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**RESEARCH ON THE STERILITY METHOD OF TSETSE FLY CONTROL
OR ERADICATION**

FIRST PROGRESS REPORT (JUNE - DECEMBER 1963)

The Participating Agency Service Agreement (Pasa 3-8) between the Agency for International Development (AID) and the Agricultural Research Service (ARS), United States Department of Agriculture, covering research on the evaluation of the sterility method of tsetse fly control or eradication became effective on June 14, 1963. In this agreement, plans for developing a cooperative research effort between ARS and an African Research Station were outlined. Prior to final approval of the Pasa 3-8 agreement, close and effective cooperation between the agencies concerned with the proposed research led to substantial agreement between these parties on how this research should best be implemented. Consequently, it was possible to proceed rapidly with plans for implementing the research proposed in the Pasa 3-8 agreement.

From June 22 to July 5, 1963, Dr. Paul Omar, Assistant to the Director of the Entomology Research Division, and Dr. David A. Dene, selected entomological investigator for ARS research under the Pasa 3-8 agreement, traveled to Salisbury, Southern Rhodesia and Lagos, Nigeria. Because of the planning cited above, they were able, in Salisbury, to review with appropriate officials of AID and the Agricultural Research Council of Rhodesia and Nyasaland (ARC) (now the Agricultural Research Council of Federal Africa (ARC)), a proposed cooperative agreement between ARS and AID covering the implementation of the research outlined in the Pasa 3-8 agreement.

Substantial agreement was reached on the research to be undertaken and the phases of the problem to be investigated by the cooperating agencies and on coordination of the research effort. This review allowed early execution of the cooperative agreement. A copy of this cooperative agreement is appended to this report. In addition, Drs. Omar and Dene were able to:

- (1) Familiarize themselves with the tsetse fly problem.
- (2) Appraise research facilities, personnel, and equipment available for the conduct of this research.
- (3) Determine the requirements for implementing this research proposal.
- (4) Confer with appropriate officials and researchers there.

In Lagos, Nigeria, they reviewed with AID officials and representatives of the Commission for Technical Cooperation in Africa (CTCA) the details of the research proposed in Pasa 3-8 and the relationship of this research to the over-all problem of tsetse and trypanosomiasis control. The relationship between Southern Rhodesia and Nigeria was particularly helpful in planning and implementation of the Pasa 3-8. A copy of the report by Dr. Dene covering their travel to Southern Rhodesia and Lagos is appended.

From September 25-28, 1963, Dr. Carroll N. Smith, Investigations Leader of the Investigations on Insects Affecting Man at Gainesville, Florida, and Dr. Dene attended a Meeting of Experts on Trypanosomiasis convened by CTCA and held in Lagos, Nigeria. A report of the trip is appended to this report. The primary purpose of the meeting was to revise the organization of the International Scientific Committee for Trypanosomiasis Research (ISCTRI) so that the latter body could act as a council to aid and organize trypanosomiasis research in Africa. Among the many subjects discussed was the consideration of research and research priorities.

Dr. Sriji and Dr. Dame presented a detailed description of the research proposed under Pass 3-8 for consideration and review by the members. They were also able to discuss with and learn from experts at the meeting and gain research information on the biology and ecology of tsetse fly hosts and the development of the research proposal.

As a result of the close cooperation and the prompt response received, it was possible to send Dr. Dame, Mr. Ford, and their families to Salisbury, Zambia, the principal technician for ARS, Salisbury, Zambia, and their families to Salisbury in December 1963.

The ARC in Salisbury had done considerable planning for expanding its research prior to the arrival of Dr. Dame and Mr. Ford. They renovated and made available space for research by ARS investigators. They prepared plans for a suitable insectary building for research under the cooperative agreement. They have appointed Mr. John R. Ford to lead the research of the ARC under the cooperative agreement.

With the arrival of Dr. Dame in Salisbury, discussions with ARC have resulted in an outline of the work to be undertaken initially on this project.

Dr. Dame's group will study the effect of chemosterilants on the tsetse fly, Glossina morsitans. Various methods of administration of promising chemosterilants will be tested and the effects of these materials on longevity, vigor, and reproduction will be determined. Studies will be made on handling and feeding of the tsetse fly necessary for the development of research on chemosterilization.

ARC is selecting a site in which they can study the ecology and breeding habits of the tsetse fly and develop information on the possibility of mass-rearing this insect.

The ARC has related studies on the problem of the tsetse fly in progress including research on breeding sites and parasitization and sterilization by the use of gamma radiation.

Enclosures:

Copy of cooperative agreement No. 12-14-100-5453-(33)

Trip report by Drs. Oman and Dame, covering June 22 to July 5, 1963

Trip report by Drs. C.N. Smith and Dame, dated October 9, 1963

COOPERATIVE AGREEMENT

Between the

AGRICULTURAL RESEARCH COUNCIL

of

RHODESIA AND NYASALAND

and

THE UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
ENTOMOLOGY RESEARCH DIVISION

THIS AGREEMENT, entered into by and between the Agricultural Research Council of Rhodesia and Nyasaland, hereinafter referred to as the Cooperator, and the United States Department of Agriculture, Agricultural Research Service, Entomology Research Division, hereinafter referred to as the Division.

WHEREAS, the Cooperator and the Division desire to cooperate on a research project dealing with studies of the sterility method of insect control and eradication as applied to tsetse flies. These studies are undertaken to obtain information that would be of value in furthering the application of sterility methods of population control to other insect pests and would have value to the United States in the event tsetse flies became established in the Western Hemisphere. Tsetse flies do not now exist in the United States nor are there adequate facilities in this country for their study such as are available in the Cooperator's laboratory in Southern Rhodesia, and,

WHEREAS, the parties desire to enter into this COOPERATIVE AGREEMENT for the purpose of adapting techniques of sterilized male tsetse fly populations and developing methods for mass production of sterile flies so as to undertake overflooding of natural populations with sterile populations, and,

WHEREAS, the Cooperator has available and is willing to make available to the Division for use in the project laboratories, equipment, personnel, and other facilities used in the conduct of research, and,

WHEREAS, the Division desires to utilize such services and facilities as it deems necessary for carrying out the project and reimburse the Cooperator for the same as provided herein, and,

WHEREAS, close cooperation between the Division and the Cooperator provides for coordination of research projects and avoidance of unnecessary duplications, and for more effective use of personnel and facilities, and

WHEREAS, the Department of Agriculture, United States of America, through the Division of Entomology and Plant Quarantine, Department of Agriculture, United States of America, has provided property and other facilities and the Cooperator, [Name], utilizing land and other facilities owned by the Cooperator, [Name],

NOW, THEREFORE, for and in consideration of the covenants and conditions herein contained, the parties hereto mutually agree with each other as follows:

A. The Cooperator agrees.

- (1) to provide at cost for use in the project, such of the following services and facilities as may be required for the conduct of the proposed investigations outlined in (9) below, and to submit regularly to the authorized Division representative invoices or vouchers therefor:
 - (a) laboratory facilities, insectary, outdoor cages, equipment, animals, supplies, and other items as mutually agreed upon necessary for conducting studies on ecological requirements of tsetse flies and methods of mass production of tsetse flies; and
 - (b) professional and technical staff and supporting personnel, who will work cooperatively with the ARS scientist and his staff;
- (2) to furnish at no cost to the project laboratory facilities and such laboratory equipment as may be mutually agreed upon for the use of the ARS scientist and his supporting staff; and
- (3) to make available to the Division information, [Name] and to research undertaken, that may be derived from studies on climatic limits on tsetse fly breeding, radiation sterilization, and related investigations now under way and to be continued by the Cooperator;
- (4) as its contribution to the cooperation to [Name], furnish to the project such professional and subprofessional personnel, equipment, and supplies as may be mutually agreed upon;
- (5) to assume primary responsibility for the conduct of:
 - (a) intensive ecological investigations with special attention to ways of duplicating favorable natural environmental conditions for rearing tsetse flies, taking into account the relationship of rainfall, temperature, and vegetation cover;
 - (b) research in large outdoor cages up to 200 sq. ft. in size to develop ways of rearing tsetse flies in large numbers. Conditions in the screened cages will simulate the most suitable natural environments;

(c) studies on the habits of the tsetse with respect to rate and extent of migration and resting habits of the fly, and preferred sites for pupation; and

(d) investigations as may be desirable on survival of natural populations with sterile populations and field evaluation of sterile male releases, and methods of sterility that are most effective;

(6) to keep up-to-date records of experimental work and records to be made available to the Division on request;

(7) to make semi-annual reports of the progress of the work and such other reports as may be mutually agreed upon from time to time between the cooperating parties.

B. The Division agrees:

(1) to assist in defraying the cost of the work concerned with research studies on methods of inducing sterility in tsetse flies by the use of chemicals, and in studies on the rate of and vigor of sterilized flies by reimbursing the Cooperator upon the receipt of properly certified invoices and vouchers, for expenses incurred and for the cost of the use of services and facilities furnished by the Cooperator to project as outlined in A/(1), (a) and (b) of page 2 herein, in an amount not to exceed \$85,000.00, for the year 1964; in the event of renewal of this agreement as hereinafter provided, the amount of money to be reimbursed to the Cooperator shall be stated herein;

(2) to assign such members of its staff as may be appropriate and feasible to carry out the cooperative investigations;

(3) to assume primary responsibility for the conduct of:

(a) research to determine whether promising chemosterilants developed by ARS for other insects will effectively sterilize both sexes of at least one of the important tsetse fly species. Glossina morsitans will be chosen as the primary species for such evaluation but the evaluations will not necessarily be limited to this species;

(b) research to determine ways of exposing tsetse flies for the purpose of achieving sterility with chemosterilants, as a basis for further and subsequent investigations to determine how to utilize chemosterilants in practical field trials, that may be undertaken in cooperation with appropriate research agencies in Africa;

(c) study to determine the effect of various chemosterilants on the behavior and vigor of the tsetse flies in comparison with normal fertile flies;

(d) comparison of the results of the investigations and chemical analysis of the insects and their host plants, where facilities are available;

(e) such investigations on host plants and insects as may be necessary under laboratory conditions, where facilities are available;

(f) such investigations on host plants and insects as may be necessary under field conditions, where facilities are available;

(g) such investigations on host plants and insects as may be necessary under field conditions, where facilities are available, and, if the facilities are not available, the investigations may be conducted in the laboratory and in the field.

(h) such investigations on host plants and insects as may be necessary under field conditions, where facilities are available, and, if the facilities are not available, the investigations may be conducted in the laboratory and in the field.

C. It is mutually understood that:

(1) the research will be conducted in accordance with the terms and conditions of the Cooperative Agreement and assistance of the Cooperator. The work will be conducted in the laboratories of the Agricultural Research Division, ARS, at Salisbury, Maryland, and Beltsville, Maryland, and in the laboratory of the Agricultural Research Division, ARS, at Salisbury, Maryland. The research will be conducted in the laboratory of the Agricultural Research Division, ARS, at Salisbury, Maryland, and in the laboratory of the Agricultural Research Division, ARS, at Beltsville, Maryland.

(2) in accordance with the terms of Participating Agency Service Agreement No. AID/RES Fasa 3-8, between ARS and the United States Agency for International Development, ARS, as represented by the Entomology Research Division, will have operating responsibility for the work to be undertaken in Africa under this COOPERATIVE AGREEMENT,

(3) the ARS scientist assigned to the investigations in Africa will act as liaison officer between ARS and the Cooperator. His contact on general policy matters shall be the Director of the Agricultural Research Council of Romania and Hungary, and on technical matters relating to the research, a scientist designated from among those working on the research project on behalf of the Cooperator.

(4) the ARS scientist assigned to the investigations in Africa, and a scientist working on the project designated to act on behalf of the Cooperator, shall act as research leaders for their respective

agencies. These leaders will be responsible for calling, arranging for planning sessions and meetings to discuss progress of the work so that the research project may be kept active and well coordinated. The leaders will be responsible for preparing reports of progress following each 6 months of work on the project. Copies of all such reports shall be furnished the parties to this AGREEMENT;

(5) the details of cooperative undertakings shall be planned and executed jointly by the cooperating agencies, as a whole or through its appropriate subject matter units. Outlines covering working plans and methods of procedure shall be prepared jointly during the first quarter of each 12-month period during which the project is active, subject to revision by joint action as progress of the work justifies. Copies of these plans will be filed with the cooperating parties;

(6) any invention resulting from this cooperative work shall made jointly by an employee or employees of the United States Department of Agriculture and the Cooperator, or an employee or employees of the Cooperator, shall be fully disclosed, either by publication or by patenting in the United States, and any such patent shall either be dedicated to the free use of the people of the territory of the United States or be assigned to the United States of America, as mutually agreed upon by the parties to this AGREEMENT. In the event a patent is granted in a foreign country, the Government of that country shall be notified of the invention for the particular foreign country, and the Government of the United States shall be notified of the invention for the United States and Hyacinthina, and if the Government of the United States fails to cause an application for a patent to be filed in such country on behalf of the Government of the United States, the Cooperator shall have the right to file an application for a United States patent on the invention made independently by an employee or employees of the United States Department of Agriculture, or the Cooperator or an employee or employees of the Cooperator, in the absence of an agreement in accordance with the policy of the United States Department of Agriculture, or the Cooperator, respectively,

(7) the parties to this AGREEMENT shall be free to use in official correspondence any of the results obtained in each cooperative undertaking, giving due credit to the other parties. It is understood that no party will publish any results without consulting the other. Publication may be joint or independent as may be agreed upon, always giving due credit to the cooperation and recognizing the proper limits the rights of the individuals doing the work. In case of failure to agree as to a manner of publication or interpretation of results, any party may publish data after due notice and submission of the proposed manuscripts to the other. In such instances the party publishing the data will give due credit to the cooperation but will assume full responsibility for any statements on which there is a difference of opinion; and

(8) either party shall be free to furnish such equipment as may be needed and otherwise unavailable. Such equipment shall be devoted to the project until completion of the project, and thereafter shall be used so as to further the objectives herein set forth about the project. Such equipment imported into the country of the Cooperator for this project, shall be exempt from any duties, taxes, or fees, unless otherwise specified, title to all property, purchased with financing in accordance with the terms of Participating Agreement No. AID/RES Pass 3-8, between AID and the United States Agency for International Development, shall be in the name of the Cooperator.

No member of or representative of the Council of Ministers of Agriculture, and no other person, shall be authorized to act on behalf of the Government of the Republic of the Philippines in any way in connection with this agreement, and no person shall be authorized to act on behalf of the Government of the Republic of the Philippines in any way in connection with this agreement.

This agreement shall become effective on the date of signature and shall continue in force until June 30, 1963, or until terminated by either party. If either party terminates this agreement, the terminating party shall give notice of termination to the other party in writing. This agreement shall be terminated if either party terminates this agreement.

AGRICULTURE COUNCIL OF
REPUBLIC OF THE PHILIPPINES

Sept. 3, 1963
Date

CHIEF OF AGRICULTURE
VICE

Nov. 29, 1963
Date

As initially planned it was expected that our travel would enable us to meet the Director of ARC, Dr. H. C. Pereira, in Salisbury. However, just prior to our planned departure from the United States we were advised that Dr. Pereira would be in London on June 23 and we were asked to meet him there for a preliminary discussion. Accordingly we revised our itinerary and departed from New York Saturday evening, June 22, and arrived in London Sunday morning, June 23. Dr. Pereira arrived at the London airport from Salisbury, Southern Rhodesia, about 11:00 a.m. and we met him as planned. It developed that Dr. Pereira had an early commitment in London so in order to carry on our discussion we accompanied him there. Inasmuch as our time was limited, it seemed prudent to devote primary attention to the proposed cooperative agreement between ARS and ARC. The draft of the agreement was reviewed section by section and on the basis of this rather brief consideration of the document Dr. Pereira indicated that he found nothing in the draft that would not be acceptable to his organization. He asked that we supply a copy of the draft to Mr. A. W. Lovett, Secretary of the ARC, when we arrived in Salisbury, so that Mr. Lovett could make a deliberate appraisal of it.

Following our review of the cooperative agreement draft Dr. Pereira gave us a brief outline of the organization of ARC and the relationship of ARC to the organization of the Federation of Rhodesia and Nyasaland. He indicated that the organization was working out in Southern Rhodesia and that the Government of Southern Rhodesia was interested in the ARC. Dr. Pereira mentioned particularly the interest of the Government of Nyasaland in working with the ARC.

On Sunday evening and, after returning to Salisbury, we were met by Mr. Lester W. Palmer of the ARC. Mr. Palmer told us that the message received in Salisbury on the evening of the 23rd had been received by AID, and that Floyd D. Brown, Director of ARC, had indicated his desire to proceed as far as possible to the ARC, so we advised Mr. Palmer that we would go ahead on that basis.

Immediately after checking into the ARC we met in the Executive Director's office with Mr. Lester W. Palmer and Mr. R. J. Brown, Secretary of ARC. We had a very short discussion with Mr. Brown and Mr. Palmer and then went to the ARC office to meet Mr. Brown. We had a very short discussion with Mr. Brown and Mr. Palmer and then went to the ARC office to meet Mr. Brown.

After the brief discussion at Mr. Brown's office we went to the Veterinary Services Laboratories where we had a very short discussion with Mr. Brown and Mr. Palmer and then went to the ARC office to meet Mr. Brown.

Dr. G. P. ... and relative to game Mr. R. D. ... on the ecological aspects of the tsetse fly problem, Mr. W. I. ... Veterinary Officer, and his technician, Mr. M. ...

The day morning we visited ... Dr. Phelps ... Veterinary Research Officer in Charge ... grounds ... Dr. Phelps noted the ... of living flies ... the ...

... to the Veterinary ... Dr. Phelps ... small ... individually in glass tubes about one inch in diameter ... one end of which is stoppered with a cork, and the other end closed with a mesh gauze. These tubes are stored in racks and the flies are mated as they reach the appropriate age. When a female fly is about to lay eggs the tube containing the fly is placed over a funnel arrangement so that the pupae drops into sand where it then pupates. Flies are given the opportunity to feed every third day on sheep maintained in a small shed adjacent to the ... place in a building that can be heated during the cold weather to ... temperature up to that required by tsetse flies. This colony has been ... by the introduction of pupae collected at the wild from other ...

... Dr. Phelps ... Prof. Eady, who is also ... of the Department of Zoology. However, he was ...

In the afternoon we met at Mr. Ford's office ... aspects of tsetse fly research. ... Leggate, Langley (now ... University College, under a Fellowship), ... arranged over virtually all aspects of ... of detailed bits of information ... attempts at rearing under different conditions and ... in connection with different reasons of ... the work that he and Miss Leggate are doing on resting sites and ... fly movements under natural conditions. Leggate discussed game and tsetse fly infection rates, tsetse fly feeding cycles, and related matters. It was evident from the discussion that Mr. Ford and others were much interested in attractant studies. Dame indicated that he expected to undertake some exploratory work along that line.

... Dr. Forster ...
 ... in Salisbury, it was indicated that Mr. Forster ...
 ... the latter part of June for Nigeria where he would ...
 ... a fellowship arrangement ...
 ... control and recidivism ...
 ... He feels that there is great need for ...
 ... of land following elimination of tsetse fly ...
 ... his view that sufficient attention has often not been directed ...
 ... his studies in Nigeria will be along those lines.

On Wednesday morning, June 26 we went first to the South African Airways office ...
 ... from Salisbury via Johannesburg, South Africa, ...
 ... on Friday afternoon, June 28. At the time we left Washington ...
 ... that all segments of our itinerary had been confirmed. However, ...
 ... the South African Airways and subsequently from the ...
 ... Johannesburg that their flight 701 on Friday from Johannesburg to Lagos ...
 ... booked and were told that we were to that effect ...
 ... We enlisted the assistance of the travel section of AID/Salisbury in ...
 ... an effort to find some way of arriving in Lagos in time for our ...
 ... meeting with AID and CCTA personnel on Saturday, June 29. It developed that such an ...
 ... arrangement was not possible. The earliest transportation available from Salisbury ...
 ... to Lagos would not put us in to Lagos until Saturday night. In addition, it would ...
 ... require travel via Brazzaville in the Congo and Douala in the Cameroons with about ...
 ... a 14 hour layover in Brazzaville and a change of airlines in Douala. We were told ...
 ... that airline schedules on this route were not dependable and since we had no visas ...
 ... to be in the Congo we decided to delay departure from Salisbury ...
 ... get direct travel to Lagos. The earliest date on which this could ...
 ... be done was Tuesday, July 2. We made plans accordingly and requested AID/Salisbury ...
 ... regarding the change in our itinerary. We also requested ...
 ... AID/Washington advising of our change of schedule. Omar ...
 ... time through the office of W. Lovatt on the ...
 ... and necessary arrangements for ...
 ... from Lovatt had contacted

... at 11:00 with Mr. Innes, S. Keene, Assistant ...
 ... Mr. F. D. Larson, Area Agricultural Advisor, AID, Inasmuch as ...
 ... discussions involved matters of ...
 ... Lovatt accompany us, and he did so. There was ...
 ... reactions from the Governments of Northern Rhodesia and Nyasaland with ...
 ... to plans to locate the tsetse fly studies in ...
 ... on the reaction of CCTA regarding the decision to work in

Southern Rhodesia. We had a rather thorough discussion of the pros and cons of locating the work in Southern Rhodesia or elsewhere in Africa. I had the impression that the discussions served to clarify the issues involved and establish that the particular line of investigation authorized under Para 3-8 could not be carried out effectively if headquartered elsewhere than Salisbury, since ARC and other cooperating personnel are located there. Mr. Lovatt pointed out that two of the ARC field research stations were located in Northern Rhodesia and that the ARC would continue to work with Northern Rhodesia and Nyasaland after the Federation was dissolved.

We learned that AID headquarters are being moved from Salisbury to Beautyre-Limbe, Beaulana, and that only a skeleton organization will remain in Salisbury. A substantial AID organization will be located at Lusaka, Northern Rhodesia. These changes will have some bearing on logistical support that might be expected from AID/Salisbury.

AID/Salisbury had not yet received copies of Para 3-8. We supplied copies and as a result of a preliminary scrutiny of the agreement some questions were raised that obviously needed further discussion. Accordingly, it was agreed that we would meet again on Friday morning, June 28, at which time the AID personnel would have had an opportunity to give careful consideration to the documents.

On Thursday, June 27, in company with Mr. Lovatt and Mr. Pilson we flew via a chartered plane to Kariba where the ARC has a field research station. Dr. Phelps, Miss Leggate, and some other personnel from Salisbury had traveled by automobile to Kariba on Wednesday and arranged to meet us at the airport at Kariba. En route to Kariba we flew over the northeastern portion of Lake Kariba, an enormous body of water, formed by impounding the Zambezi River with a dam at Kariba. This impoundment is now completely filled so that Lake Kariba is some 175 miles in length and up to 50 miles wide at some points. There are numerous islands within the Lake, on some of which tsetse fly research is or will be conducted. One of the most conspicuous features of the Lake were enormous mats of Salvinia auriculata, an aquatic fern that promises to be an extremely serious pest. Salvinia auriculata is a South American Plant adventive to Africa.

The Zambezi River basin is well populated with tsetse flies, particularly in the vegetative type around Kariba that is referred to as "mopane". At this season of the year the area is quite dry, although the grasslands have not dried out to the point where they will burn completely. During the day we visited a number of localities in the vicinity of Kariba where different phases of tsetse fly research are carried on. In the vicinity of the airport, for example, several Africans were engaged in searching for tsetse fly pupae. Some 10 or 12 miles away in the Charara area, we visited a livestock paddock in the bush where animals are maintained and where regular "fly rounds" are made to sample tsetse fly populations. A demonstration fly round produced a fair number of flies. We recorded a complete documentation of these activities with photographs. We returned to Salisbury about 6:00 p.m.

The following morning, June 28, accompanied by Mr. Lovatt, we met with AID for further discussion with Mr. Keehn and the AID Counselor, Glenn J. Rainey, on administrative matters that might involve problems. Mr. Lovatt left the conference at we completed the discussion of procurement procedures. Further discussion was held

Tuesday, July 2, in company with Dr. Phelps we made a further inspection of residential areas before proceeding to the airport for departure to Johannesburg and Lagos.

Wednesday, July 3, we arrived in Lagos, Nigeria, approximately on schedule about 10:00 a.m. We were met at the airport by Mr. J. W. Williamson, Regional Veterinary Officer with US AID, who assisted us through customs and took us to the Bristol Hotel where a room had been reserved for us. It was agreed that we would meet at Williamson's office at 8:30 a.m. for a brief meeting before our meeting with CCTA personnel at 9:30.

At our meeting with Mr. Williamson we also met Harold Keen, District Officer and Veterinary Officer with AID, and subsequently J. B. Davis, Director of Agriculture. Mr. Keen is an entomologist by training and Mr. Davis is a generalist.

It was rather evident that there was some concern in Africa regarding the tsetse fly research outlined in Paragraphs 3-8 of our report. Williamson pointed out that resolutions passed at the CCTA meeting called for a comprehensive program of tsetse fly investigation along lines as outlined. It was not possible in the limited time available for us to proceed to the CCTA offices to have a thorough discussion of the factors that influenced selection of Southern Rhodesia as the logical location for the work.

We accompanied J. B. Davis and J. W. Williamson to the CCTA offices where we met Mr. Marc de Tondeur, Secretary General of CCTA, Michael de W. Ensor, Secretary, Mutual Assistance Foundation for Africa (FAMA), and Sinali Coulibaly, Assistant Secretary, FAMA, who it is anticipated will replace Ensor as secretary when the latter leaves the CCTA about April 1964.

FAMA was described as the operational side of CCTA. CCTA, with headquarters in Lagos, was established in 1950 by the Governments then responsible for administration in that area - U. K., France, Belgium, Portugal, and the Union of South Africa - to pool their experience and know-how among government technicians on mutual scientific and technical problems. It is advised by an independent group of scientists, The Scientific Council for Africa.

Mr. Davis opened the discussion with a résumé of developments leading up to the development of plans for the tsetse research outlined in Para 3-8 and then referred to Oman and Dame the further discussion of technical matters relating to the work. We summarized the scope of investigations envisioned in Paragraph 3 and the hoped for results. The discussion that ensued was rather thorough and penetrating as to the factors that influenced our decision to locate the work in Southern Rhodesia.

At the end of our conference with the CCTA people we saw no evidence to indicate that they had serious objections to locating the work in Southern Rhodesia. In fact it was freely admitted that the West African Institute for Trypanosomiasis Research and the East African Institute for Trypanosomiasis Research had both become ineffective as research organizations and that there would be no expectation that suitable technical cooperation would be available at either location.

Mr. Williamson later succinctly stated the situation to the effect that on technical grounds, we really had no choice but to locate the work in Southern Rhodesia.

Reference was made, during our discussion with CCTA representatives, to the Meeting of Experts scheduled for September 25-28 in Lagos. We indicated that Dr. Carroll N. Smith and Dame would represent our Department and IAD and that one of these individuals would be prepared to present a paper on the possibility of using chemosterilants for tsetse fly control or eradication.

Thursday, July 4, was spent in Lagos awaiting departure for New York later that evening. We arrived in New York, July 5 at 7:30 a.m. [unclear] attached.

October 9, 1963

Report on Travel to CCTA Meeting in Lagos, Nigeria

Carroll N. Smith and David A. Dame
Insects Affecting Man & Animals Research Branch, Entomology
Research Division, Gainesville, Fla.

This report deals with the combined activities of Carroll N. Smith and David A. Dame in Nigeria from September 21-27, 1963. The primary reason for the trip was to attend a meeting of trypanosomiasis experts held in Lagos on September 28-28 under the auspices of the Commission for Technical Cooperation in Africa (CCTA). We also took advantage of the opportunity to visit the WHO Insecticide Testing Unit, stationed at nearby Yaba, and visited the experimental villages where Dr. Bar-Zeev is conducting field trials with OMS compounds.

The CCTA meeting was called primarily to revise the organization of the International Scientific Committee for Trypanosomiasis Research (ISCTR) so that the latter body could act as a council to aid and organize trypanosomiasis research in Africa. Among the many subjects discussed was the consideration of research priorities, including chemosterilization of the tsetse fly. An afternoon session was set aside for our presentation of the paper "Chemosterilization - A New Field of Research in Tsetse Fly Control" and the ensuing discussion. Although one representative (M. P. Cunningham, Uganda) commented that Americans tend to upset the status quo in African research stations, our project in Salisbury met with general approval and engendered a number of questions concerned with the technical aspects of the project. Several of the participants expressed considerable disagreement on technical points, probably due to their own limited experience with many species in different environmental conditions. They were, however, generally conceded that large scale research in the field in an environment would be quite difficult, but was worthy of serious investigation. Although there was no mention of the alternative sites for the proposed project, several of the experts indicated that Glossina morsitans might not be a suitable an insect for field trials as G. palpalis. The group recommended that recognition and approval of the Entomology Research Division tsetse fly project in Salisbury be included in the formal recommendations.

The paper presented was turned over to the CCTA and was accepted. We agreed to keep ISCTR informed on the progress and details of the project in Salisbury, with the understanding that such information would be considered confidential and incomplete until it had been published through normal outlets.

During the course of the conference, Mr. J. Ford indicated that he would resign in November 1963 from his present position in Salisbury as Assistant Director of Veterinary Services, Director of Trypanosomiasis Research, and was not yet engaged in another post. He mentioned the possibility that the British Government might take him into his organization in a capacity similar to that of the present Director, but this situation had not yet crystallized. It is considered that the absence from Salisbury might make our project much more difficult.

During the conference and in private discussions several sites were proposed for field trials with the sterile male technique. One which appeared particularly promising is the Bugesera area in Rwanda-Urundi. The Bugesera is approximately 60 square miles in area and its tsetse population is physically isolated; G. morsitans is the only species present and control work which has brought its density down to 10-15 flies per square kilometer. The area is presently being developed by the European Common Market for colonization and tsetse control is being directed by Mr. E. J. E. Buyckx, Chef de la Mission Inséparée au Bugesera, B.P. 139, Kigali, Rwanda. We were informed that this area might be available for field trials for the next 3 or 4 years. Mr. Buyckx, who has devoted much effort in the Bugesera work is resigning from his position in January 1964, and is very much interested in the possibility of being engaged by Dr. Pereira of the ARC to work on the mass rearing project. We recommend that Dr. Pereira be informed of Mr. Buyckx's availability.

It was our feeling that the proposed tsetse chemosterilization and rearing project was well received and we found the resulting discussions to be quite informative and stimulating.