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MEMORANDUM ON TRIP TO AFRICA AND GENEVA, OCTOBER 31st to DECEMBER 10, 1959

Left Washington 4:30 P.M., October 31st. Arrived in Brazzaville about 11:00 o'clock, November 2nd, proceeding to Leopoldville for sleeping accommodations.

Attended the Malaria Eradication Technical Meeting from November 3rd to 6th, inclusive, and the Symposium on Pesticides in the same locale from the 9th to the 13th of November.

Left Brazzaville 2:40 P.M., November 15th, sleeping the night at Douala in the Cameroons.

November 16th, proceeded to Accra, the capital of Ghana, where I was met by Dr. L. Charles, the official consultant to the Ghana Government on malaria.

On November 17th, traveled by car from Accra to Ho, where the World Health Organization has a new station for malaria investigation.

On November 18th, traveled by car with Dr. Charles to Kumasi, proceeding by car onward to Tamale, and by traveling after dark, arrived in Bolgatunga at 8:00 o'clock in the evening.

Remained in Bolgatunga the nights of the 19th, 20th, and 21st, returning by car on Sunday the 22nd to Tamale, and continuing by Ghana Airways plane to Accra, arriving at 4:00 P.M. Spent the night of the 22nd in Accra, and flew on November 23rd to Robertsfield, Liberia.

November 24th, 25th, 26th in Monrovia. November 27th to Kpain with Dr. Washburn and Mr. Pardee.

Remained in Kpain until December 1st, returning to Monrovia with Dr. Gatuso. December 2nd, 3rd, and 4th spent in Monrovia, proceeding on December 5th to Harbel, spending the night with the Liberian Institute. Pleasant day on December 7th at the Institute, proceeding on December 7th to Lisbon by way of Pan American Airways Flight 153, arriving Lisbon 23:00 o'clock.

December 8th left Lisbon by Swissair at 7:45 A.M., arriving Geneva 12:00 P.M.

Left Geneva December December 11th, arriving in Washington December 12th.

The above itinerary covers roughly two weeks in Brazzaville, one week in Ghana, two weeks in Liberia, and one week traveling to and from Geneva.

Overall impressions of the situation in Africa:

1. The situation technically with regard to the possibility

Copy in Malaria, Afr. confidential

of malaria eradication in Africa seems to be clearer than it was some months ago.

Dr. McDonald, the Chairman of the Malaria Meeting in Brazzaville, called attention on the first day of the meeting to the statement on pages 13 and 14 of Document AFRO/MAL/5 that malaria in Africa cannot be eradicated by insecticides alone, and asked for a discussion on this point. After the week's discussion, Dr. McDonald brought up this same question again and went from delegate to delegate without being to get any clear-cut negation of the possibility of eradicating malaria by insecticide. There were statements to the effect that it would be difficult, it would be expensive, and that problems of personnel and of transportation would be most difficult of solution, but no one was able to bring up any definite reason for not doing the job.

Although there may be different situations existing in the various parts of Central Africa, it appears from studying the report of Dr. Lividas of the World Health Organization on some work done at Yaounde in the Cameroons, and of Dr. Guttuso of the World Health Organization in Liberia, that a careful systematic application of DDT to all buildings and shelters in which human beings sleep will prevent malaria transmission in the areas of West Africa where the principal vectors are Anopheles gambiae and Anopheles funestus.

In the case of the Cameroons, the local authorities had reported failure to stop transmission with insecticide, but on careful questioning, the Chief of the Service admitted that his men had struck whenever he had insisted on their getting away from the ~~border~~ highways and spraying the rice kitchens and shelters on the isolated farms.

In Liberia where the World Health Organization has been operating since 1953, the early years were marked by failure to stop transmission, but since April 1958, when Dr. Guttuso arrived and insisted ~~not only~~ on thorough spraying of the entire interior of all of the houses in the villages and of all isolated shelters on farms, there has been no difficulty in stopping transmission. This result was foreshadowed by the report of Dr. Giglioli, which was prepared in July of 1957 after two and a half years in the interior of Liberia. Dr. Giglioli, an entomologist, insisted in this report that the use of insecticide in the villages stopped the breeding of both gambiae and funestus in and around the villages and that neither of these two mosquitoes were found in ~~a~~ high forest until after the arrival of settlers and was then limited to the area immediately around the individual farms. Dr. Giglioli from the beginning refused to accept the idea of exophily, and states clearly in his report that if malaria was continuing in the sprayed villages, it was a case of malaria without anophelism.

2. The problem of resistance to insecticides seems to be of less importance in Africa than was previously stated and feared. Although there is definite resistance to dieldrin in certain parts of West Africa, this insecticide is being used in Zanzibar and certain areas of East

Africa without any appearance of resistance. Resistance to DDT has not appeared in West Africa in areas with dieldrin resistance. (Some previous reports of such resistance were apparently based on imperfect tests.)

3. At the Meeting in Brazzaville there were some comments and discussion on the importance or lack of importance of malaria to the African population. Dr. Pringle from Tanganyika referred to studies which had been made there attempting to differentiate between the physical status of children with and without malaria in the same areas. During a week in Ghana and two weeks in Liberia in which I travelled much in the interior of both of these countries I inquired at each dispensary and hospital where we stopped regarding the importance of malaria in the life of the adult African. All of those doing clinical work were unanimous in insisting that although malaria is not primarily a disabling disease of the adult African it is an important factor in the course of other diseases and in preventing the adult African from being a regular and willing worker. Repeatedly I heard the statement that treatment of malaria was considered to be an integral part of the treatment of dysentery and practically any other infection that the individual might have when he came to the dispensary or hospital.

4. The political development towards independence and the creation of additional African states had not proceeded nearly as far last November as it has at the present time. At the meetings in Brazzaville and everywhere we went in West Africa there was a more acute sense of impending change than one could possibly feel from a distance of several thousand miles in the United States. One cannot avoid the impression that the development of new nations is going to create a situation in which the United States will be called upon to consider assistance to Africa in a way and on a scale which was not possible during the colonial period. It is obvious that to those who are familiar with malaria in tropical areas particularly in Africa that the proper utilization of technical assistance funds in all fields — agriculture, education, industry, transportation and in other health fields, is dependent upon the control of malaria. In Africa where the ever present Anopheles gambiae and A. funestus are such tremendous vectors of malaria, the solution of the problem can hardly be a local one. It is obvious that malaria programs in Africa should begin covering a very large area and must be ready to expand at the periphery even beyond national boundries if they are to succeed and permanently protect the populations concerned.

5. The situation in Liberia merits special comment because of the existence of two malaria services there, the one an ICA sponsored project, the other under the auspices of the World Health Organization and of the recent proposal that these services should be amalgamated. The United States became involved in malaria control in Liberia early in World War II when a considerable number of U. S. personnel were stationed in Liberia especially at Robertsfield. In 1953 the World Health Organization began a pilot study of the prevention of malaria in the forested areas of West Africa through a field unit at Kpain. Since this unit was an experimental unit it was established with WHO control of operations and an entirely different type of administration from that of the ICA and the Government of Liberia malaria program.

The small country of Liberia with a population of not more than one million people cannot be justified in maintaining two malaria services. The proposal was made some months ago that the ICA and WHO programs should be fused. The initiative in this proposal came from the USOM. (I had an opportunity to discuss this proposal with Mr. Babcock, the Chief of USOM in Liberia and with Dr. James Ward, ICA Public Health Officer, stationed at Monrovia before leaving Washington.)

Dr. M. A. C. Dowling and an administrative officer of the Regional Office of the World Health Organization for Africa visited Monrovia in September and made a proposal which might serve as the basis for negotiating ICA/WHO collaboration in malaria eradication in Liberia.

Advantage was taken of the presence of many interested parties in Brazzaville on November 7 to have a discussion of the Liberian problem. Present at this meeting were Drs. Bruce-Chwatt, M. A. C. Dowling, Malaria Consultant in the Regional Office, Dr. Guttuso, the WHO Chief of Operations in Liberia, Dr. Washburn, the newly appointed Entomologist to ICA in Liberia and myself.

Points which came under special discussion at this meeting were 1) the necessity or not of using larvicides in Monrovia and if so what larvicides should be used, 2) the appropriateness of using malaria eradication funds for controlling pest mosquitoes, 3) the capacity of Dr. Guttuso and his World Health Organization group to take over the responsibility for all of Liberia and 4) the advisability or not of having USA and WHO technical staff working together on Liberia projects since there are important differences in conditions of employment.

I refused to make any commitments until after visiting Liberia.

After visiting the WHO field operations in Kpain and the ICA activities in and around Monrovia and discussing the situation with the Minister of Health, and learning something of the administrative irregularities tolerated in this country, I found it difficult to believe that there is any future for an ICA/GOL Malaria Eradication Program as now organized. Likewise, I believe there would be no future for a WHO controlled program operating here under the same conditions that ICA has been forced to operate. The one absolute necessity here for success is an administration outside of all political control and financial intervention of the Liberian Government. Independence of action and financing might conceivably be arranged if it were possible to establish Liberia as a demonstration national eradication area in which an extensive program would be established covering the entire country with the expectation that once this has been done arrangements could be made for continuing expansion until the entire area from Mauretania and Senegal to Nigeria has been covered.

The WHO proposal provided for something much less than an attempt to cover Liberia and was limited to an extension of the WHO area in the interior directly out to the coast, taking in Monrovia and probably three quarters of the population of the country. While it is true that actual development in Liberia might be slow and extension to the coast as suggested by WHO may well be the logical next step, nevertheless the planning and the programming and the financing should be, from the beginning, on the basis of a national program.

The Malaria Eradication Program in Liberia can be recommended only under certain very favorable conditions. With the intense transmission of malaria which occurs in uncontrolled areas and with the constant movement of population in this part of the world, eradication to be successful must start on a fairly large scale and must be ready and able to expand. It is to be hoped that the program for the eradication of malaria in Liberia can be set up as a demonstration national eradication program to be given special financing and special staffing as a demonstration and training area for eradication programs in other parts of West Africa. (By West Africa, in this report, one means particularly that part of West Africa lying South of the Sahara and North of the Gulf of Guinea extending from Mauretania to the Camerouns.) The entire Liberian program should be considered as a pilot project and at the same time as an international training area for other parts of West Africa. The program should be presented to and discussed by the Regional

Committee of the World Health Organization from the standpoint of a regional effort in which all of the countries of this part of Africa have a definite stake. Other countries should be advised from the beginning that as this program becomes successful it will be essential to extend its operation in every direction.

It should be repeated that this program should not be undertaken on a minimal budget but that arrangements should be made to get adequate Government, WHO, UNICEF and ICA financing in accord with the importance of this program for the rest of the area.

.. On arrival in Geneva I had an opportunity to talk over the situation in Liberia with Dr. Bruce Chwatt and later with Drs. Alvarado and Kaul. During this latter discussion I made the following suggestions:

1.) Early action should be taken now to avoid the development of an expansion of the ICA/GCL program which might jeopardize the development of an eradication program.

2.) Assume that the WHO project with Dr. Guttuso is going to continue to be successful.

3.) The plan of operations for Liberia should be on a country wide basis including obvious districts of Guinea where the population is contiguous with that of Liberia; these districts are already being used by Guttuso for certain studies of insecticides.

4.) Recommend against attempting to fuse the ICA/GCL and WHO Malaria Programs since these programs are organized on an entirely different basis and have no similarity either in standard for personnel, payroll nor operational procedure. Recommend rather that WHO extend its program to cover the country with the present ICA/GCL Staff being made available to the Government for pest mosquitoe and insect control.

5.) Insist on national program planned in such a way that there should be no interference whatever from the Minister of Health.

6.) Set up the Liberian project as a pilot malaria eradication program for the region of Africa insisting that it is of more than national interest and therefore must not be subject to national political pressures.

7.) Recommend that this project be approved as a regional program of the World Health Organization only if the Liberian Governmentacquiesces in the conditions and financing needed.

8.) The negotiations for this type of program should be made with no less an authority than the President of the Republic. The President should be convinced that this is the greatest prestige building program in Africa since professional people from other countries will be brought here to learn how to administer eradication programs.

9.) Plan from the beginning the strategy of future work in West Africa looking for other points to start in cleaning up the area between the Senegal and Camsrouns as soon as the Liberian project is well organized and beginning to show results.

10.) Make arrangements as soon as possible to avoid the necessity of ICA building up the staff which would cause complications later.

During the discussion of these proposals with the WHO group, Dr. Kaul stated it as his opinion that it would not be right to try to run an eradication program without having the Government of Liberia in charge of the operation with WHO acting as an advisor. I pointed out that the pilot project now in Liberia is being run by Dr. Guttuso. To this Dr. Kaul replied that the present program is a pilot project and I come back insisting that the eradication program itself has to be considered as a pilot project if this job is going to get done under Liberian conditions.

6. A record should be made in this report of the fact that Dr. McDonald as Chairman of the Meeting in Brazzaville specifically requested me to discuss the question of dosage and cycle of application of insecticides. This I meticulously refuse to do since I was not thoroughly familiar at the time with the attitude of the ICA on this point. Dr. Dowling proceeds to present the WHO program of two grams per square meter twice a year.

7. In the discussion of malaria eradication in Africa I point out to several persons that the use of residual insecticides inside houses may not be the cheapest and most efficient way of getting rid of malaria in some of the desert and semi-arid areas. I call attention to the fact that in the eradication of Anopheles gambiae from Brazil it was found in Cumbe, a small area which had been reserved for study of the biology of gambiae, that complete eradication of the species had been possible in a three weeks period when all of the potential breeding places were dusted with Paris green. The empty pail method of application of Paris green makes the operator so mobile that work can be done on a much more economical basis than was possible when it was considered necessary to have powder pump guns for the application of Paris green in dust.

8. With regard to surveillance Dr. McDonald the Chairman and Dr. Bruce-Kwatt did not oppose the idea of using surveillance to indicate the places where malaria eradication is continuing. They both admit that under African conditions the attempt to find and treat all parasite carriers would be a most difficult undertaking. The documents of this conference then are contrary to those of other conferences in that surveillance is recognized as a search for places where transmission is continuing rather than a search for all of the individual cases.

9. One of the curious observations in Africa on my recent trip was the strange reluctance of many people to acknowledge or admit the importance, the unique importance, of malaria in this continent. One of the several discussions as to the propriety of concentrating on the single problem, malaria, until this problem is done in, rather than considering it just as one of many problems to be tackled simultaneously, was with Dr. Nelson from Kenya, who is now doing research work, but was previously in public health administration. The following quotation is from my diary of November 6, 1959:

"Yesterday Dr. Pringle who is doing investigations in Tanganyika expressed some doubts as to the economical feasibility of eradicating malaria from Africa although he clearly states his conviction of the technical feasibility of eradication in East Africa. At the big party given by the French Government last evening, this comment of Pringle's came up for discussion with Dr. Nelson who used to be a public health advisor but is now doing research. Nelson raised the old question of whether with all of the health problems which exist, it is justifiable to concentrate large amounts of money and numerous personnel on a single disease especially when it cannot be clearly shown that this single disease is the most important health problem or even that this disease is an important cause of death. Nelson insists on talking as a public health administrator and not as a Malariologist. I take the time, even in the heat and humidity of the steaming throng of blacks and whites to explain:

"1.) That I am not a malariologist.

"2.) That as Director of the PASB and Regional Director of WHO, I had general responsibilities for all health conditions in the Americas.

"3.) That the general attack on all disease which Nelson would seem to approve pre-supposes the existence of well-trained health workers.

"4.) That such well-trained health workers to work in rural Africa will not be available for at least another generation.

"5.) That the first line of attack on many other problems such as under-nutrition, tbc and even education is through the elimination of malaria.

" 6.) That the funds for malaria eradication do not come necessarily from the general health funds but can be often largely raised for the special purpose of malaria eradication.

" 7.) That it is not possible to get coordinated action of a large number of countries on general health programmes for a region but that it is possible to get interest in a general attack on a specific problem.

" 8.) That the world attack on malaria is setting a precedent for other diseases, for animal diseases, for plant diseases and insect and animal and plant pests, as well as for international cooperation in widely-diversified fields.

" 9.) That the idea that malaria is a patriotic disease that does not kill Africans is as great a myth as was the reputed patriotism of yellow fever in Brazil. (Dr. Nelson had said that studies made by a pair of doctors in East Africa had failed to show great physiological improvement among children after malaria had been eliminated without ever indicating at what period after elimination of malaria the statement had been made; when I asked about the infant mortality rate Nelson replied that it is 300/1000 in first 12 months of life but that this high mortality could not be attributed to malaria since all of the children who died from whatever cause have parasites in the blood and/or live!!!) Of course I repeat once more for Nelson the story of viscerotomy in NE Brazil.

as do also all of those who

"10.) I finish by telling Nelson that there is no question but that the history of Africa in the next generation can still be vitally affected by what is done in this generation in the elimination of malaria."

60 The Report of the Entomologist, 1955 to 1957, by M. E. C. Giglioli, of July 10, 1957 prepared at Kpain, Liberia was found by Dr. Fred L. Soper lying on Dr. Guttuso's library shelf at Kpain. This document was considered to be of such importance that it was taken to Monrovia and copied at the USOM headquarters.

Since Dr. Soper had heard no mention of Giglioli's studies in Liberia during the many discussions of Anopheles gambiae and A funestus activities in Africa at Brazzaville, Dr. Soper made a request for this report on arrival in Geneva at the World Health Organization's malaria headquarters. The report was found there in the files, but little attention had been paid to this report apparently because of the adverse comments of Dr. Zulueta, dated October 3, 1957. Zulueta criticized the work of Giglioli because Giglioli had established too large a number of capture stations to permit frequent visits. Zulueta also criticized Giglioli for not having made tests on Anopheles mosquitoes for susceptibility to dieldrin. The fact that dieldrin resistance was observed in this area very shortly after the termination of Giglioli's studies probably accounts for the discrediting of Giglioli's other observations which are believed by Dr. Soper to be of primary importance.

Giglioli explained in his report the lack of susceptibility tests in his area due to the scarcity of anopheles in the treated areas; Giglioli simply did not find adult mosquitoes in the sprayed villages and although the numbers of anopheles found in isolated shelters and rice kitchens were sufficient to explain the convenient transmission of malaria they were not present in numbers permitting statistical studies on resistance.

The important contribution of Giglioli was on the distribution of gambiae and funestus which he could not find in uninhabited forest areas and which he could not find in sprayed villages.

One important note is to be found in Zulueta's letter, however, which does have, I believe, considerable application to the situation in Africa during recent years. To quote Zulueta "I am always surprised to find in among malaria projects how much attention is paid to the behavior of mosquitoes and how much entomological research is carried out, whereas the actual spraying work and particularly complete coverage by spraying becomes of very secondary importance and of this I think Liberia affords a good example. I would like to see research experiments and research of how to gain the goodwill of the farmer's living (working) far away in the forest, and how to spray their huts in time." (Zulueta fails to point out that it was Giglioli the entomologist studying the behavior of mosquitoes who criticized most severely the control service at Kpain which was not getting out and spraying the rural farm shelters.)

4. Present status of DDT in Africa. Considering other reports on the use of DDT in Africa, the following quotation from AFRO/MAL/L-15 of October 23, 1959, review of the Malaria Program in the African region by M. A. C. Dowling is of interest; Page 5. DDT "in spite of its many disadvantages (for example irritant affect, lower initial toxicity to anopheles) continues to give excellent results when properly applied. In Liberia, where the conditions for residual spraying are extremely difficult the concentration of total coverage and an efficient application has resulted in the apparent interruption of transmission over a wide area ... A thorough application of DDT alone in the absence of any associated chemoprophylaxis, has produced the most encouraging results."

Also in relation to DDT versus drugs, we find on Page 7, "The use of drugs in the malaria programs in the African region. Mass chemoprophylaxis as an auxiliary to residual spraying has been tried out in a number of territories within the African region.... The results have been on the whole, disappointing largely due to the fact that a total coverage of the population with the drug has not been achieved; in those areas where 100 per cent coverage of the inhabitants has been obtained the results have been universally excellent. Such conditions cannot often be obtained and it would appear therefore that mass chemoprophylaxis should only be reserved for areas where it has been conclusively shown that residual spraying with total coverage cannot interrupt transmission by itself. It is not considered that this conclusive evidence has been demonstrated in any project in the region."

12. The visit to Ghana was a most interesting one largely because of Dr. Charles and his facilitating my trip to Ho and to Bolgatonga in the Northern part of the country. I met the chief of the UCSM Mission, Mr. A.F. Moffat and Mrs. Pinder, and Mr. Simpson. Mr. Simpson particularly asked regarding my impression of the malaria situation in Ghana and what might be done about it by ICA. I found Mr. Moffat very much interested and convinced that malaria is one of the important problems of this part of Africa. (I also had an opportunity to discuss malaria with Mr. Moffat at the home of Mr. E.S. Neal in Monrovia some days later.)

The efforts at malaria control in Ghana leading up to eradication are supposed to begin in 1960 but there seems to be woefully little preparation. The World Health Organization has a station at Ho where some work is being done on entomology and on therapeutics of cases and arrangements have been made for a study on the use of drugs and salt in the Northern part of Ghana beginning in February. It is too early to give any results from either of these study areas.