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REPORT OF THE FIRST BORNEO INTER-TERRITORIAL  
MALARIA CONFERENCE

The first Borneo Inter-territorial Malaria Conference, convened by the World Health Organization for the purpose of planning co-ordination of antimalaria campaigns in Brunei, North Borneo and Sarawak, was opened at the Council Chamber of the Secretariat Building in Kuching, on 22 February 1956, by His Excellency the Governor of Sarawak, Sir Anthony Abell.<sup>1</sup> It was attended by the Directors of Medical Services of North Borneo and Sarawak, the State Medical Officer of Brunei, the Resident Representative of the UNICEF Thai Area Mission, the WHO malaria project staff from North Borneo and Sarawak, and the WHO Regional Malaria Adviser for the Western Pacific.<sup>2</sup>

Dr W. Glyn Evans, Director of Medical Services of Sarawak, was elected Chairman. The first two days of the conference were devoted to discussions on the progress and expansion of the antimalaria programmes in Brunei, North Borneo and Sarawak, and on ways and means of co-ordinating these programmes with a view to controlling malaria and ultimately achieving the eradication of the disease. A session was utilized to examine and discuss the sprayers used in the operations. The meetings were informal in character. Dr F. J. Dy, WHO Regional Malaria Adviser, served as secretary.

COUNTRY MALARIA PROGRAMMES

Brief discussions were held on the progress and contemplated expansion of the malaria programmes in the three territories.

Brunei

The population of Brunei is estimated to be about 55 000 of which some 40 000 live in towns and about 15 000 in rural areas. Residual spraying with DDT

<sup>1</sup> The speech of H.E. the Governor is in Annex II.

<sup>2</sup> List of participants given in Annex I.

was started in late 1953 with technical assistance from WHO staff. In 1955, the residual spraying operations covered 2550 houses in 152 villages in an area of about 500 square miles, giving protection to approximately 15 500 people. Spraying was conducted every six months with a dose of 2 grams DDT per square metre. In Kuala Belait and Seria, the British Malayan Petroleum Company undertakes the operations. Brunei town itself is claimed to be malaria free, but residual spraying is conducted upon request of the house-owners, chiefly for the control of nuisance mosquitos.

The antimalaria operations are conducted by two antimalaria assistants with a complement of foremen and labourers working under the supervision of health inspectors. A malaria survey was conducted under the supervision of a WHO malariologist prior to the first round of spraying in 1953, and it was considered highly desirable to conduct another malaria survey with assistance from the staff of either the malaria team in North Borneo or that in Sarawak.

#### North Borneo

Preliminary observations are being made preparatory to the first residual spraying operations which will start in April 1956. Three areas have been selected in the Interior Residency for detailed observations, namely, an area to be sprayed with DDT, another area to be sprayed with dieldrin, and a third area which will not be sprayed but which will serve as a comparison area. In spite of the experience gained in the Sarawak malaria pilot project, it was considered essential to continue the observations in the pilot project in North Borneo for at least one year, in view of the apparent differences in the bionomics of A. leucosphyrus leucosphyrus (vector species in Sarawak) and A. leucosphyrus balabacensis (vector species in North Borneo). There are also some differences in the type of housing in the two territories which might affect the conduct of operations. The experience gained in the pilot project in North Borneo will be utilized in the development and expansion of the programme. This pilot project is also being utilized to train local personnel.

One of the objects of the pilot project is to determine if one round of spraying per year would be adequate to protect the people against malaria.

In addition to the pilot project, it has been planned to spray the houses of from 25 000 to 30 000 people in either the southwestern or western part of the territory in 1956.

### Sarawak

The Sarawak malaria pilot project, which was started in 1952, has shown that malaria transmitted by A. leucosphyrus leucosphyrus can be controlled by residual insecticides. Observations are still being made in the Baram district where the first round of spraying was conducted. In 1955, the team sprayed the houses of about 12 000 people in the Baram district with a dose of 2 grams DDT per square metre. The houses of the same number of people in an area in the First Division were sprayed with dieldrin water dispersible powder in March 1955. Two dosages were used, 0.25 gram and 0.50 gram per square metre. Observations are being made to determine if one spraying a year with either DDT or dieldrin is sufficient to provide the necessary protection. Plans are being made for the expansion of the spraying operations in 1956.

### SPECIFIC PROBLEMS

The conference discussed a number of problems connected with the antimalaria campaigns in the three territories, of which the most important are the following:

#### 1. Personnel

There is a scarcity of trained antimalaria workers, and in at least one of the territories, it has been difficult to keep personnel after they have been trained, due to the temporary nature of the appointments. It was decided to raise this question with the respective governments with a view to attracting more suitable antimalaria personnel and retaining them in the service by providing security of tenure.

#### 2. Movement of population

Great concern was expressed about the traffic in some areas across the border from Kalimantan (Indonesian Borneo), where it is believed that no active antimalaria campaigns are undertaken. It was feared that the absence of an antimalaria programme in the border areas of Kalimantan would adversely affect the campaigns, particularly in two of the three territories. This would be a serious

problem when territory-wide spraying operations are undertaken for a limited number of years with the object of eradicating malaria before resistance of the vector species to insecticides can develop.

The conference agreed that the best solution to this problem was to have a well co-ordinated antimalaria programme with the Indonesian authorities, with particular emphasis on the operations in the border areas. Pending the implementation of this co-ordinated programme, it was considered advisable to make provisions for the treatment of all migrants crossing the border from Kalimantan. Hope was expressed that the Indonesian authorities would participate in future conferences.

### 3. Farm huts (sulaps)

Malaria transmission undoubtedly takes place in farm huts which are used as temporary living quarters during some parts of the year. The spraying of these huts has been a tedious job because they are sometimes located in very isolated places and far away from the kampongs. It was, however, considered essential to spray these huts as part of the campaigns.

### 4. Opposition to house spraying

There has not been any report of people in the rural areas refusing to have their houses sprayed with insecticides, except during special occasions when there is a "pantang", in which cases no visitors are allowed to enter a house. It was considered unwise to introduce legislation to force the house-owners to permit antimalaria workers to enter their premises to obtain malariometric data or to spray, inasmuch as these cases are infrequent and have always been solved by other persuasive means.

In some towns, house-owners have refused to have their premises sprayed because of the inconvenience of moving their furniture and the whitish deposits left on the walls. It was felt that this objection would be minimized if the town officials and leading people in the community would agree to have their houses sprayed first.

## INTER-COUNTRY CO-OPERATION AND CO-ORDINATION

The conference agreed that co-operation among neighbouring territories and co-ordination of antimalaria programmes are essential to the success of the antimalaria

campaigns in the island of Borneo. The three territories represented at the conference have agreed to co-operate fully with each other and to co-ordinate their respective antimalaria programmes with a view to eradicating the disease. To this end, the three territories decided:

(1) to standardize, as far as practicable, the procedures, techniques, reporting system and equipment used in their programmes;

(2) to arrange for the exchange of scientific information, sharing of experience and frequent personal contacts between the various members of the different teams; and

(3) to work out a plan to co-ordinate the three programmes with particular reference to the area and the timing of the spraying operations.

## DECISIONS

The following decisions were made by the conference:

### 1. North Borneo pilot project

In view of the difference in the bionomics of A. leucosphyrus leucosphyrus and A. leucosphyrus balabacensis, the North Borneo pilot project is necessary and should be continued as planned.

### 2. Expansion of operations in North Borneo

It is expected that the results of the North Borneo pilot project will be available in April 1957. It should be practicable, within the limits of available personnel, to extend the scope of the spraying operations in 1956. Close liaison should be maintained by the malaria teams, particularly when plans for the spraying of villages near the common border are being made.

### 3. Exchange of information

In addition to an exchange of reports, there should be frequent meetings between the personnel of the three territories with a view to sharing experience and co-ordinating their programmes. It was tentatively arranged to hold a meeting around the middle of May 1956, at Marudi, Baram, Sarawak, and it was hoped that as many as possible of those present at the first conference would attend.

#### 4. Standardization

The instructions suggested in WHO publications and documents regarding standardization of procedures, techniques and reports should be followed in the three territories.

#### 5. Sprayers

Tests will be made by Professor T. L. Chang of the North Borneo malaria project to ascertain the best type of sprayers to be used throughout the territories.

#### 6. Antimalaria workers

Due to the difficulty of keeping junior antimalaria staff in the service, it was resolved by the conference that there should be, on the establishment, a nucleus of junior antimalaria personnel, trained in simple techniques. There will be, therefore, three categories of antimalaria workers: (i) the trained technician (Form III standard), (ii) the semi-trained antimalaria worker on the establishment, (iii) the daily paid, locally recruited labourer.

#### 7. Movement of population

The difficulties caused by the movement of populations, especially across the Kalimantan border, were recognized. The best protection would be the simultaneous control of malaria in contiguous territories, and the conference resolved that this should be pressed for, through the World Health Organization. Meantime, antimalaria drugs should, whenever possible, be given to all migrants.

#### 8. Meeting with Indonesian authorities

It was resolved that every effort must be made through the highest authorities, to make contact with the Indonesian health authorities. A meeting, later in the year, of those present, together with the Indonesian delegate and the representative of the USA Operations Mission (ICA) to Indonesia, has been planned.

#### RESOLUTION

The following resolution was adopted:

The Conference

Having discussed the importance of achieving close co-ordination of national antimalaria programmes, particularly among countries with common borders;

Realizing that co-ordination of antimalaria campaigns with particular reference to timing, geography and intensity requires cordial co-operation among neighbouring countries;

Noting that the Governments of Brunei, North Borneo and Sarawak are implementing national antimalaria programmes with eradication of the disease as the ultimate goal;

Recognizing the fact that it would be extremely difficult if not impossible for such antimalaria programmes to succeed unless similar antimalaria campaigns are simultaneously carried out in contiguous areas:

RECOMMENDS that the World Health Organization be requested to

- (1) encourage the Government of the Republic of Indonesia to undertake a similar antimalaria programme in Kalimantan, and to co-ordinate such a programme to the greatest extent possible with those in Brunei, North Borneo and Sarawak, and
- (2) invite the Government of the Republic of Indonesia to participate in malaria conferences with the Governments of Brunei, North Borneo and Sarawak with a view to promoting and implementing a co-ordinated antimalaria campaign in the whole island of Borneo.

LIST OF PARTICIPANTS

State of Brunei

Dr M. A. Rozalla, Acting State Medical Officer

Government of North Borneo

Dr L. J. Clapham, Director of Medical Services

Government of Sarawak

Dr W. Glyn Evans, Director of Medical Services (Chairman  
of the Conference)

Dr R. Dickie, Deputy Director of Medical Services

Mr Joseph Yong, Senior Technician

UNICEF

Mr S. Polak, Resident Representative, Thai Area Mission

World Health Organization

Dr F. J. Dy, Regional Malaria Adviser, Western Pacific  
Region (Secretary of the Conference, assisted by  
Miss M. Roach of the Secretariat of the Government  
of Sarawak)

Dr W. J. Stoker, Project Leader, North Borneo Malaria Project

Professor T. L. Chang, Entomologist, North Borneo Malaria Project

Dr M. J. Colbourne, Project Leader, Sarawak Malaria Project

Mr F. Lachance, Entomologist, Sarawak Malaria Project

ANNEX II

OPENING SPEECH BY H.E. THE GOVERNOR, SARAWAK

I am very glad that you invited me to open this most important Conference. I welcome you all to Kuching, particularly those who have come a long distance like Dr Dy from Manila; I hope that you will feel that your journey has been worthwhile; we at any rate are very glad to see you here.

I am very sorry indeed that the Indonesian delegate was not able to attend. I hope arrangements can be made for a future visit by him. Apart altogether from our desire to have close and neighbourly relations with Indonesia - in this particular operation, it seems to me that co-ordination of policy and planning is absolutely essential. Indeed it is not just a case of overlapping being extravagant in staff and energy. I imagine that failure to co-ordinate planning might have serious and even disastrous results. For instance, is there not a possibility that immunities to certain drugs and insecticides may develop and spread to areas which have not received the full or any treatment? But perhaps I am talking nonsense. What is certain however is that your mosquito is not going to recognize international frontiers.

I would rank this malarial control project, if it is carried through to the virtual eradication of malaria, to be the greatest contribution to the welfare of the peoples in the under-developed areas of the world since the abolition of slavery more than a century ago. It seems to me to be one of the truly great and entirely beneficial advances made by science during our generation.

Before I came here I worked for 20 years in a country in West Africa with a higher incidence of malaria than Borneo. I have seen there and here the deadening effect it has on man's energy, the inability to concentrate for long, to sustain an effort - the listless children, the high infant mortality. At times one despaired of ever lifting the people out of their lethargy, of giving them the will to make a sustained effort to help themselves. Everyone knew it was malaria but how could we help? We hadn't the funds to drain the swamps. All we could offer was five grains of

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quinine. All that has changed now and the reports I have read from the WHO field officers tell their own exciting story. As you read these reports you can feel the excitement and wonder of the writer almost amounting to disbelief. He knows he is witnessing the transformation of a people. It is not only the statistics which must gladden the heart of any doctor but the general and visible improvement in health and morale and prospects of the people whose whole outlook on life has been changed.

What is more and perhaps unusual is that your efforts are appreciated now by the very generation you are helping. That has not happened very often in history. If anyone should doubt this I would like them to have been with me at the Marudi Regatta some two years ago. From all the rivers in that district, from the Baram, the Tinjar and the Tutoh, men, women and children came to the principal town to enjoy themselves on the great holiday event of the year. But on this occasion there was a difference, they soon showed that they had not come only to see the racing and cheer on their favourite local crews; they had also come to pay their respects to Dr de Zulueta and his family who were shortly to leave the country for a well-earned holiday. After dark they came up in swarms from the bazaar headed by the formidable figure of the Temonggong and they swarmed over the doctor's house, through his windows and his doors like a monstrous pack of boisterous puppies. It was one of the most astonishing and heart-warming sights I have ever seen. It was certainly a compliment to de Zulueta as a person but any member of the WHO would have been proud and happy to see how much their work is appreciated. For the fact was that the people recognized that Dr de Zulueta had done great things for them and they were cured of an age-old malady.

I would like the field officers to know - people like Francois Lachance and Joseph Yong that we know that it is an uncomfortable and hard life, demanding real devotion to duty, toughness of spirit and determination. They have to travel light very often in wet and difficult and even dangerous going. They have to keep on at it because time is an important factor. And when the day's journeying is done and the day's work completed there is another kind of toughness required of them. I remember

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reading in one report a particularly pathetic cri de coeur from an officer who regretted that he did not measure up to his predecessor's party stamina. No - it's not all beer and skittles but it must be wonderfully rewarding work.

This country and all what we call British Borneo is I know very grateful to the WHO for this great work. It must be pressed on with all our resources to a conclusion. I hope that the Organization will find it possible to send us here an additional malariologist so that we can complete our programme with the maximum speed and efficiency. The Director of Medical Services will I know explain his reasons why he regards this appointment as essential.

The younger nations of South-East Asia and some of the not so young appear to be unduly sensitive about patronage in general. It is often, I am afraid, the case the more generously they are treated the less they are prepared to recognize. UNICEF and WHO as international bodies on the whole avoid this taint and I can assure them that there is nothing but gratitude for their work in Sarawak, but nevertheless I feel it is important that we should identify these countries with their efforts. The work is so important and results so far reaching that the people should not be allowed in the future to feel that they were denied an opportunity to make their contribution to an operation that has affected their future so deeply. I do not mean by this that I am inviting WHO to ask for a larger financial contribution, that indeed might get me into trouble and raise difficulties, but I do hope that it will be possible for more Sarawak men like Joseph Yong, or young local doctors who may be forthcoming in the future, to join this great work under the auspices of the WHO. The follow-up and its proper supervision will be of very great importance and I hope that we as a country can claim to have taken an active part in it.

I hope, Gentlemen, you will enjoy your stay in Kuching and your Conference will be profitable and instructive.

I remember the Director of Medical Services describing in a report a conference he attended in Singapore and he wrote that very erudite and fluid discussion continued well into the night. You have been warned. Thank you all very much for attending from Manila and North Borneo.

I now have great pleasure in declaring this Conference open.