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RFHC
Typhus-Malaria

THE ROCKEFELLER FOUNDATION

49 WEST 49th STREET, NEW YORK

Enc FLS-GKS
6/22/46

APO 794

Through Dr. Strode

Rome, June 6, 1946.

Ack 6/17

AUG 20 1946

GKS JUN 17 1946

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St. Soper

Copy initialed by HHS AJW

Letter No 286.

Dear Fred:

After spending a week in Sardinia I am of the opinion that the aim of the project there should be changed from the eradication of anopheles to the eradication of malaria.

More specifically, I think the goal should be to ascertain what is the cheapest way to secure the complete control of malaria on Sardinia which can then be continued within the administrative capacities of the Italian Government in Sardinia.

I believe that the soundest way to start is to control labranchiae by means of DDT spray-painting of all buildings on the island. Once this is done and the costs worked out, and the distribution of labranchiae and other possible vectors ascertained, then will be the time to think about spending the very large sum of money which would be involved in an attempt to eradicate anopheles in Sardinia. The very important question of reinfestation would have to be considered when assessing the advisability of attempting anopheles eradication.

When he works with an indigenous species of anopheles an eradicationist simply must become ecologically minded. The fact that gambiae was eradicated in Brazil and in Egypt without much thought having been given to ecology does not obviate the need for very careful ecological studies regarding indigenous species of anopheles in other areas.

While I was in Sardinia I realized, really for the first time, that anopheles mosquitoes, labranchiae included, almost certainly existed on the island before man ever did. This means that labranchiae can probably maintain itself there quite independently of man, his buildings, and his domestic animals.

It is not known up to what altitude in Sardinia labranchiae is able to maintain itself throughout the year independently of man. A confusing element is introduced by the possibility that labranchiae overwinters only in the lowlands, and invades the highlands each spring. While there is no information regarding this very important point, we do have Missiroli's statement that he observed a serious epidemic of malaria -- presumably labranchiae-transmitted -- at an altitude of 800 meters, and also Aitken's finding of labranchiae eggs at 800 meters altitude on 22 May 1946.

The custom which the Sardinian people have of living almost exclusively in villages would make comprehensive anti-larva work enormously expensive and difficult. The higher up into the mountains labranchiae maintains itself, the greater the kilometrage of stream and creek and gully bed that would have to be included in the comprehensive anti-larva work. In such work it would have to be assumed that there were small potential breeding places for labranchiae in the bed of every stream, no matter how insignificant it was, nor how precipitous its bed. I think it is only reasonable to assume that, if anti-larva work is to be done, it would have to include all land up to an elevation of at least 1,000 meters.

In my opinion, the organization of comprehensive anti-larva work in the portion of Sardinia which has an elevation of up to 1,000 meters is an impossible task. Call me a pessimist if you will, but the word impossible is in my vocabulary, and I intend to keep it there.

However, I grant that what I have just said is only an opinion, and that more information about the matter is essential before arriving at a final conclusion. This only strengthens the argument for making some arrangement which will permit the study, first of the actual distribution of

labranchiae and other vectors, and then of the feasibility of comprehensive anti-larva work.

Another point is that I think it probable that indices of the density of anopheles will not be a satisfactory way of measuring the progress of the malaria eradication work -- because such indices are much too sensitive. It seems reasonable to expect that the complete stoppage of malaria transmission will be attained before the anopheles become scarce. This would make it necessary to make a good many surveys of malaria incidence, using both spleen and blood indices, probably more of the latter. If the latter sort of work is to be done, provision needs to be made for increased quantities of microscopes, stains, and glassware.

Should it eventually appear to be feasible to attempt anopheles eradication, it should be possible to study the potentialities of reinfestation by setting up a barrier zone in the Campidano and doing eradication in the mountain area to the south and west of the Campidano. This mountain mass, (Sulcis and Iglesiente), which covers about one tenth of the whole area of Sardinia, is large enough to be a satisfactory test of the administrative problems involved. Moreover, it is rough and mountainous enough to provide a fair sample of the ecological conditions which would be encountered in the rest of the island. Finally, the width of the Campidano is greater than the distance between Sardinia and Corsica.

Convinced as I am that comprehensive anti-larva work should not be undertaken until the results of extensive ecological field studies over a period of at least one full year are available, I recommend that extensive revisions be made in the list of equipment and supplies which UNRRA has been requested to furnish for the Sardinian project. The specific recommendations are contained in Addendum No. 1 to this letter.

I realize that the purchase of these supplies may possibly be necessary eventually, and that there is money available to purchase them now, while if the funds are allowed to lapse, money may not be available later. Nevertheless I feel that it is not wise to spend money for these

items at the present time because of the very small chance -- in my opinion -- that they will ever be needed in Sardinia or elsewhere in Italy.

Just how the matter will be presented to UNRRA and to the Italian Government, provided these recommendations of mine are followed, I am frank to say that I do not know. I have not mentioned my opinions to anyone in Italy, except to Drs. Wilson and Aitken.

There has just arrived here in the office a copy of the "Order" which Mr? Keeny issued for the internal guidance of UNRRA-Italian Mission about the "Anti-Anopheles project in Sardinia", and a perusal of that order indicates that all matters dealing with the Sardinian project should originate with, or be channeled through, the Superintendent of ERLAAS (Ente Regionale per la Lotta Anti-Anofelica in Sardegna). Inasmuch as Dr. Aitken is the Acting Superintendent it would probably be best to have the request originate with him.

However, most of the orders which would be cancelled, if my recommendations were to be followed, would be for things to be purchased in USA. I gather that UNRRA has issued purchase orders for the items, but it would appear not to be too late to cancel them.

I have not prepared a detailed list of the items which I believe should be deleted from the requisition, but I am bringing with me to New York a copy of the requisition which has been submitted to UNRRA, and against which it is placing the purchase orders for the supplies and equipment.

Regarding the sprayers to be used for the DDT spray painting work, I take the liberty of recommending that cylindrical sprayers be substituted for knapsack sprayers. Both Lt. Gebhard of UNRRA and Prof. Missiroli are strongly of the opinion that the cylindrical sprayers are vastly superior to the knapsack type. This matter is discussed further in Addendum No.2 of this letter, but Mr. Knipe's criticism of my recommendation should be obtained before any action is taken.

These remarks are submitted pursuant to your invitation to me to comment on the Sardinia project after I had visited Sardinia.

My leave has been "seriously delayed" by a two weeks wait for a plane seat here, but I expect to depart for New York in a couple of days. And then leave ---

Please give my best to Juliet and don't work too hard at your leave.

Sincerely yours,

Austin

J. A. Kerr.

Dr. Fred L. Soper,
The Rockefeller Foundation,
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New York 20, N.Y.

JAK/af

ADDENDUM NO. 1 TO LETTER JAK TO FLS OF 6 JUNE 1946 (ROME)

In view of my recommendation that the aim of the Sardinia project be changed from that of anopheles eradication to that of malaria eradication, and in view of my opinion that anopheles eradication in Sardinia is not feasible, I recommend the following changes in the requisition for supplies and equipment for the Sardinia project:

1.- Cancel all items not connected with the DDT spray-painting, namely:

a) All items required for anti-larva work
b) All items required for minor drainage work
c) All items required for airplane spraying work.

2.- Reduce the requirements for transport

3.- Increase the laboratory supplies and equipment, as needed for the increased amount of ecological field studies and malaria indices which I visualize.

N.B. No reduction in the amount of DDT emulsion concentrate is hereby suggested.

ADDENDUM No. 2

In view of the fact that cylindrical sprayers seem to me to be indubitably superior to the knapsack sprayers which have been ordered for the DDT spray-painting work, I recommend:

The cancellation of the order for 500 knapsack sprayers and the substitution of an equal number of cylindrical sprayers, such as Hudson ~~2016~~. 750 G Industrial Sprayer

I realize that it is risky business to change equipment without having tried out the proposed substitute, but I have seen the cylindrical Hudson sprayers which UNRRA is using in its DDT spray-painting work at Anzio, and they

seem definitely superior to the knapsack sprayers. The cylindrical sprayers are much simpler in construction, much more fool proof, and they must be much cheaper. Also when they do break they can be repaired with a little solder, while the knapsack sprayers have to have spare parts from USA. The experience with the knapsack sprayers in the Agro Romano last year appears to have been quite unsatisfactory. I am told that there is not a single sprayer on hand which works at the present time.

There are two other minor recommendations:

1.- Specify xylene-resistent hose, because Neoprene hose -- with which the sprayers come equipped -- does not resist the diluted emulsion containing xylene, DDT, Triton X100, and water, in spite of being kerosene resistent.

2.- Specify six foot lengths of hose for each sprayer, so that the container can, if desired, be set on the floor in the middle of a room, thus allowing the workman to manipulate the spray nozzle with both hands unencumbered by the container on his shoulder.

Ulken