.N. and its Specialised Agencies. E.C.A. will thus play a decisive part in this and related spheres. At its First Session a decision was taken in favour of close liaison between E.C.A. and three organisations in Africa, of which C.C.T.A. is one. The Addis Ababa resolution found an echo in several of the recommendations adopted at Monrovia; E.C.A. has been invited to send observers to the Commission's Annual Session; the Secretary-General of C.C.T.A. is to co-ordinate the Commission's programme with those of E.C.A.

At the outset, E.C.A. has given priority to problems of statistics. It is holding a Conference of Statisticians at Addis Ababa in October 1959; this will be referred to later.

Priority is also given to the training of African economists and statisticians. A survey is at present being carried out by U.N.E.S.C.O., on behalf of E.C.A., on facilities existing in Africa and elsewhere. C.C.T.A. is collaborating by receiving information and passing it to U.N.E.S.C.O. Once the survey is completed, the Executive Secretary of E.C.A., Mr. Abbas, will make proposals for the extension of training facilities.

It is desirable that such training should as far as possible take place in

Africa itself; apart from very specialised studies, instruction given on the continent, in a relatively familiar environment, seems to yield the best results. E.C.A. has decided to propose the establishment of an African Institute, but it may be wondered if a single institute would meet the various problems. It would be interesting to have the opinion of the two C.S.A. specialists, Professor Leduc as regards university experience, and Dr. Martin from the standpoint of an economist directly responsible in one part of Africa. Their advice would likewise be valuable on the complementary role which C.C.T.A. and possibly F.A.M.A. can fulfil in this respect. The Secretary-General expects to go to Addis Ababa after the Council Meeting at Kampala and will be guided by the advice given him by C.S.A.

On the subject of training problems, it should be recalled that I.C.A. (American technical aid administration) had suggested assisting C.C.T.A. in establishing, under its auspices, an African Academy for Economic Development which would have organised each year seminars and series of conferences to enable young Africans to familiarise themselves with some of the most important problems of economic development. The Fourteenth Session felt that the proposal came outside the normal scope of the Commission's activities and could not be accepted. I.C.A. may return to the idea in another form and working through a different body.

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The vital part which E.C.A. will now play in the study, and possibly the solution, of major problems in no way detracts from the value of applying the Commission's methods in the economic field. C.C.T.A./C.S.A. has never reckoned to cover the whole of this field, and still less will it do so in future; but there are many cases where the problem is one of collecting existing data, comparing points of view, and providing a meeting ground for experts with thorough knowledge of conditions peculiar to Africa. This is the spirit in which C.C.T.A. operates in all fields; it is the method followed for compiling the two works referred to above (inventory of economic studies and comparative study of national accounting systems). This procedure would still seem to be applicable to other subjects in the future. Here again the opinion of someone actually engaged on the job, like Dr. Martin, would be most valuable.

The Secretary-General will confine himself here to recalling the first two topics suggested for such enquiries:

comparative study of methods employed to encourage private investment;

effects of demographic changes on economic development;

and adding a reference to the recommendation adopted by the Committee for Social Sciences at the suggestion of Professor Leduc, for a comparison of the methods of financing the construction of family housing.

Mention is also called for in this chapter of the I.C.A. plan to hold a Meeting on Agricultural Credit in Libya. Doubts may be expressed on the arrangements for this meeting. If it takes place, the Commission has voiced its wish to be represented; the opinion of the Council would be welcome.

### **C.C.T.A./C.S.A. Programmes in the Field of Statistics**

The Fifth Meeting of the Inter-African Committee on Statistics took place at Lisbon from 14th to 20th November. Representatives of eight Member Governments attended, together with observers from F.A.O. An F.A.O./C.C.T.A. Symposium on the 1960 agricultural census met at Accra from 8th to 22nd March 1959.

Current C.C.T.A./C.S.A. programmes may be set out as follows:

#### **(a) Demographic Statistics.**

The Committee on Statistics decided not to proceed with the printing of the English edition of Mr. Blanc's *Handbook on Demographic Research*. Stencilled copies of an English working translation have been distributed.

The French delegation at Lisbon made a full statement on the studies in hand with a view to organising a mobile system of registration for population records. Information will be circulated regularly in future.

It was decided that a technical discussion would take place at the Sixth Meeting of the Committee on the problems connected with the conduct of family budget surveys in urban and rural media. This discussion would be for officers in charge of surveys in the field, with a view to reaching practical conclusions which would be immediately utilisable.

The French delegation at Lisbon set out a plan for organising a Training Centre, in the Centrafican Republic, for Demographic Statistics in Africa. The Centre is intended for middle-rank officials who will be called upon to work on the 1960 census. It will consist of lectures on theory and practice, and two weeks in the field at Bambari. The Centre itself will be held at Bangui from 6th July to 15th August. In view of the interest displayed by the Belgian and Portuguese delegates, it was decided to extend the Centre to include Belgian and Portuguese trainees. F.A.M.A. is thus associated with the organisation of the Centre. Liberia is also sending two trainees to the Centre.

#### **(b) Labour Statistics.**

The Report by the Secretariat of the Committee at Lisbon on the Enquiry into the Comparability of Labour Statistics is complete and is about to be circulated.

The Belgian Government made a most interesting statement to the Committee on Statistics, on work carried out in the Congo with a view to compiling a standard classification of occupations adapted to African countries. This is a problem that concerns all governments in Africa: I.L.O.'s classification is too detailed and yet incomplete as regards occupa-

tions peculiar to Africa. The Committee recommended that an expert should study the possibility of integrating the results of work done in the Belgian Congo into the I.L.O. Standard International Classification.

The Inter-African Labour Committee considered the proposal at its Ninth Meeting at Geneva in June. It noted the existence of considerable differences between African countries on the utilisation of occupational classifications; there could, therefore, be no question of excessively rigid standardisation. With this proviso, the Committee decided in favour of the project. It also welcomed the I.L.O. proposal to second an expert to I.L.I. at Brazzaville for this work. This is a noteworthy form of co-operation between I.L.O. and C.C.T.A. which, it is hoped, will permit of satisfactory implementation of the plan.

(c) Agricultural Statistics.

A preliminary discussion took place at Lisbon on the 1960 Agricultural Census. It was taken further during the Symposium organised by F.A.O. and C.C.T.A. at Accra in March. Some forty participants were present and F.A.O. looked after the technical preparations.

The first part of the meeting was devoted to statements on censuses already carried out in the various parts of Africa and to exchanges of views on the definition of certain concepts such as "exploitant", "exploitation", "mode de faire valoir" (holder, holding, tenure).

The main part of the Symposium was devoted to preparations for the 1960 Census. It is a matter for regret that the meeting did not take place before F.A.O. settled the census programme; several delegates were surprised at being able to make only minor modifications in the programme and being faced with firm decisions which may sometimes be ill-adapted to African conditions. The Symposium was, nevertheless, useful in enabling possible misunderstandings to be cleared up and recommending the amendments necessitated by the present stage of development of statistics in the sub-continent. The delegates likewise appreciated the exchanges of views on methodology, training of census personnel, sampling techniques and so on.

The Symposium recognised that the 1960 Census would not furnish all the information necessary for a considered study of the agricultural potential of a country and the formulation of a long-term policy. Many countries will wish to supplement the data obtained from the census by more intensive surveys in subsequent years. In this connection, the delegates stressed the importance they attached to the training of permanent teams of enumerators and the need for maintaining close liaison between statisticians and agricultural departments.

One recommendation calls for special note insofar as it may be suitable for international action; this concerns the use of aerial photography in agricultural census taking. F.A.O. possesses valuable documentation which it will distribute to African countries. Training courses could be organised, possibly with the help of F.A.M.A.

F.A.O. is now considering the circulation of the results of the 1960 Census. This question may possibly be discussed at the Sixth Meeting of the Committee on Statistics, in order to arrive at a standard presentation of the results.

#### **Future Action on Statistical Matters—E.C.A.**

As in the economic sphere, C.C.T.A.'s future projects in the sphere of statistics must be considered alongside those of E.C.A. As already reported above, the U.N. Commission is giving priority to the development of statistics in Africa, rightly considering that it is impossible to lay down a long-term economic policy without proper knowledge of the fundamental data of the problem.

E.C.A.'s projects for the training of African statisticians were referred to at the beginning of the chapter. It was also mentioned that E.C.A. will hold its First Conference of Statistics at Addis Ababa from 28th September to 8th October. The agenda is a very extensive one:

- statements by the delegates on the stage of statistical development in their countries, on deficiencies and needs;
- general discussion on statistical development in the various countries and on measures to speed it up, in particular by the training of personnel;
- general statistical survey of Africa proposed by E.C.A.; priorities;
- initiating the survey; preparation of national programmes of work on national income; immediate requirements as regards training.

This brief enumeration of topics indicates how deeply interested C.C.T.A. is in the Conference. The Commission has decided that the invitation sent by the Executive Secretary should be accepted; the Secretary-General will therefore go to the Ethiopian capital; he will have the advice there of the national experts from Member countries of C.C.T.A. The discussion to take place in Kampala will likewise be most helpful for him.

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As in the economic sphere, E.C.A.'s comprehensive programme in no way detracts from the interest of limited and clearly defined activities on the part of C.C.T.A. A number of projects of this kind are mentioned above, and this is the guiding principle which the Committee on Statistics wishes to adopt in future. The accent will be on questions of a practical nature facing statistical services, and particularly on methodological problems. The Secretary-General has proposed that the Committee's annual meeting should be followed or accompanied by a discussion on a clearly defined subject selected in advance; this will apply to the Sixth Meeting of the Committee, as already reported. He also proposed that, in case of need, experts should be called in to conduct investigations on subjects determined by the Committee; the project for the classification of occupations is a case in point. The

seconding of experts to statistical surveys taking place in neighbouring countries has been recommended by the Committee; F.A.M.A. might help with this. The Bangui training course is the third in the field of statistics in which C.C.T.A./F.A.M.A. is assisting.

As will be seen, the Commission's activities in the field of statistics will be numerous in the future. No attempt will be made to handle general problems—for instance, the proposal to add to the *Bulletin* a statistical appendix covering the whole of Africa has been dropped. They will enable the heads of statistical departments to continue the practical exchange of ideas and information.

## V.—RURAL WELFARE

### Community Development—West Africa

#### (a) Regional Symposium on Community Development.

A Regional Symposium on Community Development in West Africa was held at Accra from 6th to 15th April. There were forty participants; among them were representatives of the United Nations, F.A.O., W.H.O. and U.N.E.S.C.O. Three delegates were sent by the Federation of Rhodesia and Nyasaland and the Belgian Congo, and this will facilitate implementation of the plans outlined below for Central and East Africa.

The meeting was most interesting. It was held in one of the African countries which has gone furthest in experiments in community development and its Chairman was Mr. du Sautoy, an outstanding personality who is in charge of community development in Ghana. The meeting covered the over-all problem:

Basic principles: active participation of the rural population in the development of the community.

Technique: psychological approach to the problem, utilisation of traditional methods, basic education, work among women; individual self-help in building, audio-visual techniques.

Co-ordination of activities: various systems, co-operation with technical services, local authorities, finance.

Training of workers: community development workers and specialists employing community development techniques in their own normal work, voluntary local leaders.

Problems peculiar to community development: public apathy, finding local leaders, urban communities.

In addition, there were field visits as part of the meeting.

No recommendations were adopted. On the other hand, a detailed report was drawn up which constitutes a résumé of the problem of community development and is therefore destined to have a wide circulation in the West African countries concerned.

**(b) Tour of West Africa by Community Development Personnel.**

A month's tour has been arranged for twelve officials responsible for community development in West Africa (French Republic and Community four, Ghana three, Liberia two, Nigeria three). They will visit in turn Ghana, a territory of the Community (probably the Ivory Coast), Uganda, and perhaps the Sudan. The United Nations will meet three-quarters of the costs of the tour, which represents a gift of about 10,000 U.S. dollars; it will also provide an expert to act as guide.

The purpose of the tour is clear: to give a small number of people who are directly responsible in this field a practical insight into the methods followed in four countries of Africa, from which they can select the items most readily adaptable to their own purposes. It is for this reason that, contrary to an earlier suggestion, it was decided to restrict this first tour to African countries.

**(c) Training Course in Community Development.**

The Government of Ghana has offered six scholarships of six months for young Africans interested in the problems of community development. This proposal has been very favourably received and the course started in April 1959 (the trainees include an Ethiopian). The experiment may be repeated.

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It is becoming increasingly clear that the techniques of community development constitute one of the most effective means of action in countries which are in the early stages of development. Technical and scientific advances, the rise of an élite, the swift progress of a few urban centres, contribute to the real development of the country only if there are reactions on a wide scale among the masses and especially the rural masses. The principles being laid down, the next thing is to give practical consideration to methods. The Commission seeks to aid every country in Africa in this respect. Indeed it does not confine itself to community development proper. Several activities must be regarded as being related. An account has already been given of the Symposium on Child Welfare. Mention should also be made of

**(d) F.A.O./C.C.T.A. Development Centre for Agricultural Extension in West Africa.**

F.A.O. has proposed to C.C.T.A. the organising of a Centre for the study of problems of agricultural extension. It will be held at Ibadan from 7th to 17th July. Preliminary documents prepared by F.A.O. and by the Governments invited have been circulated (F.A.O. is meeting the greater part of the expenses of delegates from countries in the region). The agenda covers the following points: history of extension work; concept of extension;



organisation of extension services and relations with other services; social aspects; selection and training of personnel.

### **Other Activities of a Regional Nature**

The Fourteenth Session took note of the interest aroused by the series of activities arranged for West Africa. It decided to take up the Secretary-General's suggestion for a similar programme for Central and East Africa. The Secretariat will make proposals for this programme in the next few weeks after consultation with experts in the region and taking account of E.C.A.'s projects. The programme will include a Symposium similar to the Accra one and also a tour of visits as far as possible of the same kind as was organised for those in charge of community development in West Africa.

### **Activities Applying to Africa South of the Sahara as a Whole**

E.C.A. has decided to hold an African Conference on Community Development from 14th to 29th September 1959. The Conference is for countries in the United Nations which receive technical assistance from the latter in this sphere; other E.C.A. Members are also invited. The agenda includes statements on the programmes of the different countries, the structures adopted, training of personnel, financing of programmes, techniques and regional co-operation. The future programme of E.C.A. in this sphere will also be considered. The meeting covers a very wide field; part of the subject-matter was dealt with at the Accra Symposium. A memorandum on C.C.T.A./C.S.A. activities has been forwarded to Addis Ababa for circulation to the participants.

The Fourteenth Session reaffirmed the need to maintain permanent machinery for liaison and the exchange of information in the field of rural welfare. It will be remembered that the French Government made provision for such a Centre until 1957; for material reasons it then had to turn to the Commission with a request for meeting the expenses; definite proposals have been circulated. The British Government for its part has made it known that the University of London Community Development Clearing House would be prepared to take over the same functions on behalf of the Commission against payment of a fixed annual sum. Member Governments will need to reach an early decision so as to enable the Inter-African Centre for Rural Welfare to be re-established in Paris or in London.

The Joint Secretariat has received from various quarters, and in particular from Uganda, requests for information on the development of rural trade, the organisation of vocational schools, the placing of young craftsmen. The Fourteenth Session of the Commission asked the Secretariat to keep in touch with these questions. Comments have also been received from four Member countries suggesting in similar terms the holding of a Specialist Symposium on the subject.

## VI.—EDUCATION

### Technical Education

Of the recommendations of the Second Inter-African Conference on Education (Luanda, 1957), the following are in course of implementation:

- (a) Co-ordination of research on methods of selection applicable to African women.

The Inter-African Correspondent for Psychotechnical Tests, when asked for his views on the subject, replied in the following terms:

“ So far, the testing of African women has received little attention. Vocational guidance has been primarily directed towards the needs of boys. More openings are, however, being provided for African women, particularly in the nursing, teaching, clerical and welfare professions. Whether this calls for special tests is a moot point. It has not been the practice in Western communities to use different tests for boys and girls. The problem in Africa may, however, be rather different.”

Dr. Biesheuvel proposed the adoption of a similar method to that which led to the launching of Joint Project No. 5 (Research on Absenteeism). A meeting of experts, very restricted as to numbers, would afford an opportunity of considering whether it is advisable to devise special tests for women and, if so, of drawing up a programme of research. Each Member Government would then take over responsibility for part of the researches, general co-ordination being in the hands of an expert acting for C.C.T.A., probably the Inter-African Correspondent for Psychotechnical Tests. The Fourteenth Session approved this procedure, not without expressing some doubts as to the need for special tests for women. The Symposium could be held towards the spring of 1960 in Central Africa.

- (b) Simplified methods of vocational guidance capable of being applied by non-specialists.

Asked for his view on this point, the Inter-African Correspondent for Psychotechnical Tests replied:

“ Experience with classification tests for mine labourers has shown that it is possible to design tests in such a way that the non-specialist can apply them. The construction of such tests, however, is a technical task; and the recommendation rightly emphasises that this task should be entrusted to specialised institutes.”

The Fourteenth Session adopted these conclusions and decided, in accordance with Dr. Biesheuvel's suggestions, that the question should be studied at the Symposium mentioned above, in 1960.

- (c) Comparative study of methods and nomenclatures applied in the field of technical education.

The Joint Secretariat requested one of the liaison officers for education

to co-ordinate the work in this matter. Mr. Davies, of Salisbury, has started the necessary enquiries.

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Mention should also be made of the U.N.E.S.C.O. project for a study centre at Accra in March or April 1960, for technical education inspectors and heads of technical colleges. Three topics in particular would be studied: assessment of needs, administrative structure, selection and training of teaching staff.

### **Education for Women**

As recommended by the Council at its Ninth Meeting, the Commission decided that the Third Inter-African Conference should be on the education of women. The Panel of Correspondents for Education should therefore be chosen with a view to preparing for that meeting and to possible participation in limited work in this field until 1962 or 1963, the year of the Conference. U.N.E.S.C.O. has also adopted this subject to figure among its first activities in Africa. The two organisations will co-ordinate their efforts. U.N.E.S.C.O. intends to hold a meeting at Lagos, probably in 1960, on the access of women to education, to be preceded by a survey in 1959.

### **Higher Education**

Dr. Verdier, Assistant Scientific Secretary, who was Professor of Chemistry at the University of Natal, and who is therefore particularly concerned with matters relating to higher education, has prepared a long memorandum for C.S.A. In it, Dr. Verdier recalls the shortage of qualified workers in Africa, the high cost of bringing in workers from abroad, and the general world shortage of engineers and staff with advanced scientific training. He goes on to stress the inadequate numbers of African students and the often unsatisfactory orientation of their studies. Lastly, he lists methods of tackling these problems: training in and outside of Africa, increase in the number of establishments or extension of the latter, general co-ordination.

The matters raised in the memorandum are unquestionably of great importance; nobody can deny the gravity of the problem. Dr. Verdier feels that C.S.A. should tackle it and suggests that action should comprise the following stages:

(1) A list should be drawn up of definite questions relating to the problem.

(2) A list should be made of individuals and organisations to whom these questions should be sent, including rectors of universities, heads of technical colleges and other experts.

(3) Subsequently, the universities most closely concerned should be asked to set up small committees to study these questions.

(4) A list of suggestions or recommendations which might be made to universities should be drawn up.

(5) If need be, direct personal contact should be made with the universities.

Such action would require the approval of the Commission, which would instruct the Joint Secretariat. It would be for C.S.A. to take the initiative, however. On the basis of its suggestions and proposals a report to the Commission should be drafted, for discussion at the next Session at Tananarive.

Dr. Verdier is well aware of the extent of the problem. He is also aware that it has already been discussed many times at national level and that sometimes, indeed, the scope of the discussions has been widened to include establishments or individuals using the same language. He considers, however, that the problem is not adequately covered and that the work already accomplished at national level should now be co-ordinated by the Commission at inter-African level.

Up to the present C.C.T.A./C.S.A. has not gone very far in the field of education, even in that of specialised higher education. That does not imply that it ought not do so; but it should act with caution. As a practical step, before any decision is taken by C.S.A., the Assistant Scientific Secretary suggests that a small group might meet during the Tenth Meeting of C.S.A. Those Members of C.S.A. with special experience in this field have been consulted; their comments will be given in a note to be submitted to C.S.A. at Kampala.

### **Other Problems of Education**

U.N.E.S.C.O. is to hold a Seminar at Khartoum at the end of 1959, on the Problems of Educational Statistics.

It has been recommended from more than one quarter in recent months that English-speaking African countries should be asked to facilitate the teaching of French and vice versa. A programme of this kind raises complex problems of technical assistance; it is not just a matter of sending out a few teachers from England or France, but of proceeding to exchanges, between the African countries, of a relative large number of readers, teachers, schoolmasters, etc. It is not impossible that C.C.T.A./F.A.M.A. may be called upon to assist in carrying out this vast project if it should take a more precise form.

It may also be noted that at a meeting of the Committee of F.A.M.A. the hope was expressed that C.C.T.A. would press for the conclusion of agreements on mutual recognition of degrees and diplomas.

**VII.—LABOUR****Research on Absenteeism and Labour Turn-over  
(Joint Project No. 5)**

As C.S.A. has already been informed, the Commission has launched a vast joint enquiry on absenteeism and labour turn-over in Africa. This enquiry is being carried out within the context of the technical plan drawn up by the Committee of Experts at Salisbury in 1956. It is being conducted in each country with the resources made available by the local authorities, on lines laid down jointly by the experts, and in undertakings spread over the Member countries in conformity with the experts' plans. I.L.I. is collating the results.

A Meeting of Experts took place at Brazzaville in February to decide final details regarding questionnaires, methods and definitions. The enquiry has now started in the Belgian Congo, the Federation of Rhodesia and Nyasaland, the countries of the French Community, Angola and Mozambique, Nigeria, British East Africa, and the Union of South Africa.

The Commission confirmed that the next Labour Conference would be devoted largely to the results of the enquiry. The Inter-African Committee made definite arrangements at its meeting in June. It recommended that a Symposium consisting of research directors in Europe should be held in the second half of April 1960, to agree on the presentation of the reports for use as basic documentation for the Conference; the Director of I.L.I. may himself prepare a synthesis.

This is a considerable undertaking, for which the working methods of the Commission are especially apt. The enquiry tackles one of the grave problems affecting African development. The sub-continent suffers from a high degree of labour instability, which is due to objective and subjective causes worthy of scientific study and elucidation. Such an enquiry—which will cover no less than thirteen different countries—represents a not inconsiderable contribution to a better knowledge of the basic facts in Africa.

**Sixth Inter-African Labour Conference**

The Conference will be devoted in the main to absenteeism. Its agenda, however, includes three other items by virtue of the recommendations of the Preliminary Meeting of Experts at Geneva in June:

- (2) Labour migration;
- (3) Labour problems connected with the carrying out of major projects in Africa;
- (4) Safety and health at work.

The last item will be discussed by specialist delegates on the basis of documentation assembled in advance, for which four rapporteurs will be

responsible. Point (3) will be the subject only of preliminary discussion in general terms.

Point (2), on the other hand, will constitute a substantial part of the Conference. Labour migration in Africa is on a scale unknown in any other continent. Yet no systematic series of studies has ever been made on the matter. Mr. Haighton has accordingly drawn up a three-part programme of publications on the subject:

Sociological background, cause of labour migration and effects on areas of origin of migrants.

Organisational problems of labour migration in present conditions in Africa: transport, employment, welfare services, repatriation, etc. Articles will be published on practical solutions evolved or envisaged in South, Central, East and West Africa; an article by Dr. Jean Rouch will deal with the lessons to be drawn from the enquiry on migration in West Africa now being carried out under his direction (Joint Project No. 3).

A final article, edited by the Institute, and surveying the whole ground in the light of these contributions, will have a comprehensive bibliography attached.

For the Conference itself, a questionnaire will be circulated by the Director of I.L.I. to enable delegates to work on the basis of replies sent by Governments.

The Conference will take place in October 1960, probably at Dakar. It will provide an opportunity for Government delegates, and all such others as Member Governments may wish to include in their delegations, to hold detailed technical discussions on strictly defined problems.

### **Inter-African Labour Institute (I.L.I.)**

The Director of the Institute, Mr. Haighton, has displayed his usual activity. He has made three tours in West and East Africa. The Institute has continued its publications. For the coming year it has been recommended to cover the following subjects, apart from problems to be discussed at the Conference: unemployment in towns, development of social security systems (with particular reference to industrial injuries), training of African supervisory personnel.

It will also be noted that a new Assistant Director has been appointed—Mr. de Lusignan, Licencié-ès-Lettres, diplômé d'études supérieures d'histoire. Mr. de Lusignan has published several reports on co-operative movements and on the "paysannat". He has been working hitherto at the Commissariat Général de la Productivité in Paris.

### **Relations with I.L.O.**

Thanks to the sustained efforts of I.L.I. and the excellence of its work, relations with the International Labour Office have steadily improved. The

establishment of the International Labour Organisation's Field Office at Lagos and the convening of the African Advisory Commission to meet for the first time in Luanda, in 1959, conduce to the study by the International Labour Office of the practical conditions of its work in Africa and to a better appreciation of co-operation with C.C.T.A.

The project for a joint study of the adaptation to African usage of the international classification of occupations was referred to in the chapter on statistics. A system of regular consultation between Mr. Haighton and the Geneva and Lagos Offices has been established. Mr. Haighton attended the International Labour Conference as usual, and will be present at the Advisory Commission at Luanda.

The Assistant Director-General of I.L.O. submitted to C.C.T.A. the draft of an Agreement between the two organisations, which was approved by their competent organs after some amendments. This Agreement will be signed by the Director-General of I.L.O. and the Secretary-General of C.C.T.A. within a few weeks. The result has been welcomed with enthusiasm by Member Governments inasmuch as it will eliminate any risk of future misunderstanding and will promote the development of fruitful co-operation.

### VIII.—CARTOGRAPHY

#### **Inter-African Scientific Correspondent for Cartography**

In accordance with a recommendation adopted by the Eighth and again by the Ninth Meeting of C.S.A., Professor Jackson has been appointed Inter-African Scientific Correspondent for Cartography. Professor Jackson has already rendered distinguished service to the Commission in the compilation of the Climatological Atlas (Joint Project No. 1). His appointment confirms a *de facto* situation, the Joint Secretariat having turned to him repeatedly for advice on questions concerning cartography.

#### **Basic Maps for Cartographic Work Produced under the Auspices of the Commission**

As the Scientific Council was informed at its Ninth Meeting, the Trigonometric Survey of the Union of South Africa, at the request of Professor Jackson, offered to produce, at minimum cost, basic maps which could be made available to the Commission's various bodies and to specialists engaged in cartographic projects approved by C.C.T.A. Such maps would be compiled with the help of basic maps drawn, or to be drawn, for the Climatological Atlas. They would be overprinted, employing a very simple technique, enabling non-specialists to use them without difficulty.

As was pointed out in making this offer, it too often happens, when a specialised cartographic project is submitted, that basic maps are redrawn specially for that project. This results in waste of time and money, and is particularly undesirable in view of the limited funds available for cartographic

projects. It may also lead to difficulties in the comparison of specialised studies, more especially when it is wished to establish correlations.

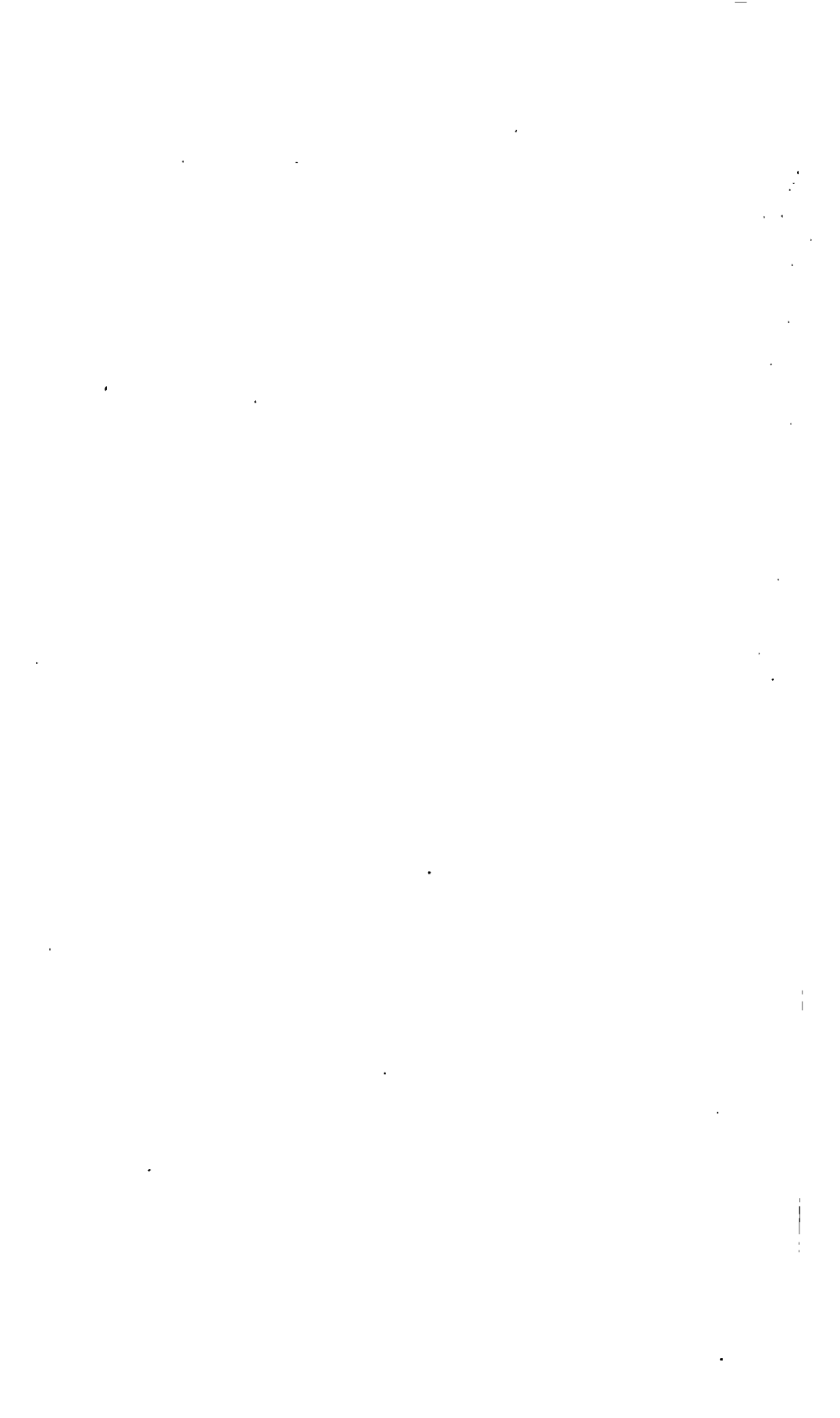
The Fourteenth Session recommended that the matter should be discussed at the Third Meeting of the Inter-African Committee on Maps and decided that, in the meantime, the Inter-African Scientific Correspondent should make the necessary arrangements for the compilation and distribution of such maps.

### **Third Meeting of the Inter-African Committee on Maps and Surveys**

The Scientific Council will be sorry to learn of the death of Professor Victor Hugo de Lemos, Rector of the University of Lisbon, who was Chairman of the Committee on Maps. The loss of this distinguished scholar will be a sad blow to all who came in contact with him. Member Governments have already expressed their profound regret at this loss, which removes so eminent a personality.

The Committee will, nevertheless, try to meet in Lisbon towards the end of 1959 or at the beginning of 1960. The agenda should include in particular the final draft of the Committee's statutes which, as several governments have pointed out, require amendment in certain respects. No doubt the Committee will also study questions raised during recent months such as the transcription of geographical names on maps, the standardisation of conventional symbols, basic maps, etc.





## MEETINGS HELD UNDER THE AUSPICES OF C.C.T.A./C.S.A. FROM JULY 1958 TO JULY 1959

	<i>Place</i>	<i>Date</i>
<b>Meetings of the Commission and the Scientific Council</b>		
Fifteenth Meeting of the Executive Committee of C.S.A. . . . .	Ibadan	3rd-5th August, 1958
Ninth Meeting of C.S.A. . . . .	Accra	7th-16th August, 1958
Sixteenth Meeting of the Executive Committee of C.S.A. . . . .	Monrovia	13th-14th February, 1959
Fourteenth Session of C.C.T.A. . . . .	Monrovia	16th-26th February, 1959
First Meeting of F.A.M.A. . . . .	Monrovia	27th-28th February, 1959
<b>Inter-African Conferences</b>		
Second Forestry Conference . . . . .	Pointe-Noire	3rd-11th July, 1958
Second Conference on Housing and Urbanisation . . . . .	Nairobi	19th-29th January, 1959
<b>Symposia</b>		
Symposium on Animal Trypanosomiasis . . . . .	Luanda	23rd-24th July, 1958
Symposium on Grain Legumes (F.A.O./C.C.T.A./W.H.O.) . . . . .	Bukavu	10th-15th November, 1958
Regional Meeting of Economists . . . . .	Ngor	23rd-26th November, 1958
Regional Meeting of Veterinary Administrators Meeting on Research into Absenteeism (Joint Project No. 5) . . . . .	Kaduna	1st-5th December, 1958
First Technical Cacao Meeting (organised by F.A.O. in association with C.C.T.A.) . . . . .	Brazzaville	4th-6th February, 1959
Regional Meeting on Medical Co-operation . . . . .	Accra	8th-15th February, 1959
Symposium on Agricultural Statistics (C.C.T.A./F.A.O.) . . . . .	Bangui	9th-14th February, 1959
Meeting on St. Pauls Wilt of the Coconut Palm . . . . .	Accra	8th-22nd March, 1959
Symposium on Child Welfare (C.C.T.A./C.I.E.) . . . . .	Lomé	24th March, 1959
Regional Symposium on Community Development in West Africa . . . . .	Lagos	25th-31st March, 1959
C.C.T.A./W.H.O. Leprosy Meeting . . . . .	Accra	6th-15th April, 1959
	Brazzaville	14th-21st April, 1959
<b>Preparatory Meetings</b>		
For the Third Inter-African Soils Conference . . . . .	Paris	29th-30th September, 1958
For the C.C.T.A./U.N.E.S.C.O. Symposium on the Ecology of Tropical Soils . . . . .	Paris	4th November, 1958
For the Third Inter-African Conference on Medical Co-operation . . . . .	Lisbon	24th April, 1959
For the Sixth Inter-African Labour Conference . . . . .	Geneva	2nd and 8th June, 1959
<b>C.S.A. Specialist Meetings</b>		
Physical Hydrology . . . . .	Bukavu	7th-12th July, 1958
Roads . . . . .	Lourenço Marques	25th-30th August, 1958
Virus Diseases and Rickettsiosis . . . . .	Entebbe	3rd-10th June, 1959

	<i>Place</i>	<i>Date</i>
<b>Training Centres and Seminars</b>		
Seminar on Brucellosis (C.C.T.A./F.A.O./W.H.O.)	Elisabethville	16th-25th July, 1958
Seminar on Mental Health (C.C.T.A./W.H.O.)	Brazzaville	26th November-4th December, 1958
Seminar on Nutrition (F.A.O./W.H.O. in association with C.C.T.A.)	Lwiro	18th-29th May, 1959
<b>Meetings of Committees, Bureaux, Councils of Management, Panels of Correspondents, etc.</b>		
<b>Geology (Joint Meeting of the three Regional Committees)</b>		
F.A.M.A. Committee (First Meeting)	Leopoldville	14th-24th July, 1958
I.A.C.E.D. Fifth Meeting	London	17th July, 1958
I.B.E.D., Council of Management (Seventh Meeting)	Luanda	21st-22nd July, 1958
I.S.C.T.R., Seventh Meeting	Luanda	25th-26th July, 1958
Phytosanitary Commission (Third Session)	Brussels	25th-30th August, 1958
Budgetary Committee	London	22nd-26th November, 1958
F.A.M.A. Committee (Second Meeting)	London	3rd-6th November, 1958
Statistics Committee, Fifth Meeting	London	7th November, 1958
Housing Committee, Fourth Meeting	Lisbon	14th-21st November, 1958
B.I.S., Council of Management (Eleventh Meeting)	Nairobi	30th-31st January, 1958
Committee for Social Sciences (Sixth Meeting)	Paris	16th-17th April, 1959
Soils, Sub-Committee of Pedologists (S.A.R.C.C.U.S.)	Lisbon	21st-24th April, 1959
Soils, E.A.R.C.C.U.S., Third Meeting	Pretoria	30th April-6th May, 1959
I.L.I., Advisory Committee (Ninth Meeting)	Usumbura	11th-16th May, 1959
	Geneva	1st, 2nd, 5th and 8th June, 1959
F.A.M.A. Committee, Third Meeting	London	4th June, 1959
<b>Working Parties</b>		
C.C.T.A. Programmes in fields of interest to F.A.O.	London	1st-2nd October, 1958
Contributions to the Phytosanitary Commission	London	9th October, 1958
C.C.T.A. Programmes in fields of interest to the United Nations Economic Commission	London	10th December, 1958
Invitations to Annual Sessions	London	9th April, 1959
Climatological Atlas	London	4th May, 1959

**MEETINGS TO BE HELD DURING THE SECOND HALF OF 1959, IN 1960  
AND IN 1961 UNDER THE AUSPICES OF C.C.T.A./C.S.A.**

	Place	Date	Year	
			1959	1960 1961
<b>Meetings of the Commission and the Scientific Council</b>				
Seventeenth Meeting of the Executive Committee of C.S.A.	Kampala	10th-11th September	x	
Tenth Meeting of C.S.A.	Kampala	14th-24th September	x	
Eighteenth Meeting of the Executive Committee of C.S.A.	Tananarive	12th-13th February		x
Fifteenth Session of C.C.T.A.	Tananarive	15th-25th February		x
Second Meeting of F.A.M.A.	Tananarive	26th-27th February		x
<b>Inter-African Conferences</b>				
Third Soils Conference	Dalaba	2nd-12th November	x	
Third Conference on Medical Co-operation	Sa da Bandeira or Nova Lisboa	September		x
Sixth Labour Conference	Dakar	October		x
Conference on Malaria	Yaoundé	November		x
First Conference on Hydrology	Nairobi	16th-26th January		x
Fourth Conference on Nutrition	? Belgian Congo ? Cameroun			? x
<b>Symposia</b>				
Agricultural Extension Development Centre (F.A.O./C.C.T.A.)	Ibadan	7th-17th July	x	
Symposium on Helminthiasis	Muguga	23rd-25th July	x	
Inter-territorial Meeting of Veterinary Administrators	Nairobi	29th-30th September	x	
Symposium on Tropical Vegetation in Relation to the Soil (C.C.T.A./U.N.E.S.C.O.)	Adiopodoumé	20th-24th October	x	
Meeting on Botanical Geography	Adiopodoumé	25th October	x	
Symposium on Marine Biology and Sea Fisheries on the East Coast of Africa	Cape Town	Beginning		x
Symposium on Soil Stabilisation	Kenya	March		x
Symposium on Research into Absenteeism (Joint Project 5)	Europe	April		x
Symposium on Bilharziasis (W.H.O./C.C.T.A.)	? Mozambique	April		x
Meeting on the Use of the Results of the Study on Migrations (Joint Project 3)	Abidjan	? May		x
Symposium on Quelea (C.C.T.A./F.A.O.)	West Africa	Spring		x
Symposium on Selection of African Women and Simplified Methods of Vocational Guidance	? Gabon	Spring		x
Symposium on the Table Banana	Abidjan			x
Symposium on Thunnidae (C.C.T.A./F.A.O.)	? East Africa	Beginning of summer		x
Symposium on Agricultural Research	? Belgian Congo	Summer		x
Symposium on Poultry Disease	Leopoldville	July		?x

	Place	Date	Year		
			1959	1960	1961
<b>Symposia</b>					
Symposium on Tuberculosis (W.H.O./C.C.T.A.)	Nairobi	August		x	
Symposium on Community Development in East Africa.				x	
Symposium on Coconut Palm Diseases (C.C.T.A./F.A.O.?)	Lomé		?x	?x	
Symposium on Social Aspects of Urbanisation (C.C.T.A./U.N.E.S.C.O.?)			?x	?x	
Symposium on Rural Trades			?x	?x	
Symposium on a Crop (?) (C.C.T.A./F.A.O.)					?x
C.C.T.A./F.A.O. Symposium on Stored Food Products					?x
<b>Preparatory Meetings</b>					
For the First Inter-African Conference on Hydrology	London	Beginning		x	
For the Fourth Inter-African Conference on Nutrition				x	
<b>Specialist Meetings</b>					
Basic Psychological Structure of African Populations	Tananarive	27th August-3rd September	x		
Hydrology (problems of catchment areas)	Yaoundé	16th-21st November	x		
Open Forests	Ndola	17th-23rd November	x		
Influence of Social Changes on Mental Health					x
Technology (treatment of water)	? Zaria				x
Results of the International Geophysical Year (C.C.T.A./C.S.A.G.I.)					x
Specialist Meeting on Coconut Palm Diseases (?) (C.C.T.A./F.A.O.?)			?x	?x	
Meeting of Representatives of Fishery Institutes on the West Coast of Africa			?x	?x	
Architecture and Structure of Communities			?x	?x	
Ankylostomiasis (C.C.T.A./W.H.O.)					?x
Traditional Psychotherapy					?
<b>Training Centres and Seminars</b>					
Training Centre for the Population Census in 1960 (France/F.A.M.A.)	Bangui-Bambari	6th July-15th August	x		
Training Centre on Helminthiasis	Muguga	27th July-8th August	x		
Training Centre on Agricultural Co-operatives (I.L.O./F.A.M.A./F.A.O.)	Nairobi	10th August-19th September	x		
Training Centre on the Medical Uses of Radio-isotopes (F.A.M.A./W.H.O.)	Leopoldville	June		x	
Seminar on Public Health (C.C.T.A./W.H.O.)	?	June		x	
Training Centre on Artificial Insemination	?	July			x
Training Centre on Poultry Farming in West Africa					

	Place	Date	Year		
			1959	1960	1961
<b>Meetings of Committees, Bureaux, Councils of Management, Panels of Correspondents, etc.</b>					
Linguistics Committee, First Meeting	Brussels	29th June-1st July	x		
Mechanisation of Agriculture, First Meeting	Silsoe	1st-2nd July	x		
I.B.E.D., Council of Management, Eighth Meeting	Muguga	17th-18th July	x		
I.A.C.E.D., Sixth Meeting	Muguga	20th-22nd July	x		
Budgetary Committee	London	October	x		
Phytosanitary Commission, Fourth Session	London	October	x		
S.P.I., Council of Management, Fourth Meeting	Dalaba	November	x		
Statistics Committee, Sixth Meeting	Bissau	December or January	x	x	
Soils, S.A.R.C.C.U.S., Seventh Meeting	Nyasaland	Beginning		x	
Maps and Surveys Committee, Fifth Meeting	Lisbon			x	
B.I.S., Council of Management, Twelfth Meeting	Paris	April		x	
I.B.E.D., Council of Management, Ninth Meeting	Leopoldville	July		x	
I.A.C.E.D., Seventh Meeting	Leopoldville	July		x	
Nutrition, Panel of Correspondents, Eighth Meeting	? Washington	September		x	
I.S.C.T.R., Eighth Meeting	?	Summer		x	
Geology, West Central Committee	Northern Nigeria			x	
Soils, E.A.R.C.C.U.S., Fourth Meeting; C.R.A.C.C.U.S., Fifth Meeting; S.A.R.C.C.U.S., Eighth Meeting (Joint Meeting ?)	Leopoldville				? x
Archaeological Studies Niger-Tchad-Niger, Panel of Correspondents					?
Housing Committee, Fifth Meeting				? x	? x
Ethnohistory, Panel of Correspondents				?	?
<b>Working Groups</b>					
Organisation of Co-operation in the Field of Animal Husbandry	Muguga	16th July	x		
Organisation of the Annual Session	London	October	x		
Comparative Study of National Accounting Systems (Joint Project 6)	London	December	x		

**C.C.T.A./C.S.A. WAS REPRESENTED DURING THE SECOND HALF OF  
1958 AND IN 1959 AT THE FOLLOWING MEETINGS**

Association of African Geological Surveys . . . . .	Leopoldville	July, 1958	Dr. HAUGHTON
Conference on Weed Control . . . . .	Livingstone	July, 1958	Dr. RUSSELL
International Meeting "Cinema and Africa South of the Sahara" . . . . .	Brussels	July, 1958	Prof. VAN DEN BERGHE
Third Conference of Hydrologists of East Africa and the Federation of Rhodesia and Nyasaland . . . . .	Entebbe	August, 1958	Dr. RUSSELL
Fifth International Congress on Protohistory . . . . .	Hamburg	August, 1958	Prof. LEBEUF
International Congress on Tropical Medicine and Malaria . . . . .	Lisbon	September, 1958	Prof. FRAGA DE AZEVEDO, Prof. VAN DEN BERGHE
Seventh Congress of the International Union for Conservation of Nature and Natural Resources . . . . .	Athens and Delphi	September, 1958	Prof. MONOD, M. GUILLOTEAU
W.H.O. Malaria Eradication Meeting for South-East Africa . . . . .	Lourenço Marques	September, 1958	Mr. HENDRICKX
Eighth Session of the W.H.O. Regional Committee for Africa . . . . .	Monrovia	September, 1958	Dr. LOUIS
Second Session of I.A.E.A. . . . .	Vienna	September, 1958	Mr. ENSOR
Tenth Meeting of the F.A.O. Council . . . . .	Rome	October, 1958	Mr. GREENWOOD
Fourteenth Session of the U.N.E.S.C.O. Committee for Arid Zones . . . . .	Teheran	October, 1958	Prof. AUBERT
F.A.O./O.I.E. Panel of Experts on Ticks . . . . .	London	November, 1958	Mr. GUYAUX
F.A.O./U.N.E.S.C.O. Meeting on the first results of the Desert Locust Ecological Survey of Breeding Areas . . . . .	Rome	December, 1958	Mr. MALLAMAIRE
Twenty-third Session of the W.H.O. Executive Committee . . . . .	Geneva	January, 1959	Mr. ENSOR
Committee for Protection of Nature in West Africa . . . . .	Dakar	March, 1959	Prof. MONOD
East African Meeting of Pedologists . . . . .	Kampala	April	Dr. d'HOORE
Twelfth W.H.O. Assembly . . . . .	Geneva	June, 1959	Mr. GREENWOOD
Forty-third Session of the International Labour Conference (I.L.O.) . . . . .	Geneva	June, 1959	Mr. HAUGHTON
Thirty-first Session of the F.A.O. Council . . . . .	Rome	June, 1959	Mr. GREENWOOD
Seventh Congress of the International Catholic Child Bureau . . . . .	Lisbon	June, 1959	Dr. V. M. PAIXAO
Meeting of the U.N.E.S.C.O. Subcommittee on Arid Zones . . . . .	Paris	June, 1959	Dr. FOURNIER
Symposium organised by the International Population Union . . . . .	Paris	July, 1959	Dr. MARTIN
Meeting of the Pan-African Congress on Prehistory, Subcommittee on Geology, Paleontology and Climatology . . . . .	Leopoldville	August, 1959	Dr. D. CLARK, Prof. LEBEUF
Meeting of the International Population Union . . . . .	Vienna	August, 1959	Dr. MARTIN
World Meeting on the Biology of the Sardine . . . . .	Rome	September, 1959	Dr. ROUX

## LIST OF PUBLICATIONS ISSUED OR TO BE ISSUED IN 1959

### Scientific Publications

- 27.—*Eichhornia Crassipes* (Leopoldville, 1957).  
 28.—Radio-Isotopes (Pretoria, 1957).  
 29.—Cartography of Vectors of Diseases (Lwiro, 1957).  
 30.—Inventory of Economic Studies (Joint Project No. 4).†  
 31.—Stored Food Products (Salisbury, 1956).  
     *Quelea* (in roneotyped form).  
     Training Course on Agricultural Statistics (C.C.T.A./F.A.O./France) (Bingerville, 1957) (in roneotyped form).  
 32.—Ninth Meeting of C.S.A. (Accra, 1958).  
 33.—Physical Hydrology (Bukavu, 1958).  
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 Second Meeting of the Inter-African Statistics Conference (Lourenço Marques, 1957).  
 Second Meeting of the Inter-African Forestry Conference (Pointe-Noire, 1958).†  
 Second Meeting of the Inter-African Conference on Housing and Urbanisation (Nairobi, 1959).†  
 Publication in Portuguese of the final documents of the Inter-African Forestry Conference (Pointe-Noire, 1958)† and of the Inter-African Conference on Housing and Urbanisation (Nairobi, 1959).†

### Reports of Regional Committees for Geology

- South and East-Central (Tananarive, 1957).  
 Joint Meeting of the Three Regional Committees for Geology (Leopoldville, 1958).

† To be issued shortly.



## Other Publications

C.C.T.A. Folder.

C.C.T.A. short Pamphlet.†

Constitution of C.C.T.A., C.S.A. and F.A.M.A.†

Constitution of F.A.M.A.

Pamphlet on F.A.M.A.

First Annual Report of F.A.M.A.

List of Specialists in the Phytosanitary Field.

"Science in the Development of Africa" by E. B. Worthington (Joint Project No. 2);  
English and French versions.

Symposium on Animal Trypanosomiasis.†

Bibliography of Jurassic and Cretaceous Systems.

Climatological Atlas (Joint Project No. 1).†

† To be issued shortly.

TENTH MEETING OF THE SCIENTIFIC COUNCIL  
KAMPALA, 14TH TO 24TH SEPTEMBER 1959

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## LIST OF PARTICIPANTS

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- Professor L. VAN DEN BERGHE . . . Directeur Général de l'I.R.S.A.C., Lwiro, Kivu,  
Congo Belge.

(d) DECIDES to re-elect as full Members, as from 1961 :

Dr. BATES  
 Professor FORDE  
 Professor LEDUC  
 Dr. RUSSELL  
 Professor VAN DEN BERGHE

and re-elects Professor MILLOT as Vice-Chairman of the Council.

(e) DECIDES to elect as Associate Members for a period of three years, as from 1961 :

Mr. BINNS (Veterinary Sciences)  
 Dr. HADDOW (Medicine)  
 Dr. OBERMULLER (Geology)  
 General VAUCEL (Medicine)

and, subject to confirmation by the Member Governments :—

Professor G. W. WILLIAMS (Economics),  
 University College of Ghana,  
 Legon, Accra.

#### IV. Continuity of the Council's Action

(a) The Council NOTES with satisfaction the intention expressed by the Fourteenth Session of the Commission to take the necessary steps to ensure that Members of the Council should receive fair compensation for the time devoted by them to activities undertaken on behalf of C.S.A. Although it CONSIDERS that this procedure would not provide a solution to all problems arising in this connection, it REQUESTS the Secretary-General, in accordance with recommendation of the Fourteenth Session, to submit a proposal to the Commission on the following lines :

Members or Associate Members of the Council should be offered an honorarium of approximately £10 for each day devoted to some definite activities undertaken on behalf of C.S.A., with the exception of the annual meeting.

(b) The Council ATTACHES particular importance to the organisation of visits and field investigations which would enable qualified persons to examine a given technical problem in a region of Africa South of the Sahara, either to follow the implementation of a recommendation or to ascertain the facts in connection with that problem or to submit precise proposals to meet a need.

The Scientific Secretaries would be the most suitable persons to carry out such missions, in so far as they fall within their technical competency. The Council RELIES on the Commission to determine the budgetary implications, if need be. When necessary, however, these missions could be entrusted, on behalf of the Council, to certain Members or Associate

Members, who would then receive the Honorarium provided for in paragraph (a) above, or even to persons not connected with the Council, when an honorarium would be agreed by special arrangement, as in the case of a Joint Project, for instance.

(c) The Council is AWARE that the measures recommended above constitute only a temporary solution and that the responsibilities of its members are increasing year by year. It CONSIDERS, however, that one of its essential features is that of being composed of persons actively and personally engaged in work of interest to Africa and that its Members cannot be expected to forego their normal activities in order to undertake work on behalf of C.S.A.

### V. Executive Committee

(a) The Council NOTES and APPROVES Recommendation II of the Seventeenth Meeting of the Executive Committee, whereby this latter will hold strictly closed Sessions in the future and not necessarily keep any records of its debates.

(b) The Council CONSIDERS that when a Member of the Executive Committee is unable to attend a meeting of this Committee, this member should be replaced by another Member of the Council. It REQUESTS the Executive Committee, in consultation with the absent Member, to select, in each case, the Member of C.S.A. whom it considers best qualified.

### VI. Eleventh Meeting of the Council

The Council WELCOMES with thanks the offer made by the Government of the Union of South Africa and AGREES to hold its Eleventh Meeting in Cape Town at the very beginning of September 1960. The Secretariat will provide the Executive Committee with the necessary information to enable it to decide on the exact dates before the end of 1959.

### VII. F.A.M.A.

The Council NOTES with interest the statements made by the Secretary-General in respect of the gradual increase in the activities of F.A.M.A. It REAFFIRMS its desire to make every effort to assist the Foundation in its work.

The Council DRAWS THE ATTENTION of Member Governments to the lack of adequate information regarding the methods and objectives of the Foundation and the results it has achieved.

The Council shares the views of the Secretary-General and of the Secretary of F.A.M.A. in respect of the value of Training Centres organised by the Foundation, in consultation with the Specialised Agencies of the United Nations. After hearing various reports, it STRESSES the need to ensure adequate qualifications among those attending the courses and

The value of meetings and the benefit to be derived therefrom depend to a large extent on the qualifications of the delegates and their knowledge of the problems. They must be chosen by each country from persons who, in the course of their work and the exercise of their duties, have acquired real authority and who, within the framework of their normal activities, are able to derive the greatest benefit from the work of the Commission. The Council **DRAW**S the particular attention of Governments to this recommendation, for it sometimes feels that consideration of administrative rank or functions in a civil service play too great a part. Governments should not hesitate to call upon the most qualified specialists, whether they are employed in an administrative service, research institutes, universities, or even in private undertakings. The quality of the work of the Commission depends to a large extent on these individuals.

## **XII. Panels of Correspondents**

The Commission has decided to make use of the system of panels of correspondents to an even greater extent than in the past. These correspondents are responsible for establishing direct links between research workers, technical services, etc., concerned with this same subject. Provided they are properly chosen for their qualifications, and not according to their rank, the Council **CONSIDERS** that exchange of experience between them will prove most fruitful.

The Council **STRESSES** the fact that it is imperative that the activities of each panel of correspondents should be co-ordinated by an active, qualified scientist, wholly devoted to his task. Failing such a stimulating influence there is a risk that a panel would remain dormant.

The Council **RECOMMENDS** that, as far as possible, these correspondents should be included in government delegations at meetings dealing with subjects within their discipline.

## **XIII. Meetings of Research Workers in Particular Disciplines**

On several occasions in the course of the year meetings of research workers in a particular discipline were suggested. The object of such meetings is to compare the structure of research organisations to promote better co-ordination of research and sometimes even to consider the possibility of joint work.

While not suggesting that this should become a general practice, the Council **CONSIDERS** that this type of meeting should be encouraged.

## **XIV. Exchange of Views on the Organisation of Research Work.**

The Council **CONSIDERS** it advisable to plan, in a not too distant future, an exchange of views between directors of the major research institutes in Africa dealing with a wide range of sciences, on their organisation and methods of work.

**PART 2. NATURAL RESOURCES****XV. Symposium on the Organisation of Agricultural Research**

The Council gave further consideration to the possibility of organising a Symposium in 1960 on agricultural research in Africa South of the Sahara.

The holding of this Symposium was recommended at the Ninth Meeting of the Council and was approved by the Commission at its Fourteenth Session. It should provide an opportunity for more detailed discussion of the subject than can result from a mere distribution of the useful information collected by the Scientific Secretariat. It should, indeed, be considered as a sequel and a conclusion to this documentation. The object of this Symposium is not to establish an identical pattern applicable in all cases, but to provide people responsible for agricultural research with information on the various methods for dealing with the different organisational problems which arise in this field.

Such a comparison of information is particularly appropriate at a time when a number of new African States are considering the reorganisation of their research services.

The Symposium should limit its work to agricultural research proper, to the exclusion of veterinary research. The Council therefore **RECOMMENDS** the adoption of the following agenda :

(i) Definition of the objectives of the research work of agricultural research organisations.

(ii) Structure of agricultural research organisations :

(1) General agricultural research and specialised research on individual crops.

(2) Relation between agricultural research and research in animal husbandry and hydrology.

(3) Distribution of research work between central, regional, local and pilot stations.

(iii) Liaison :

(1) With basic research centres and all organisations where research work is undertaken in or outside Africa.

(2) With technical and administrative departments, particularly those responsible for agricultural extension.

(iv) Basic and advanced training of research workers outside and inside agricultural research organisations.

**XVI. Conservation of Nature**

The Council **WELCOMES** the many initiatives now taken to draw the attention of Governments concerned to the importance of problems arising from the destruction or mismanagement of natural resources in Africa.



(a) Following upon the decision of the Commission, it **RECOMMENDS** that Professor Monod should be appointed Inter-African Scientific Correspondent for the Conservation of Nature and that in this capacity he should be responsible for ensuring continued liaison with the appropriate national organisations in Africa and with the international organisations, particularly with I.U.C.N. (International Union of Conservation and Utilisation of Nature).

(b) The Council **CONSIDERS** that the proposal made by Dr. Darling (Vice-President of the Conservation Foundation, New York), to hold a Conference in the third quarter of 1960 on the conservation of natural resources in Africa and its relation with the economic development, land use policy and nutritional policy, is of the greatest interest, as regards both the spirit in which it would be promoted and time at which it would be held. The Council **RECOMMENDS** that, as far as materially possible, the Commission should give active support to the holding of this Conference and **EXPRESSES THE HOPE** that it will achieve its objects, i.e. to draw the attention of Government circles to the problem as a whole and to the long-term benefit that the populations will derive from a well considered policy of wild life conservation.

(c) The Council **HAS LEARNT** with great interest that a recent meeting on the problems of wild fauna in Central and East Africa adopted a resolution in respect of the establishment of a permanent bureau, possibly in conjunction with I.B.E.D., at Muguga, to cover the problems of conservation and management of wild life. It **EXPRESSES THE HOPE** that the Conference referred to in paragraph (b) above will lead to the establishment of such a bureau. It would, of course, be necessary to change the functions of the Inter-African Correspondent accordingly.

(d) Finally, the Council **NOTES** the views expressed by several members who regret that the Commission should have restricted problems of conservation to the fields of fauna and flora and should ignore the problems of conservation of other natural resources.

### **XVII. Hydrology**

The Council **NOTES** the report submitted to it on the development of proposed activities in the field of hydrology. It **RECOMMENDS** that the Agenda of the 1961 Inter-African Conference should take into account the recommendations which will be adopted at the second meeting of specialists, at Yaounde in November 1959, and that the delegations to the Nairobi Conference should include specialists covering the full range of subjects listed in the Agenda.

### **XVIII. Geology**

The Council **NOTES** with interest the report presented by Engineer Mouta on inter-African co-operation in the field of geology and on the work accomplished by geological services in Africa.

It NOTES particularly the recommendation adopted by the joint meeting of the C.C.T.A. regional committees for geology held at Leopoldville in July, 1958, drawing the special attention of Governments to the need to provide their respective services with the necessary facilities, particularly in respect of staff, in order that geological mapping should be actively pursued. It warmly ENDORSES this recommendation.

### **XIX. Geophysics**

(a) The Council RECALLS its intention to recommend that a meeting should be convened, organised jointly with S.C.I.G.Y. (Special Committee for the International Geophysical Year), to examine the results of the I.G.Y. in Africa. In view of the progress achieved and of the international conference proposed on the subject, the Council CONSIDERS that its own meeting could profitably be postponed until 1961. A decision will be reached at the Eleventh Meeting of C.S.A. in respect of definite arrangements; in the meantime, the Scientific Secretary will make the necessary contacts, in accordance with indications received from Dr. Naude and, in particular, with S.C.I.G.Y. and with the scientific correspondents in this field.

(b) The Council NOTES the report submitted by Professor van den Berghe on work in progress in the field of vulcanology and on the projects prepared by I.R.S.A.C. in respect of seismology. The Council EXPRESSES the wish that the Secretariat should study ways and means of assisting in the implementation of these projects on the basis of the written documents it will receive.

(c) Finally, the Council CONGRATULATES Inspector-General Delienne on the completion of the magnetic map of Africa and NOTES that this map will be presented to the Fifth Meeting of the Committee for Maps and Surveys, in Lisbon in April 1960.

### **XX. Establishment of an observatory in the Southern Hemisphere**

The Council NOTES with great interest that certain countries in Western Europe are proposing to establish a large observatory in South Africa, probably in the Karoo, to cover the southern skies with more powerful modern equipment. It AGREES with Professor Millot and Dr. Naude that this is a project of great scientific importance. It is PLEASED to give its full support and HOPES that nothing will interfere with the full achievement of this project.

### **XXI. B.I.S.**

The Council RECALLS Recommendation XXVI (c) of its Ninth Meeting, to the effect that the transfer of B.I.S. to Africa should be envisaged in the near future.

## XXII. Regional Committees for Soil Conservation and Land Utilisation

(a) The Council **DRAWS THE ATTENTION** of Governments concerned to the urgent need of reviving C.R.O.A.C.C.U.S. at the earliest possible date and **HOPES** that the delegates convened at Conakry will be able to achieve this object.

(b) The Council **CONSIDERS** that the Committees should retain their individual identity and therefore **RECOMMENDS** that the proposed Meeting of the three Committees, at Leopoldville in 1961-2, should not be used solely for joint Meetings between all three Committees, but that the individual Committees should spend a considerable proportion of their time holding their own meetings.

## XXIII. Meeting of Ecologists

The Council **RECOMMENDS** that the proposed Meeting of Ecologists to be held at Adiopodoume in October 1959 should be postponed, in view of the fact that certain persons whose presence would be indispensable will be unable to attend.

## XXIV. Forests

(1) The Council **CONSIDERS** that inter-African co-operation must be maintained and further developed in the field of forestry. It **NOTES** with interest the projects of the African Regional Office of F.A.O. in this field and **RECOMMENDS** that C.C.T.A. should continue its work :

(a) By organising meetings on definite aspects when the need arises.

(b) By holding a full-scale Inter-African Conference, in conjunction with F.A.O., at intervals of five to six years.

(c) Finally, by keeping itself informed of all developments in order to ensure liaison with other disciplines.

(2) The Council **EXPRESSES ITS SATISFACTION** with regard to the arrangements made for the Meeting of Specialists on Open Forests, to be held at Ndola in November. This Meeting entirely fits into the pattern of activities referred to in paragraph (1) (a) above. It **REQUESTS** Dr. Bates to take the Chair at this Meeting, in place of Professor Lebrun, who will be unable to attend.

## XXV. Phytotechnics

(a) The Council **NOTES** the recommendation adopted by the F.A.O./C.C.T.A. Meeting on Grain Legumes, held at Bukavu in November 1958, to the effect that a further meeting should be held on Plant Production for Cattle Feeding. It is of the opinion that this Meeting could usefully be postponed until such time as research work and studies have reached a more advanced stage.

(b) The Council APPROVES the arrangements proposed by the Secretariat for a Symposium on Bananas to be held at Abidjan in 1960, jointly with F.A.O. Subject to any comments from F.A.O., it APPROVES the following Agenda :

Ecological and economic areas suitable for banana cultivation.

Intensive cultivation methods.

Varieties and resistance to disease.

Marketing and preparation of stems.

Finally, it NOTES the remarks of one of its Members on the desirability of studying the effects that labour requirements resulting from a development of banana cultivation will have on labour migrations and the resulting problems in the field of social sciences.

(c) The Council, following the line it adopted last year, RECOMMENDS that each year a meeting should be devoted to a crop of major economic importance, to be organised in association with F.A.O. It SUGGESTS that the next crops to be considered by such meetings should be either grain crops in semi-arid zones (sorghum, maize and millets) or citrus fruit.

(d) The Council REQUESTS the Secretariat to study with F.A.O. the possibility of holding a Symposium towards 1962 on Chemical Weed Control.

#### **XXVI. Protection of Agricultural Products**

(a) The Council EXPRESSES concern at the increasing damage caused by Quelea birds, as reported from many parts of Africa. It CONSIDERS that the holding of the Symposium decided upon by the Commission, to organise regional inter-territorial co-operation with regard to control measures, should be considered as an urgent matter. It EXPRESSES the wish that this Symposium should give particular attention to problems of ringing of the birds.

(b) The Council WELCOMES the suggestion to hold a Second Meeting on Stored Food Products, in association with F.A.O., and REQUESTS the Secretariat to submit proposals to that effect.

#### **XXVII. Control of Harmful Water Plants**

The Council NOTES the information submitted by the Secretariat on the preparation of a pamphlet on harmful water plants and EXPRESSES the wish that specialists in this field should be consulted during the preparation of this pamphlet.

#### **XXVIII. St. Pauls Wilt of Coconut Palms and Similar Diseases**

The Council, having examined the problems submitted by various Governments relating to diseases of coconut palms on the West Coast of Africa, CONSIDERS that the most effective assistance at the present stage

would consist in sending an expert working on St. Pauls Wilt for a month or two to the West Indies in order to consult with his colleagues dealing with similar diseases prevailing in these islands and on control measures applied there. Failing this, a meeting could be envisaged, in the most threatened area of Africa, of a number of specialists working on the problem in Africa and elsewhere; but the Council IS OF THE OPINION that such a meeting could be more usefully held at a later stage in research work.

### **XXIX. Training Courses on Soil Conservation**

The Council RECOMMENDS that F.A.M.A. should organise a training course on soil conservation in 1961. This course would be intended for field officers responsible for soil conservation in agricultural districts and should last from six to eight weeks. It should be organised for the benefit of countries in West Africa and be held in one of these countries.

### **XXX. Hydrobiology and Inland Fisheries**

The Council AGREES with the Commission that a greater number of meetings should be devoted to inland water fisheries and hydrobiology. Following upon suggestions from the various parts of Africa, the Council RECOMMENDS two symposia to cover two very distinct types of problems :

(a) A symposium could be held in Central or Southern Africa, on the problems of major lakes already existing or to be created. It would deal with the migrations of fish and with currents, the possibility of introducing pelagic species, and co-operation between institutes concerned.

(b) Another symposium to deal with problems arising in rivers subject to heavy seasonal floods and, in particular, in the rivers in the Niger basin. The symposium could be held in the region of the Niger or Lake Chad.

The Council finally RECOMMENDS that the Panel of Correspondents for Hydrobiology should be placed under the direction of a co-ordinator and proposes that Mr. R. A. Jubb, Department of Ichthyology, Rhodes University, Grahamstown, should be appointed to the post.

### **XXXI. Oceanography and Sea Fisheries**

(a) The Council WELCOMES the appointment of Dr. Postel as Co-ordinator of the Panel and THANKS him for the preliminary work he has accomplished. It RECOMMENDS that the Commission should take the necessary measures to avail itself of his offer to undertake measurements of the salinity of sea water.

(b) The Council REQUESTS the Co-ordinator to examine, in conjunction with the Secretariat, the difficulties holding up publication of the bibliography on oceanography studies on the African parts of the Indian ocean, now in preparation.

(c) It NOTES that the Symposium on Marine Biology and the Fisheries

on the East Coast of Africa will be held in Cape Town under the Chairmanship of Professor Millot in the spring of 1960, immediately after the Eleventh Meeting of C.S.A.

(d) The Council APPROVES the policy recommended by the Co-ordinator in respect of the study of Thunidae and of tunny fishing. It therefore RECOMMENDS that the world meeting suggested by F.A.O. should be preceded by a C.C.T.A. Symposium—to which F.A.O. would be invited. Such a Symposium would include five subjects :

- Systematics and taxonomy.
- Bionomy and natural history.
- Study of fish populations.
- Fishing methods.
- Distribution.

It will be prepared with the assistance of the specialists suggested by Dr. Postel.

### **XXXII. Meeting of Specialists on the Co-ordination of Research in the Field of Sea Fisheries on the West Coast of Africa**

The Council EXPRESSES great interest in the suggestions submitted during the Fourteenth Session of the Commission in respect of the co-ordination of research work of specialised institutes and the possibility of inter-African facilities becoming available for research work on fisheries.

In compliance with the request of the Commission, the Council DECIDES to convene in 1960, at some date after the Symposium on Marine Biology and Sea Fisheries on the East Coast of Africa, a meeting of specialists, including representatives of research institutes on the West Coast.

The meeting will be held under the Chairmanship of Professor Monod. The following specialists will be invited on behalf of C.S.A. :

Dr. Postel, Co-ordinator of the Panel.

One specialist from French-speaking countries.

One specialist from English-speaking countries in the Gulf of Guinea (e.g. from the Fisheries Development and Research Unit, Freetown).

One specialist from Angola.

One specialist from South West Africa or the Union of South Africa.

One specialist from Nigeria will also be appointed, his attendance will entail no expense for C.C.T.A.

The names of the specialists will be communicated to C.C.T.A. by Professor Monod, after consultation with Dr. Postel, in the course of the next four weeks.

The Council HOPES that the various countries concerned will send other specialists in this field as observers.

The meeting will take place on the West Coast, for instance at Lagos. The Agenda will be prepared by Professor Monod, in consultation with Dr. Postel, and will include, *inter alia*, the following items :

Review of the Luanda recommendations.  
Problems of regional co-ordination and co-operation in the field of :

- Zoological systematics.
- Biology of useful species.
- Physical oceanography.
- General equipment.
- Methods of fishing and technology of fish.
- Documentation and regional liaison.

### XXXIII. Veterinary Matters

(a) The Council WELCOMES the recommendation of a Working Party of the Commission to extend the functions of I.B.E.D. to cover certain aspects of animal production. In view of the excellent results achieved by I.B.E.D. during the past nine years, it is CONFIDENT in the success of I.B.A.H.P. (Inter-African Bureau on Animal Health and Production).

(b) The Council also ENDORSES the recommendation to broaden the scope of I.A.C.E.D. in order to include these subjects and looks forward to continuing to receive the valuable advice and assistance of this Committee.

(c) The Council NOTES with interest the recommendations submitted by I.A.C.E.D. in respect of two training courses on artificial insemination and poultry sanitation and production, to be held in 1961.

(d) The Council APPROVES the recommendation adopted by I.A.C.E.D. on contagious bovine pleuropneumonia in Africa and EXPRESSES the wish that every effort should be made to develop joint research work on this important disease.

## PART 3. TECHNICAL, ECONOMIC AND SOCIAL

### XXXIV. B.P.I.T.T.

At its Eighth and Ninth Meetings the Council unreservedly EXPRESSED its concern at the unsatisfactory nature of the permanent organisation of the Commission in the medical field. It IS OF THE OPINION that there is a serious gap in this field of inter-African co-operation. The admirable work accomplished by W.H.O. does not cover all the problems and it is not the intention of W.H.O. to fill this gap. An active inter-African bureau should be made available to specialised circles, to act as a dynamic organisation to ensure liaison between them and, in particular, to publish a Bulletin con-

taining recent, unpublished information of value to all specialists in the field of public health in Africa.

Last year, in Accra, the Council APPROVED the proposals submitted by the Secretariat on the functions of such a bureau. It WELCOMES the fact that the Commission has endorsed this recommendation. The time has now come to set up an inter-African Bureau for Public Health, to fulfil this task in an effective manner and publish the proposed Bulletin. The Council gives its full support to the appended memorandum, proposing measures for reorganisation in present budgetary provisions. It REQUESTS the Secretariat to submit this memorandum to Member Governments and ensure that the necessary approval, nominations of candidates and budgetary measures are forthcoming at the earliest possible date.

The Council SUGGESTS that, if need be, a qualified person should be entrusted with a mission of short duration to define the terms of the Memorandum.

Finally, the Council CONSIDERS that the establishment of an Advisory Committee on Public Health, which would meet every two or three years, would provide the new bureau with contacts in all countries in Africa and would furnish an opportunity of giving its instructions on points of policy at regular intervals.

### **XXXV. Proposals for Trypanosomiasis Research and Tsetse Control**

The Council NOTES with great interest the reports presented to it on requests to I.C.A. for technical and financial assistance from the U.S. Government for the purpose of expanding research on human and animal trypanosomiasis and for developing schemes for the control of trypanosomiasis and the tsetse fly.

It CONSIDERS that C.C.T.A./F.A.M.A. should co-operate fully with I.C.A., if invited to do so, in a survey by a group of experts of the whole problem of tsetse and trypanosomiasis in Africa and in making proposals and plans for future research, control measures, pilot schemes and so forth and particularly for future co-operative action on a regional basis throughout Africa.

The accumulation, in collaboration with I.C.A., of specialised knowledge and experience on the most effective and economic means of controlling the tsetse fly and trypanosomiasis would be quite in keeping with the general activities of the Commission. This work can be particularly constructive inasmuch as it would lead to a more rational use of the facilities generally offered by the American Government.

### **XXXVI. Specialised Meetings in the Medical Field**

(a) The Council NOTES with satisfaction the results of the Meeting of Specialists on Virus Diseases and Rickettsiosis of Man and Animals held



at Kampala in June. In particular, it draws the attention of Governments to the recommendation relating to rabies.

(b) The Council APPROVES of the decision to postpone until 1961 the Meeting of Specialists on Ankylostomiasis which it proposes holding jointly with W.H.O. It EXPRESSES the wish that precise proposals on the subject should be submitted at its Eleventh Meeting.

(c) Finally, the Council NOTES the information given by one of its Members on the need to hold meetings in the future on :

Insecticides and molluscicides (in co-operation with W.H.O.).

The geographic distribution of major diseases in Africa, namely cancer of the liver (in co-operation with the International Union against Cancer) and amoebiasis diseases.

### XXXVII. Cartography of Vectors of Diseases

The Council RECALLS the intention expressed in 1957 to prepare a series of maps showing the distribution of vectors of diseases in the African Continent. Each map would cover a single vector or disease.

The Council THANKS Professor van den Berghe for the information he has provided and considers that the time has come to adopt a detailed recommendation enabling the Secretariat to propose to Governments the preparation of a Joint Project 8.

The methods of work listed hereafter will be the subject of a memorandum to be prepared by Professor van den Berghe during the next few weeks.

(a) The distribution of vectors and diseases will be presented on the base maps prepared under the direction of the Inter-African Scientific Correspondents for Maps and Surveys (see Recommendation LXI). Maps will be non-transparent and printed in black and white. There will be some twenty maps, some of which will comprise several sheets when it appears necessary to use larger scale maps (e.g. 1/5,000,000).

(b) Professor van den Berghe will be responsible for collecting the information and making the compilation form. On the other hand, the final drawing and the printing will be the responsibility of the Inter-African Correspondent for Maps and Surveys.

(c) The first maps, the blue-prints of which should be ready by the end of 1960, will deal with anopheles. The map of distribution of anopheles will probably be to a scale of 1/5,000,000, glossinae (B.P.I.T.T. will collect the information and send it to Professor van den Berghe), mollusc vectors of schistosomiasis (W.H.O. will be asked to authorise the use of the information it will have collected).

(d) The subsequent maps will be prepared within a time limit of four to five years. It is recalled that I.B.E.D. will be responsible for the mapping of ticks, within the general scheme to be co-ordinated by Professor van den Berghe.

### XXXVIII. Medicinal Plants

The Council EXPRESSES its interest in the research work in progress on the medicinal and toxic properties of African plants. It REQUESTS the Secretariat to prepare a report on this subject, containing a list of institutes and other organisations undertaking research work, their programmes of research and the principal results achieved.

### XXXIX. Meeting of Specialists on the Adaptation of Education to African Conditions

The Council NOTES with satisfaction the results of the Meeting on the Basic Structure of African and Malagasy Psychology, which was held at Tananarive in August, under the Chairmanship of Professor Millot.

It ENDORSES the recommendation adopted by that Meeting to the effect of dividing into two parts the subjects that were to be discussed by the Meeting of Specialists on the Effects of Social and Cultural Changes on the Mental State of African and Malagasy populations. Two Meetings of Specialists will therefore be organised in 1960 and 1961 respectively, in place of the one recommended last year.

The second meeting will deal with the general problems of acculturation. Decisions respecting detailed arrangements will be taken at the Eleventh Meeting of C.S.A.

The Council DECIDES to hold a Meeting of Specialists in 1960 on the Adaptation of Education to African Conditions.

It ENDORSES the recommendation adopted by the Tananarive Meeting on this subject. The agenda shall therefore include the following items *inter alia* :

Research work on the degree of adaptation of present methods and programmes to local requirements and the cultural conditions of the Africans.

Analysis of the causes of maladjustment.

Means of achieving better integration of schools into the African social and cultural environment.

The particular case of African students overseas.

Dr. Tigani el Mahi, who has been asked to take the Chair at this Meeting, will prepare the Agenda.

In addition to this specialist, who is a psychiatrist, the Council DECIDES to invite the following :

Professor D. BIEBUYCK (Ethno-anthropology), Lovanium University, Leopoldville.

Dr. W. HUDSON (Applied Experimental Psychology—Education), National Institute for Personnel Research, Johannesburg.

Dr. T. A. LAMBO (Psychology—Psychiatry), Mental Hospital, Abeokuta, Western Nigeria.

Mr. L. PAYE (Higher Education), Rector of the Dakar University.  
 Dr. A. TAYLOR (Educational Psychology), University College of  
 Ghana, Legon, Achimota.

The Council EXPRESSES THE WISH, moreover, that among specialists appointed by Governments to attend as observers the following should be included :

Dr. P. A. W. COOK (Social Anthropology), Principal of a Bantu University, Union of South Africa.

Or, in his absence :

Mr. K. B. HARTSHORNE (Education), Inspector of Bantu Education, Union of South Africa.

Mr. C. FRANCIS (African Education), Principal of the Alliance High School, P.O. Kikuyu, Kenya.

Professor H. ROUSSOUW (Psychology—Education), Professor of Education, University College of Rhodesia.

Dr. ALEXANDRE SARMENTO (Anthropology), Institute of Tropical Medicine, Lisbon.

The assistance of Sir Christopher Cox, Educational Adviser to the Colonial Office in London, could usefully be requested, in order that certain experts who have worked on these problems in Africa should be included in the United Kingdom delegation.

Finally, the Council NOTES that it has been suggested to hold the Meetings at Lagos early in the summer and is in favour of this choice.

## XL. Child Welfare

The Council NOTES with great interest the conclusions of the C.C.T.A./C.I.E. (International Child Centre) Symposium, held at Lagos in March 1959. It EXPRESSES its particular approval in respect of the following three recommendations :

(a) The attention of Member Governments is drawn to the need to establish, as soon as possible, in countries where they do not yet exist, Committees or other planning and co-ordinating organisations for the protection of children ; these organisations should include specialists of the various disciplines concerned with mother and child.

(b) The establishment of an inter-African Panel of Correspondents for the Protection of Mother and Child can be postponed until such time as the Committees mentioned in paragraph (a) have been set up in a sufficient number of countries.

(c) It would be desirable to establish, in each country, a small Committee to co-ordinate action in the field of health education. An inter-African meeting to cover this subject would be of great value. The Secretariat will submit proposals to the Council, after having consulted the

various international organisations having projects in this field (W.H.O., C.I.E., F.A.O., U.N.I.C.E.F., etc.).

### **XLI. Nutrition**

On the basis of reports submitted to it on the projects of the Commission and of other international organisations in the field of nutrition, the Council PRESENTS the following conclusions :

(a) It APPROVES the principle of convening a Fourth Inter-African Conference on Nutrition, in 1961 in the Belgian Congo, and CONSIDERS that the proposed subject (national policies in the field of nutrition) should be retained. The preparation of this Conference will entail a considerable amount of work. The Council NOTES with deep gratitude Professor van den Berghe's offer to place the services of Dr. E. De Mayer and of the nutrition laboratories of I.R.S.A.C. at the disposal of the Commission for the preparation of the Conference. Taking these facts into consideration, the Council SUGGESTS that the Conference should take place at Bukavu.

(b) The Council APPROVES the revision of Publication 19 on the research work achieved in the field of nutrition in Africa. It EXPRESSES the hope that the present organisation of the Panel of Correspondents will permit of the revision of this publication within the proposed time limit. It also AFFIRMS its interest in the preparation of a report by Dr. Platt on the various methods of preparation of food and their respective biological value.

(c) The Council CONSIDERS that several other publications must be prepared on the subject of nutrition during the forthcoming years, such as maps of distribution of food products discussed during the F.A.O./W.H.O./C.C.T.A. Seminar at Lwire, a handbook for teaching personnel responsible for medium-level education on nutrition, etc. In so far as other organisations are not carrying out such work, the Council RECOMMENDS that the C.C.T.A. permanent organisation for nutrition should deal with this matter.

(d) Finally, the Council EXPRESSES its appreciation for the work accomplished by F.A.O. and W.H.O. in respect of training during the last few years. This work should be pursued. Other courses, on a higher or medium level, should be organised and further facilities provided during the forthcoming years. The Council RECOMMENDS that F.A.M.A. should be associated in this effort, if need be, and that the C.C.T.A. permanent organisation for nutrition should take an active part in their preparation and holding. Medium-level courses could be organised on a regional basis, or even on a national basis, with the assistance of international organisations such as C.I.E.

### **XLII. Control of Alcoholism**

The Council NOTES with some concern the increasing problems arising in various fields (medical, social, economic) from the consumption of

alcoholic drinks ; taking into account the need for Governments to possess as soon as possible the necessary basic information for systematic and co-ordinated action, it RECOMMENDS that B.P.I.T.T. should undertake a survey among departments, organisations or persons concerned to provide the responsible authorities with the information that will enable them to undertake effective action at inter-African level.

#### **XLIII. Use of Radio-isotopes in the Medical Field**

The Council WELCOMES the preliminary arrangements made to hold the proposed course on the use of radio-isotopes in the medical field in Leopoldville in May or June 1960.

(a) The course will be organised for and restricted to future users of radio-isotopes. It will be open to suitably qualified medical and veterinary officers, hospital physicists, biologists, with the necessary basic training in physics. A strict check will be made of their qualifications.

(b) The course itself should last about four weeks and will include a section on general basic training, including problems of protection and safety in handling, and a section on the study of particular problems relating to the use of radio-isotopes. A fifth week may be added to this programme, during which the teaching will be divided into several sections of interest to specialists in the various disciplines. The suggestion made by Monseigneur Gillon may serve as a basis for the preparation of programmes, in consultation with Dr. Naude and the national specialists concerned.

(c) The Director of the course should be appointed by the Belgian Government. In view of the interest shown by W.H.O. and of the assistance it proposes to give, its representative may be included among those responsible for running the course. Professors and lecturers should be chosen among specialists nominated by Member Governments of C.C.T.A., experts from W.H.O. and I.A.E.A. (International Atomic Energy Agency) if necessary.

(d) It would be desirable that participants who possess the necessary qualifications and have profitably taken part in the work of the course should be given a certificate of competency in the use of radio-isotopes such as those recognised in France or the United Kingdom. Before proposing such a certificate, the organisers of the course should ensure that its validity will not raise any objection on international level.

#### **XLIV. Town and Country Planning**

The Council APPROVES the proposals submitted by the Inter-African Secretary for Housing, following upon the Conference on Housing and Urbanisation. In particular, it NOTES with interest that a Symposium will probably be convened at the end of 1962, to include representatives of

Research Institutes in the field of building. This Symposium should provide for better co-ordination of research and a better distribution of results; the Council therefore RECOMMENDS that the course should also be open to persons in charge of building schemes, who are called upon to make use of the findings of research institutes.

The Council also APPROVES the principle of holding a C.C.T.A./W.H.O Seminar on problems of public health in relation to housing.

Finally, it SUGGESTS that in order to avoid any misunderstanding, the problems covered by the Commission, at present referred to as problems of "housing", should henceforth be known as problems of "Town and Country Planning".

#### **XLV. Specialist Meeting on Water Treatment Problems**

Following upon the suggestion of the Fourteenth Session, the Council DECIDES to devote one of its Specialist Meetings in 1960 to water treatment problems.

The Meeting will take place, if possible, in Pretoria, at the Council for Scientific and Industrial Research (C.S.I.R.). It will be held under the Chairmanship of Dr. Naudé. The following specialists will be invited on behalf of the Council:

Mr. GOMELLA, Directeur de la S.E.T.U.D.E., Alger,

Mr. MACLAUGHLAN, Chief Water Engineer, Ministry of Works, Ibadan (W. Nigeria),

Dr. SOUTHGATE, Director of Water Pollution Research, Department of Science and Industrial Research, Regent Street, London,

Dr. S. J. STANDER, Director of National Water Research Institute, C.S.I.R., Pretoria,

Dr. VOLKMAN, Chief Research Officer, National Chemical Research Institute, C.S.I.R., Pretoria,

as well as two other specialists whose names will be communicated by Dr. Naude during the forthcoming weeks.

After having consulted Member Governments, the Secretariat will also consider the possibility of inviting specialists from the United States, Israel and the Netherlands to take part in the work. In addition experts appointed by O.E.E.C. and U.N.E.S.C.O. may possibly be invited.

Details of the agenda will be fixed by Dr. Naude. The following items should be included:

Specific problems of brackish and salt water encountered in various regions of Africa.

Methods of demineralisation:

(i) Electrodialysis.

(ii) Evaporation.

Economic aspects of different methods that can be employed.  
Methods of treatment of polluted water :

- (i) Treatment for re-use as industrial water.
- (ii) Treatment for re-use as drinking water.

#### **XLVI. Further Problems of Technology**

The Council WELCOMES the decision of the Commission to extend its methods of work to the field of technology.

It NOTES the proposal submitted by several experts to organise a meeting in the near future, gathering engineers concerned with problems of long distance transmission of electric power, and EXPRESSES THE WISH that more precise suggestions may be submitted at the Eleventh Meeting, after consultation with responsible experts in the various countries.

It also NOTES the initiative taken by the Secretariat to organise field trips or training courses on the spot, when major schemes are being carried out in Africa, with technical aspects of particular interest.

#### **XLVII. Major Industrial Schemes in Under-Developed Countries and their Comparison in Various Fields**

It has been suggested that C.C.T.A. organisations concerned should study, in their respective fields, the comparison of the achievement of major industrial schemes in Africa. The problems arising therefrom are manifold. The creation of a large modern economic complex in under-developed countries causes repercussions in a number of fields. The Council is in a particularly favourable position with regard to collecting the results of research work, studies, experiments already conducted in this continent.

The Council therefore APPROVES that the agenda of the Sixth Inter-African Labour Conference should include co-ordination of the problems thus arising in the field of interest of the delegates to the Conference.

#### **XLVIII. Symposium on the Social Aspects of Urbanisation**

The Council REGRETS that it was impossible to secure an adequate exchange of views between specialists in social sciences and professional officers responsible for town planning, on the occasion of the Inter-African Conference on Housing and Urbanisation. It WELCOMES the fact that the Commission has decided to organise a meeting of specialists in the various fields relevant to social aspects of urbanisation, namely sociologists, ethnographers, economists, public health officials and town planners.

The agenda of the Symposium shall include among others, the following items :

- (i) Scope of urban development problems : the underlying factors of urbanisation.

- (ii) An appraisal of the benefits and ill effects of urbanisation in the various fields : social and economic, public health, education.
- (iii) The policy and administration required to meet needs arising from urban developments.

Precise papers should be prepared in advance, making the fullest use of the considerable work already accomplished on the subject by specialists in social sciences. In this connection U.N.E.S.C.O. could usefully be associated with the work.

#### **XLIX. Survey of Migrations in West Africa (Joint Project 3)**

The Council **RECALLS** its previous recommendations and **EXPRESSES** its satisfaction in respect of the arrangements made to complete the important survey on migrations, conducted by Dr. Rouch in West Africa. It **NOTES** with appreciation that, in accordance with the Recommendation 62 at the Ninth Meeting, the Commission has decided to convene a Symposium to study the methodology of the survey and the use to be made of the results. It **CONSIDERS** that to ensure the success of the Symposium the reports on the results of the survey and on the methods adopted should be distributed several months beforehand. It may be interesting to examine similarities between these migrations and others in the remainder of the continent.

#### **L. Linguistics**

The Council **NOTES** with satisfaction that the Linguistics Committee held its first meeting in June, at Tervuren. It **CONSIDERS** that such specialised meetings provide the possibility of useful co-ordination of activities between experts working in the same field and **HOPES** that Member Governments will assist them as much as possible.

(a) The Linguistics Committee proposed that a more detailed study should be made in respect of the pidgin and lingua franca languages used in Africa South of the Sahara. The Council **CONSIDERS** that such studies should be undertaken in the first place on a regional basis. Only then would it prove useful to consider the desirability of holding a meeting of specialists on the subject. The Council relies on the Linguistics Committee to organise and review the above-mentioned studies.

(b) The Council **EXPRESSES CONCERN** at the recommendation submitted by the Committee to request Member Governments to finance further publications of out-of-print scientific works. It **AGREES** with the Secretariat that it would be preferable to seek the financial help from private Foundations or other Organisations. It **SUGGESTS** that in some cases consideration should be given to the possibility of reproducing such works by microphotography and **REQUESTS** the Secretariat to examine this solution in collaboration with specialist organisations such as the Microcard Foundation at the University of Michigan.



(c) Finally, the Council NOTES that the quarterly publication *Africa* could, according to Professor Daryll Forde, publish quarterly or annually a list of studies in progress on African languages as recommended by the Linguistics Committee.

### LI. Middle African Museums Association (M.A.M.A.)

The Council APPROVES and wishes to ENCOURAGE the work done by the Association to stimulate public interest in Museums and to facilitate the training of qualified personnel. It EXPRESSES the wish that C.C.T.A. and F.A.M.A. should give consideration to suggestions that may be presented by this Association and REQUESTS Dr. Desmond Clarke to act as observer for the Council at conferences organised by the latter.

### LII. Libraries and Documentation

Research workers and technical departments are not sufficiently informed of existing library resources in the sub-continent. The Council is OF THE OPINION that better co-operation should be assured between such libraries and that specialised scientific circles should be better informed. The Johannesburg African Regional Conference drew attention to this in 1949. The Council is now desirous of resuming its activity in this field.

As a preliminary step, the Council AGREES to hold a meeting of specialists on this subject, in 1960 at Bukavu, under the Chairmanship of Professor VAN DEN BERGHE. The following specialists will be invited on behalf of C.S.A. :

Mr. HARRIS, President of the Librarians Association of West Africa, at Ibadan.

Mr. D. G. KINGWELL, Head of Information Services, C.S.I.R., Pretoria.

Mr. J. ROUSSET DE PINA, Chief Librarian of the University of Dakar.

The Librarian of the University of Rhodesia and Nyasaland, Salisbury.

A Librarian from Mozambique or Angola to be appointed by Professor Fraga de Azevedo.

If one of these specialists is unable to attend, Mr. H. Holdsworth, Librarian of Makerere College, Chairman of the Library Association for East Africa, will be invited in his stead.

The detailed agenda of the Meeting will be prepared by Professor van den Berghe. It should include the following items :

Lists to be prepared and distributed relating to libraries and specialists interested in the subject.

Catalogues of periodicals received by libraries, distribution of such catalogues.

Organisation of national or regional centres, to provide research workers with all existing documentation, to reproduce documents available in the form of microfilms, photo-copies, etc. : co-operation between these various centres.

Training of specialised library personnel, particularly African personnel.

After this Meeting, the Council WILL CONSIDER what other measures should be recommended.

At this stage, it NOTES WITH SATISFACTION the information given by Professor Fraga de Azevedo, in respect of the existence of a Documentation Centre at the Institute of Tropical Medicine in Lisbon, which is prepared to provide research workers in all countries in Africa with photo-copies, microfilms, etc., of documents in its possession.

A Memorandum will be circulated by the Scientific Secretariat concerning these facilities.

### **LIII. Future Action of C.C.T.A./C.S.A. in the Economic Field**

The Council NOTES with appreciation the establishment of E.C.A. It does not consider that the economic programme of this Organisation is likely to encroach upon the work of C.C.T.A./C.S.A. in the same field. It CONSIDERS that C.C.T.A. still has a most important role to play in the development of economic studies relating to countries South of the Sahara and IS OF THE OPINION that such activities should be devoted to the encouragement of factual studies of limited scope. Comparative studies of particular problems or of individual sectors of the economy have much value in allowing the economics of the countries to be better appreciated and inter-disciplinary studies to be extended. It does not consider that extensive surveys of global economic systems are subjects for consideration by C.C.T.A., but the Council NOTES that the present number of systematic economic appraisals and evaluations in Africa is small. These types of studies should be developed and meetings of experts arranged to examine methods and systems.

(a) The Council, after considering the subjects proposed for further study, RECOMMENDS that priority should be given to a comparative study of methods employed to encourage private investment. Subjects considered worthy of further examination are :

- (i) A comparative study of the evaluation and coverage of the subsistence sector in national accounting systems.
- (ii) The influence of demographic growth and change on patterns of economic development.

(b) The Council also discussed the possible effect of the development of research in the scientific field on economic growth and the expansion of living standards. It CONSIDERS that this subject is of great importance. It was agreed that the subject would be further examined after Mr. Martin had prepared a Memorandum setting out some of the problems involved together with a discussion of possible methods of research in this field.

(c) The Council NOTES the imminent publication of the Inventory of Economic Studies edited by Miss P. Ady (Joint Project 4) and CONSIDERS that the periodical supplements should be published at intervals of 18 to 24 months.

(d) Finally, the Council APPROVES the steps taken to prepare a Comparative Study of national accounting systems (Joint Project 6). It CONGRATULATES the experts who have undertaken the study and looks forward to being informed of the results of the Working Party which will examine the draft, in December in London.

It also NOTES with interest the contact established with the International Association for Research into Income and Wealth and HOPES that it will be possible to arrange for the African meeting of this Association to be held at the C.C.T.A./C.S.A. Headquarters in Bukavu or in Lagos.

#### LIV. Statistics

As in the field of economics, the Commission has an important part to play in statistical research. Its work during the last few years has proved fruitful and must be continued, particular attention being given to work of a limited scope on a definite subject. In this respect, the Council APPROVES the proposal to examine the various methods used in making family budgets, and to participate in the organisation of training centres in the field of statistics.

The Council NOTES with great interest the suggestion made by one of its Members that specialists in natural sciences should be provided with full information on modern statistical methods, in respect of the planning of experiments and their analysis. All these specialists possess general knowledge in this field. It would often be useful to bring them together with professional statisticians, in short duration seminars or in actual training centres, in order that they may acquire knowledge of new techniques. The Council REFERS the matter to the Commission and to F.A.M.A. for consideration.

#### LV. Classification of Occupations

The Council NOTES with interest the report submitted to it on the study to be undertaken by an expert, probably from I.L.O., working in close connection with the Inter-African Labour Institute, for the purpose of adapting the international classification of occupations to African conditions. It WELCOMES this valuable example of co-operation with one

of the Specialised Agencies. Nevertheless, it **DRAWS THE ATTENTION** of Governments to the imperative need to submit the results of this study to a qualified group of statisticians and labour specialists before it is adopted in its final form.

### **LVI. Rural Welfare**

(a) The Council **APPROVES** the work undertaken in Western Africa to provide those responsible for community development in the various countries with opportunities of obtaining information on achievements in neighbouring countries. It **CONSIDERS** that problems arising from activities in rural areas should be examined from a very practical point of view, full consideration being given to local conditions.

(b) The Council **NOTES** that "paysannats" have been developed in Central Africa for several years and **IS OF THE OPINION** that it should therefore be possible to make preliminary comparisons between the various methods. Although the objectives of "paysannats" are different from those of community development, particular methods applied are often similar. The Council therefore **SUGGESTS** that, alongside the programme that it will present on community development, for Central and Eastern Africa, the Secretariat should propose a meeting to deal with the various forms of "paysannat".

(c) The Council **WELCOMES** the decision of the Commission to make available to countries in Africa a permanent information centre on rural welfare and **EXPRESSES THE WISH** that this decision should be implemented without delay.

(d) Finally, the Council **EXPRESSES ITS INTEREST** in the proposal to hold a Symposium on the problems arising from the development and organisation of rural trade.

### **LVII. Education for Women**

The Council **STRESSES ITS INTEREST** in the activities proposed by the Commission and other international organisations in the field of women's education. In order that activities in this field may be co-ordinated, it **EXPRESSES THE WISH** that one of the Scientific Secretaries should take part in the work proposed by U.N.E.S.C.O. in respect of the access of women to education.

### **LVIII. Co-ordination Between Institutes of Higher Education**

The Council **STRESSES** the extremely serious position arising from a shortage of university teachers, research workers, scientists and technologists in a fast developing continent. It **RECOGNISES** that decisions in respect of measures to remedy this shortage must rest with the responsible authorities. It **CONSIDERS**, however, that most of the problems arising

in this connection affect Africa as a whole and that the Council can therefore not ignore them; it should assist in finding the best solution, in so far as it is requested to do so.

The Council should always be particularly cautious in taking initiative in this field. Such initiatives, at least in a preliminary stage, should not go beyond the following :

(1) Drawing the attention of C.C.T.A. to the full importance of the question.

(2) Suggesting that closer contacts should be established between principals or deans of higher education institutions in Africa South of the Sahara. In this respect, it is desirable that a meeting of heads of institutions in countries of different languages should be held in the near future; the Council EXPRESSES the wish that C.C.T.A. should offer its assistance for the organisation of such a meeting.

(3) The programme of this meeting could include :

(a) Taking stock of the present situation and future requirements in the various parts of Africa.

(b) Means of promoting exchanges between universities, either of professors, research workers, students, special equipment, or documents, etc., with the assistance of the Council or of the Commission, if necessary.

(c) Possible publication by the Council, with the co-operation of higher education establishments, of an inter-African directory of universities, and the regular exchange of information on programmes of lectures and research work, theses, publications and main events of educational interest.

#### **LIX. Research Work on Absenteeism and Labour Turnover (Joint Project 5)**

The Council NOTES WITH SATISFACTION that research work has started on absenteeism and labour turnover. This is the most extensive project undertaken by C.C.T.A. at inter-African level and the Council EXPRESSES THE HOPE that it may be completed in time for the Sixth Inter-African Labour Conference (Dakar, 1960).

#### **LX. Tribute to Professor Victor Hugo de Lemos**

The Council learns with deep regret of the sudden death of Professor Victor Hugo de Lemos. It WISHES TO PAY TRIBUTE to the academic and scientific work accomplished by the deceased and associates itself with the words of admiration and gratitude spoken by its Chairman when evoking his memory. It REQUESTS Professor Fraga de Azevedo to convey its most sincere condolences to the family of the late President of the Inter-African Advisory Committee for Maps and Surveys.

### LXI. Cartography

On a number of occasions, the Council HAS STRESSED the imperative need to ensure close co-ordination in Africa between the many cartographic projects in progress in the various scientific fields. Only thus will the over-all work of C.C.T.A. achieve its full value.

When this has been completed, the final stage will consist of a general atlas of Africa, covering many fields.

(1) The Council NOTES WITH APPROVAL the measures already taken to achieve progress on these lines :

(a) Professor S. P. Jackson has been appointed Inter-African Scientific Correspondent for Maps and Surveys.

(b) Base maps, printed from plates prepared for the climatological atlas, are available to three scales : 1/5,000,000 (six maps), 1/15,000,000 (one map) and 1/30,000,000 (publication will take place in a few months time).

They will be printed in black and white and will comprise, in overprint, a non-photographic blue grid that will facilitate their use. In addition, a simplified map to a scale of 1/10,000,000, without place-names, will also be made available to research workers, thanks to the generosity of the Government of the Union of South Africa.

These maps may be obtained from the Inter-African Correspondent for Maps and Surveys ; their distribution is undertaken by Witwatersrand University to which the Council EXPRESSES its warmest thanks.

(2) The following measures should now be taken and the Council RECOMMENDS that they should be urgently adopted by Governments :

(a) Bureaux and other C.C.T.A. organisations, as well as research workers carrying out mapping projects under C.C.T.A./C.S.A. aegis, should be instructed to use the base maps prepared by C.C.T.A. to the exclusion of any others, preference being given to the first three scales mentioned above in order that the format of the sheets should remain the same, as far as possible.

(b) A cartographic project within the C.C.T.A./C.S.A. programme of work should be completed in two stages :

(i) The person responsible for the project should collect the scientific information. As far as possible, such information should cover the whole of the continent ; the project should, however, not be held up in the event of it being impossible to obtain the necessary information in respect of Africa North of the Sahara.

(ii) The compiled material should be communicated to the Inter-African Scientific Correspondent for Maps and Surveys who would decide on the manner in which they should be shown on the final map, with due consideration for the usual conventions.

(iii) The drawing of the maps would be ensured by the cartographic services of the Union of South Africa, in consultation with Professor Jackson. Before printing by the South African Government printers, the scientist responsible for the project should be asked to check and approve the proofs of the maps.

(iv) The Secretariat should, in each case, submit proposals to Member Governments in respect of necessary financial provisions to cover, in the framework of a joint project :

The limited expenditure for the collection of information by the Scientist responsible.

The expenses incurred by the Inter-African Scientific Correspondent for Maps and Surveys, particularly in respect of allowances paid to his assistants.

Payment of expenses incurred by the South African Trigonometric Service, should occasion arise.

Current expenditure.

Cost of distribution and, if applicable, publicity.

(3) The Council CONSIDERS, moreover, that base maps should prove of great value to many Institutes, research workers, education establishments in and outside Africa. It RECOMMENDS that the Commission should investigate these opportunities and EXPRESSES THE HOPE that a wide distribution of these excellent working tools will provide useful publicity for the Commission.

#### ANNEX TO RECOMMENDATION XXXIV

#### MEMORANDUM ON THE FUNCTIONS AND THE ORGANISATION OF B.P.I.T.T.

The Commission has recently extended the functions of B.P.I.T.T., from trypanosomiasis only, to include tuberculosis, bilharziasis, leprosy, trepaonematosis, the use of radio-isotopes, and mental health. The Eighth and Ninth Meetings of C.S.A. approved these extensions to the functions of B.P.I.T.T., which are justified by the need for inter-African medical co-operation over a wider field.

Medical activities have proved to be a decisive factor in the development of tropical areas. They still remain the essential condition of this development. These activities present many aspects and are of a complex nature. The subjects covered so far do not meet the actual needs for inter-African information and co-ordination.

The designation of B.P.I.T.T. must be changed without delay and the only one commensurate with the magnitude of the medical field seems to be Inter-African Bureau for Public Health (B.I.S.P.).

As a centre for the collection and distribution of general and specialised information from all Governments and all medical circles in Africa South of the Sahara, the Bureau would best fulfil its essential function by publishing a quarterly, or even a monthly, bulletin in French and in English.

At regular intervals, summaries of annual reports from medical services, abstracts of scientific works and general reviews of progress in certain fields, would provide early information on questions of immediate interest to Africa, for the benefit of Government departments, private organisations, and thousands of medical officers now working in isolation without any contact with their foreign colleagues. Individual experience, at present all too often wasted, would thus benefit all those concerned.

Governments should co-operate to ensure a wide circulation of the bulletin. On the other hand a non-selective publication of summaries of all specialised works on trypanosomiasis or on any other section of tropical diseases would not meet any actual need in Africa. Specialised services are kept fully informed in these fields by the excellent *Tropical Diseases Bulletin*.

B.I.S.P. should draw its inspiration to a large extent from I.B.E.D. (I.B.A.H.P.) and its *Bulletin* which has proved completely successful in the field of epizootic diseases.

The organisation of B.I.S.P. should also be adapted to its new functions. A full-time Director, with the highest qualifications, should be appointed. An active full-time Assistant Director should also be appointed. With two such officers, both equally competent and if possible chosen from different nationalities, one Director would always be present at the Bureau whilst the other would be travelling at intervals, to ensure the necessary personal contacts in the various countries.

A Council consisting of one representative of each Government, of the Directors of the Princess Astrid Institute for Tropical Medicine and of the Pasteur Institute in Brazzaville, would examine and define, every two years at least, the activities of B.I.S.P. and submit suggestions to C.S.A. and C.C.T.A. in respect of new subjects. It would be desirable that an observer from W.H.O. should attend the meeting of B.I.S.P. Relations with the international specialised organisation should receive special attention.

It would seem that the new organisation, B.I.S.P., could be set up within the present budget of B.P.I.T.T., in view of the fact that for 1959 it is higher than that of I.B.E.D. for the same financial year.



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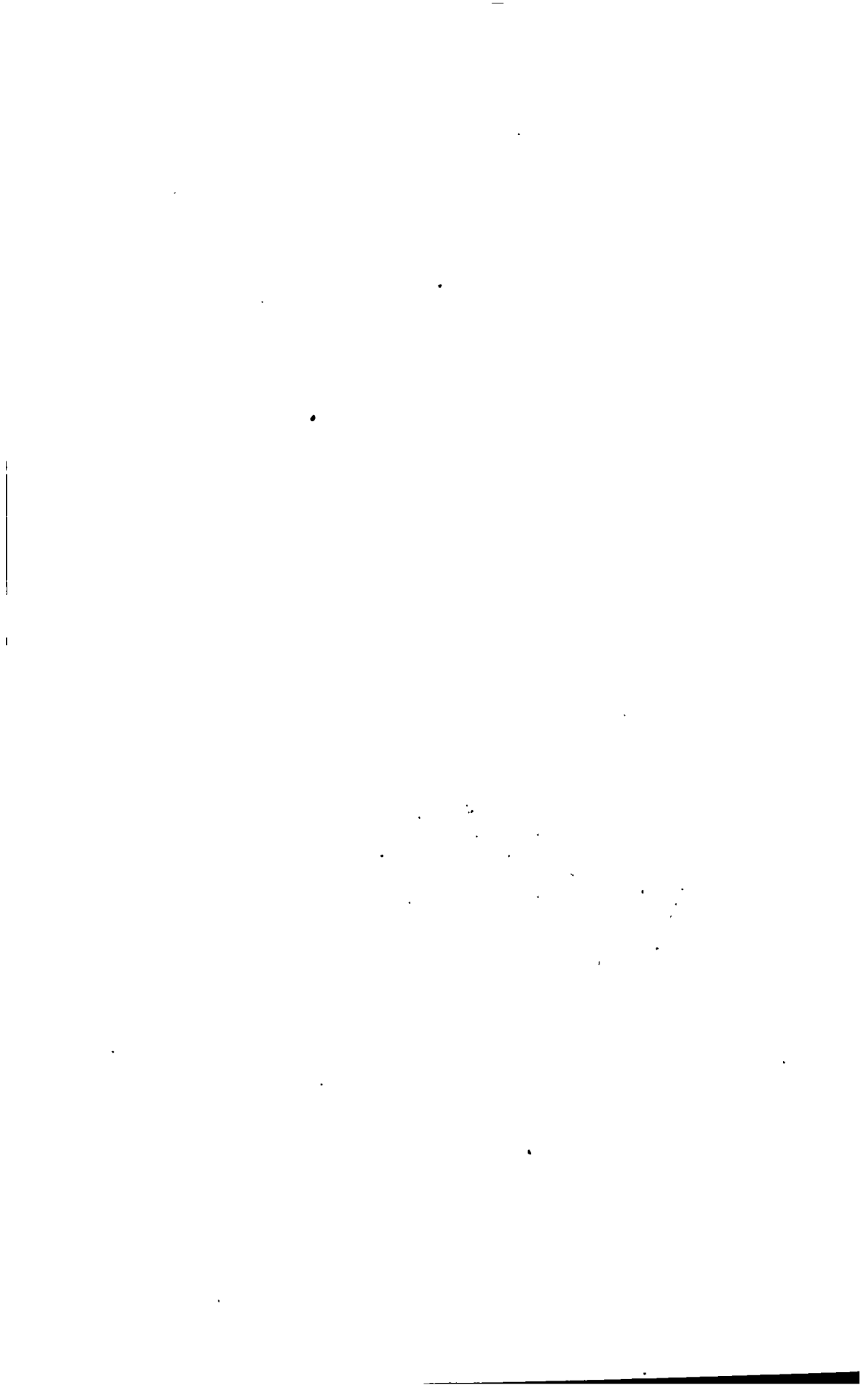
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