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REGIONAL MEETING ON LEPROSY

Mogadishu, 25 - 28 February 1980

EM/MTG.LEP./4 PAKISTAN

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REVIEW OF THE LEPROSY PROBLEM
IN THE EASTERN MEDITERRANEAN REGION
(PAKISTAN)

by

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- A. Leprosy is mostly imported into Pakistan by migrant population. There are
B. also two endemic foci, in the Northern areas and in Makran.

C. At 31 December 1978, the total number of registered cases in the country was 16 000 cases.

D. The estimated number of cases in the country, not registered, is 30 000. This figure was estimated by sample surveys. For every one registered case, at least two unregistered cases should be detected.

E. Number of newly registered and annually reported cases from 1970 onwards :

1970	:	1 090 cases	1975	:	1 138 cases
1971	:	1 515 "	1976	:	1 174 "
1972	:	1 197 "	1977	:	1 542 "
1973	:	1 164 "	1978	:	1 973 "
1974	:	1 263 "			

Total : 12 056 cases

The above figures do not include cases registered in North-West Frontier Province or in Punjab.

F. Age distribution of registered cases :

Child rate at Marie Adelaide Centre and sub-centres only :

1970	:	12 %	1974	:	15 %
1971	:	15 %	1975	:	10 %
1972	:	18 %	1976	:	15 %
1973	:	12 %			

- G. Patients are cared for by special institutions (Indoor, out-patients, reconstructive surgery (in two institutions only), physiotherapy, laboratory facilities, leprosy technicians training).

About three per cent of registered cases are now institutionalized.

Location of institutions caring for leprosy patients :

- Manghopir hospital, Karachi
- Rawalpindi
- Balakot
- Faisalabad
- Peshawar

Services offered include all forms of clinical treatment with reconstructive surgery in Manghopir and Marie Adalaide Centre.

About 97 % of all registered cases are ambulatory or out-patients.

- H. Classification of registered cases :

LL	Lepromatous		
BL		37 %	<u>Based on study of 16 000</u>
BB	Borderline		<u>patients in March 1978.</u>
BT	Tuberculoid		
TT		63 %	
	Indeterminate		

Ridley's classification is being used

Methodologies used for diagnosis of leprosy, for classification and follow-up of cases : Three cardinal signs.

Simple information only is available on bacteriological positivity/negativity.

Diagnostic tests used :

	<u>Used by</u>	<u>Planned for use by</u>	<u>Not used or planned</u>
Skin smears	Technicians	-	-
Nasal smears	Technicians	-	-
Skin biopsy	-	Doctors	-
Histamine test	-	-	XX
Sweating tests	-	-	XX
Lepromine test	-	-	XX

J. Standard treatment applied :

B663 + DDS for lepromatous and BL cases

DDS only for indeterminate cases

Usual treatment for ENL reactions :

1. B663 - 100 to 300 mg daily
2. Thalidomide - 200 mg daily and dose reduced gradually -
Given to males only.
3. Cortisone in severe cases

K. No prophylactic treatment is prescribed to close family contacts.

L. Epidemiological surveys/special studies are being conducted for the detection of early cases of leprosy.

M. Facilities available for routine bacteriological examinations :

Trained technicians and microscopes.

N. Trained technical staff is available in the country.

O. Research is required in the immunological field.

P. Brief description of research proposals :

- Starting immunological research in J.P.H.C.
- Study on combined therapy i.e. Rifampicin with Isoprodian to start.

Q. Health education :

Public : Bazars, mosques, individuals

Patients : their relatives

Technical personnel : doctors, compounders, L.H.V., vaccinators

through Radio, Television, posters, pamphlets.

Q.1 There is no special legislation in force either for or against leprosy patients.

Q.2 There is strong feeling in the population / medical profession against leprosy patients. One of the main objectives of health education is to make known that leprosy is a disease which is treatable.

R. Organisational pattern of leprosy control programme :

- Case finding : notification and surveys
- Case holding : treatment, follow-up, motivation, complete service
- Health education : medical personnel, public, patients
- Additional services : data collection, statistics, evaluation, planning
indoor, laboratory services, training, reconstructive
surgery

T. Future plans : Open more Centres; try to find every case. The original programme should be extended so that the whole of it is run by various technicians and field officers with doctors on top. Help of foreign agencies should be sought for such extension.

U. Foreign agencies involved in leprosy control programmes :

- Marie Adelaide Centre (MAC)
- AID to leprosy patients (ALP)
- Father Damien Foundation

Dr R. Pfau

Sister Jeaning Genes (Sister Tutor and Matron)

Mother Chevoillet " training - social rehabilitation

Sister Bernice Vargas " pharmacist

Miss Maria Saleer " Orangi Rehabilitation Centre

S O M A L I D E M O C R A T I C R E P U B L I C

MINISTRY OF HEALTH

Report Submitted to the Regional (EMRO) Meeting on Leprosy by Prof. Giovanni Tarabini-Castellani (Medical Faculty of the National Somali University) on behalf of the Somali Health Authorities.

Mogadishu, 25-28 February 1980

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In the Background Report ("Leprosy in Somalia: Past and Present"), which has been circulated to the participants in this meeting, the undersigned, upon whom has fallen the privilege of submitting the official report of the Somali Health Authorities, has condensed what information is necessary to ensure the effectiveness of the struggle against leprosy in Somalia.

Essentially, it has been pointed out in the Background Report that leprosy has been imported fairly recently (about the second half of the last century) into the Somali Republic, and that at present there are three - southern, central and northern - endemic foci; that leprosy control made a new start in 1960 and has been gradually intensified through the reorganization, on a more efficient basis, of the Leprosy Center at Jilib, and subsequently through the Field Campaign (1971-73), which was being gradually integrated into the national Health Services; that the Medical Faculty of the Somali National University is also contributing to the cause of leprosy control and eradication through the leprological training of all the new medics and through leprological research, particularly focussed on leprosy in children and immunology.

These activities and initiatives have been conducted with the collaboration, since 1954, of the Sovereign Military Order of Malta (S.M.O.M.); with the collaboration as well of private organizations, such as the voluntary Society "Amici dei Lebbrosi" of Bologna (Italy), which through C.I.O.M.A.L., Geneva, has been and is channeling substantial aid to Somalia; and in particular with the valuable and constant encouragement and support of WHO: we are confident that WHO will continue assisting us in our struggle towards the ultimate victory, which we feel can now be achieved in the not too distant future.

Here we would like to focus attention on a few points which have direct relevance to the subjects proposed for discussion at this Meeting, i.e. the epidemiological and therapeutic aspects of leprosy control.

Under the epidemiological profile, our remarks concern the territorial spread of the disease, the clinical aspects of an antileprosy programme, and the immunological problem.

As to the first point, it is to be stressed that Somalia lies next to countries affected, to a greater or lesser extent, by this endemic disease. It is to be considered, then, that no eradication campaign can be truly effective unless it is conducted simultaneously over the whole of the territories concerned. In their propagation, communicable diseases are not arrested by territorial boundaries; it is therefore necessary to take appropriate measures to avoid "importing" contagion. We believe that WHO can successfully help in the solution of this problem, by persuading the countries concerned, even where they belong to another Region, to launch a simultaneous campaign for leprosy eradication.

Coming now to the clinical aspect, it is observed that numerous cases of indeterminate leprosy are to be found in the endemic areas, particularly among children. In many instances, spontaneous recovery is effected: this may well amount to over 95% of the cases observed. In a few cases the disease regresses and is thought to have disappeared entirely, but may instead be reactivated again years later. In a very small number of cases - perhaps less than 1% - the disease follows its course and develops into the one or the other form of leprosy. One might say that the same happens in leprosy as in TB of the lungs, where a great number of primary infections regress, as compared with the limited number of cases in which the disease holds its grip and develops, often later in time. The source of contagion is still not known in many cases; but one should not forget that there are cases of inapparent (subclinical), but equally contagious, leprosy: suffice it to mention here the cases described by Miranda and Terencio de las Aguas, where healthy children undergoing chemotherapy contracted the disease from the blood of still apparently healthy subjects. Adequate research on inapparent leprosy has not yet been

conducted and will be possible only by means of appropriate immunological and bacteriological techniques. We would recall here Dr. Giuseppe Tarabini-Castellani's communication to the XI International Congress on Leprosy (Mexico City, 1973), in which he underlined the importance of subjecting the whole population of an endemic area not only to clinical tests, but also to immunological screening.*

Thirdly, we wish to call attention to the problem of the immunological conditions of the population. As is known, treatment and general screening alone, in the short-term perspective - and perhaps even in a long-term one - can achieve at best, only leprosy control, but not eradication. There are only two safe ways to genuinely eradicate this disease: one way - unacceptable in our day - is to segregate the leprosy sufferers and their contacts, as was done in Norway earlier in this century. The other is to keep under constant observation, by means of clinical check-ups, the persons who, in spite of all efforts, are persistently lepromin-negative.

Massive immunological screening has become possible only now that a constant source of lepromin, such as Armadillo-derived lepromin, has been found, and a new safe and permanent method of reading the lepromin reaction is available, i.e. the post-lepromin scar reading (Walter & Coll.). This new method constitutes an important advance, in that it eliminates the uncertainties and possibilities of error resulting from readings based on nodule diameter. Studies are being conducted on this recently divulged new method, to confirm the significance of the post-lepromin scar as the manifestation of stabilized CMI, and Somalia is contributing to them through the researches currently conducted at the Medical Faculty of the National University.

* G.L. Tarabini-Castellani, G. Tarabini-Castellani: "Leprosy Control Campaign in Somalia. Integration into the National Health Services" - Paper LB22, submitted to the XI International Leprosy Congress, 13-18 Nov., 1973, Mexico City.

We would now turn to the methods of treatment, dwelling in particular on those best suited to field work and out-patient care. The writer of this report would like to mention in passing that he has been studying and experimenting with therapies based on the administration of single or combined drugs for 30 years, 20 of which in Somalia. Brief mention will also be made here of Basti's research in Somalia (1953), which pointed to the greater effectiveness of isonicotinic acid hydrazide associated with sulphoniazine rather than sulphoniazine alone, and of ~~your rap-~~porteur's research at Fontilles (Spain, 1956) showing the highly interesting results obtained by administering high dosages of IN (20-38.5 mg/Kg/day) associated with and protected by streptomycin or sulfonated aminoacids (glutamic acid). Again, this writer has reported on more recent researches in several papers, and lastly at the Seminar on Leprosy organized by the Istituto Italo-Africano in Rome (1978). Here, we shall confine ourselves to some observations summarizing the experience made in 20 years of work in Somalia:

- DDS is still the basic treatment, but is toxic in high dosages, induces sulfone resistance in lesser dosages, and is slow in producing negative bacilloscopic results.
- Clofazimine is an effective drug, but its action is slow when low dosages are used, toxic in high dosages due to its accumulation in the cells. It is effective in preventing and treating leproreactions, both alone and in combination with other drugs. Dosages and timings vary greatly, owing to its accumulation in the cells and its slow metabolism.
- Rifampicin can be administered in high dosages, and therefore represents the most active type of treatment. It can be associated with DDS, ^{administered} or prior to DDS. The therapy recommended by Dr. Languillon*, i.e. rifampicin in a single 1500 mg dose, followed by 100 mg of DDS daily, and associated with ~~with~~ clofazimine in the event of leprosy reactions, is undoubtedly of great interest, and may revolutionize the therapy of the disease.

* J. Languillon, "La lutte anti-lépreuse au Sénégal", Atti del Seminario sulla Lebbra, 27-28 gennaio 1978, Roma (Ist. Italo-Africano)

Whatever the type of treatment adopted, we believe one should not overrate the Morphological Index (MI), even when it reads zero and when the disintegrating bacilli do not infect Shepard's mice. In our opinion, the excessive confidence in a zero reading of the MI in the presence of a persistingly positive Bacilloscopic Index (BI) and the excessively low doses of DDS recommended by some authors in the recent past are responsible for present-day therapeutic failures and have facilitated contagion. In times past, a certificate of recovery was issued only to those patients whose BI had been consistently negative for five consecutive years: this practice should be revived, particularly when conducting a Field Campaign.

As concerns leprosy reactions, prevention rather than treatment is the basic approach. The benefits of clofazimine have already been mentioned; we would therefore add here that corticosteroids and thalidomide are the most effective; in particular thalidomide, if there are no contraindications, can be administered for several months without any adverse side effects.

In the matter of drug resistance, in addition to our previous remarks on low dosages of DDS, we would like to mention that, to our knowledge, certain concepts which are now well established in the treatment of TB do not appear to have been extended to leprosy. Some atypical pathogenic TB bacteria, whose differentiating characteristics are visible only in cultures, are often resistant to specific drugs, which must then administered in twice or three times the normal dosage. Similarly, it is not to be excluded that among the many acid-fast bacilli cultivated from leprosy lesions there may be some capable of producing leprosy-like lesions and partly or entirely resistant to antileprosy treatments. In this connection, one should not forget the researches conducted by Xalabarder back in 1957 (Barcelona, Spain) which your rapporteur had called attention to in 1959 and have been recently mentioned by Kirchheimer* : Xalabarder contended that "all mycobacteria, the free-living ones and the ones parasitic on any kind of animal, have a common origin".

Nor should one ignore the studies conducted by Munoz Rivas (Bogota, Colombia), who holds that certain soils in very humid and hot areas are the natural habitat of Myco.leprae. The interest of these studies is now enhanced by the announcement recently made by Karda (Borstel Institut, Germany), to the effect that leprosy-like bacteria have been found in moss-populated bogs in certain localities of coastal Norway, where in the last century leprosy was prevalent.

To sum up, in combating Hansen's disease we are open to the most recent scientific advances, but at the same time feel we should not totally ignore and set aside other, even though less recent, hypotheses which have not yet been adequately explored and may eventually throw light on the many mysteries still enshrouding this disease. On the other hand, in our field activities the approach we insist for is the clinical and immunological screening of the whole population in the endemic areas. We would like to add that a new dimension should be added to our Campaign by an effort at educating the public, using such tools as posters and audiovisual programmes - which had already been prepared for the purpose - so as to secure an even more active participation of the population in the fight we have so long been enthusiastically conducting.

In closing, we reiterate the hope that a similar programme of action may be undertaken in the whole geographic area concerned, so as to ensure the complete and irreversible eradication of the disease.

S O M A L I D E M O C R A T I C R E P U B L I C

MINISTRY OF HEALTH

Paper Presented at the Regional (EMRO) Meeting on Leprosy,
Mogadishu, 25-28 February 1980
(BACKGROUND PAPER)

LEPROSY IN SOMALIA: PAST AND PRESENT

The Past - Spread of Endemy -
First Steps Towards Leprosy Control

Leprosy appears to have been introduced into Somalia in rather recent times, for the native population, including both the townspeople and the pastoral nomads and small hunting groups in the bush, was free from the disease at the time when it was first discovered in Somalia.

The first cases of leprosy were recorded in 1902 among the agricultural population settled along the banks of the Shabelle river (today the Central Somalia focus), and later on, in 1925, among the settled population, also consisting of farmers, along the river Juba (Southern Somalia focus): they are the descendants of immigrants from the Region of the Great Lakes, and partly also from Central Africa - both areas where leprosy is highly endemic - following the course of the two rivers along which they settled in the second half of the 19th century. The Hargeysa area, perhaps not yet adequately explored, is another focus (Northern Somalia focus), where the spread of the disease is to be ascribed to contagion through contacts with leprosy-affected subjects coming from Ethiopia.

A few isolated cases at Galkayo (Mudugh Region) would appear to be due to foreign visitors involved in the frankincense trade.

A few cases of leprosy were found among Arab and Indian immigrants, and it could well be thought that these have also been a source of contagion.

In 1927 a government medical officer, Dr. Vittorio Bianchi, who was actively tracking down leprosy cases in the Lower Juba Region with a view to providing them with medical assistance, organized a leprosy center in the islet of Alessandra, on the river Juba, in the vicinity of Jilib: the number of patients at the center, initially totalling 27, rose to 276 in a matter of 5 years. This situation led the authorities to issue a decree (Decree of the Ministry of Health No.602 of 1933) requiring all "Hansenian" patients to be sent to the leprosy center at Alessandra (Jilib).

It should be pointed out that in Somalia leprosy control - including both screening and treatment at the leprosy center - started as an exclusively governmental initiative, i.e. integrated in the national Health Services.

Unfortunately, the project started by Dr. Bianchi was abandoned as a result of World War II, and almost all of the patients moved away to wherever they wanted. Thus, in 1948, a government-sponsored campaign had to be conducted; in 1950 a "Leprosy Screening Center" was set up in Mogadiscio, so as to identify, and send to the Leprosy Center at Jilib, all the subjects found to be suffering from the disease.

In 1954 the then Government signed a Convention with the Sovereign Military Order of Malta (S.M.O.M.), whereby the latter was made responsible for the conduct of operations at and by the Leprosy Center, Jilib.

In spite of all good intentions, there was no improvement at the Leprosy Center, Jilib. Responsibilities were split between the Government, which took care of screening activities (dépistage), and the S.M.O.M., in charge of the Leprosy Center; this marked the end of the approach adopted by Dr. Bianchi, i.e. single leadership and responsibility for both the organizational and the operational aspects of leprosy control, though attempts in this direction had been made immediately after the war.

Leprosy Control Revised: Improvements Effectuated

It was only in 1960, when the S.M.O.M. assigned to Somalia a leprologist from the International School at Fontilles, that the Leprosy Center at Jilib rapidly underwent a number of changes ultimately aiming at transforming it into the equivalent in Africa of Fontilles.

The leprologist immediately arranged for the inclusion of the two male nurses of the Center into the permanent personnel of the Health Ministry, established close contacts with the central Health authorities, and took steps to keep the families of leprosy patients under control by supplying their names to the competent health officers in the various districts. At the same time, he initiated screening activities in the field.

He also quickly proceeded with the erection of several buildings, had a power station installed, as well as an abattoir and a ration stall for the distribution of meat, an oil and a flour mill, and improved the patients' diet; further, he set up a surgical unit, a physiotherapeutic unit with paraffin baths, a laboratory for clinical analyses and another for scientific research, a histological laboratory, an X-ray unit, a photography laboratory (processing and printing), a child care unit including preventive sulphone treatment of healthy children of leprosy patients, a primary school for children as well as adults. He conducted a training course in general nursing and leprological nursing, of 2 years' duration, for the staff. He also promoted, by way of

occupational therapy, a number of arts and trades, and in particular farming, and secured work for them, to ensure that they would lead a normal life on dismissal from the center. With the cooperation of the patients themselves, he undertook many researches as concerns methods of treatment.

At the Jilib center, the medical director and his staff formed one big family together with the patients, just as it is at Fontilles (Spain). This highly positive transformation was achieved with the cooperation of the medical and nursing staff; of the sister, who cumulated several responsibilities as pharmacist, scrub nurse in the surgical room, teacher of home economics and basic notions of midwifery, and laboratory worker (histology); and even of the administrative head who supervised all construction works and the setting up of two agricultural villages, outside the grounds of the leprosy center, so as to provide for healed patients unwilling to go back to their original homes.

Ever since 1960 the Medical Director, through field trips of limited scope and screening of the villages so visited, took pains to train his personnel for the Field Campaign against Leprosy, which could come into operation, on a systematic basis and independently of the Leprosy Center, only in 1972 thanks to the assistance received from the Association "Amici dei Lebbrosi" of Bologna (Italy) and then from CIOMAL, Geneva. In 1972 he was joined by another doctor, his son, who subsequently took charge of Campaign operations.

In this period, on his recommendation, 6 more nurse trainees of the Leprosy Center were integrated in the establishment of the Health Ministry: a greater number of dermatological explorers for the Campaign could be trained. They totalled 15 and were called upon to take part in the nation-wide Rural Development Campaign (Ololaha Horumarinta Reer Miyiga) conducted in 1974-75.

Like the Leprosy Center, also the Anti-leprosy Campaign was to be integrated in the national Health Services. In fact, in 1977 for the first time a number of male nurses from the hospitals of the districts in which Campaign operations were being conducted were assigned the task of following the Campaign teams and to take over from them responsibility for the follow-up on leprosy cases detected in their respective areas. In 1978 the male nurse trainee of Afgooye District, assigned to the Anti-leprosy Campaign, was the first to get a monthly allowance for his leprological work, which he will be required to carry on after the Campaign team completes its work in the district.

The gradual integration of both the Leprosy Center and the Campaign in the national Health Services was to be completed with the appointment

of properly qualified medical staff and of supervisory officials in the Ministry of Health: in actual fact, the officer in charge of the proposed National Anti-leprosy Campaign had already been appointed.

Epidemiological Data

Leprosy cases were known in the past, or are known now, to exist in 27 out of the 83 districts into which the national territory is subdivided. The total number of cases recorded so far is 3750. The Anti-Leprosy Campaign conducted from 1972 to 1979 has led to the detection of 1012 cases out of 207,701 persons screened. When one considers that only about one sixth of the more important endemic areas have been covered, it can be estimated that the cases still undetected are in the range of 6,000. The total figure, when adding the recorded cases, would thus come to about 10,000. In the great majority, they are initial indeterminate cases, many of which may even effect a spontaneous recovery. Out of the 1012 mentioned above, only 78 were lepromatous, 76 tuberculoid and as many as 858 indeterminate leprosy cases. Of the latter, 632 were in a very initial stage (see Annex 1).

The turnover of in-patients at the Jilib Center in the period 1960-80 is shown in Annex 2. At the end of 1979 the in-patients totalled 358 (75 lepromatous, 60 borderline, 140 tuberculoid and 73 indeterminate leprosy cases).

Up to 1975, leprosy cases were reported to exist in 18 districts (see Annex 3 - "Distribution by Districts"): the most highly endemic then were Afgooye (396 cases), Jilib (349 cases), Jowhar (329 cases), Mogadiscio (210 cases), and Jamaame (104 cases).

Since then, 9 more districts had to be included, where isolated leprosy cases were detected. The districts where leprosy cases are known to exist are shown in the attached map (Annex 4).

The screening conducted by the medical students of the National University in a number of schools revealed, out of 15,117 children tested 256 cases of "hansenosis" (indeterminate cases), and of these only one positive for bacilli (Bacilloscopy: 1.69%). In the highly endemic areas the percentage attained 4.05%, in areas of medium-high endemy 3.3%, of low endemy 1.8%, and in non-endemic areas 0%. In Mogadiscio, on testing 4750 students the rate was found to be 1.45%.

As further progress is made in the methods of treatment, the number of neurodystrophic cases decreases. Yet, they are still numerous and socially important. A research conducted in 1974 on 408 cases (past and present) at Jilib has given the results presented in Annex 5. Like

everywhere else, in Somalia also osteoarticular lesions and retraction of tendons resulting in clawhand predominate. Cases of blindness are few.

According to the most recent screening (dépistage) techniques, the subjects presenting only hypochromic spots which do not appear attributable to causes other than Hansen's disease are classed among the indeterminate cases; it can then be said that the ratio of children to adults in this group is changing markedly, with the number of children on the increase. The confirmation given by a diagnose ex adjuvantibus is very valuable in such cases, but not error-proof: a hundred percent safe method of diagnosis is what one would need. In the absence of such a tool, for the time being we consider it advisable not to ignore, therapy-wise, the cases which we refer to, depending on their seriousness, we call "1st and 2nd degree Hansen's disease", so as not to "generate fear" in the children's parents and in the schools.

Our Approach to Leprosy Control in Somalia

We have adopted a multisided approach to leprosy control, namely through:

1) The teaching of leprology at the Medical School of the National University, with a course which follows the classical model of the course given at the International School of Fontilles (Spain). The lecturer is Prof. Giovanni Tarabini, formerly lecturer for about 10 years at Fontilles and then, from 1960 to 1973, Director of the Leprosy Center at Jilib and of the Field Campaign for Leprosy Control in Somalia.

Already 148 doctors have graduated from the Medical School, and all of them have received leprological instruction in the course of their academic training. At present 300 students are enrolled and should obtain their degree in 1 to 4 years hence, and again they will have taken a course in leprology. This field of study attracts the interest of our students, many of whom elect it as the field in which they will prepare their thesis: 13, now graduated, have already taken a thesis in leprology; 8 more are currently preparing their theses on this subject. The new members of the medical profession who have received their academic training at the National University of Mogadiscio, are equipped to undertake any program of leprosy control, in contrast with their colleagues from other universities.

2) Leprological training at the UNICEF School.

3) Training of dermatological workers, in connection with the Field Campaign for Leprosy Control conducted so far, and to be further developed in future.

- 4) Researches conducted at the Leprosy Center, Jilib, and in the Course of the Field Campaign, with a view to determining the best specific antireactive treatment to be adopted as the standard one. Experience in Somalia has led to preference for the specific sulphone treatment (DDS) administered daily in doses from 100 to 25 mg, as warranted by individual circumstances; and, as protection against leprosy reactions, to thalidomide and clofazimine, which in case of need can be replaced with corticosteroids. The dosage used is not high and is administered, on an average, for 7-10 days (Dexamethasone 0.75 mg for 3 or more days). Several experiments on the combined use of certain drugs lead us to conclude in favour of Dr. Languillon's therapy, consisting in the administration of 1500 mg of rifampicine (single dose) followed by DDS (Languillon: 100 mg per day), and, if necessary, by Lampren (100 mg per day) against leprosy reactions. This or an equivalent type of treatment should be experimented with for quick results in very early cases of indeterminate leprosy, particularly in children.
- 5) The Field Campaign, involving mass screening of the population and treatment of out-patients. Here the basic concept must be the desirability of detecting the disease in its early stage: thus, radio broadcasts, a poster and an audiovisual program have been prepared all aimed at educating parents so that they will confidently seek the doctor's assistance on the first appearance of a doubtful skin lesion.
- 6) Research on the immune response to M. leprae, by means of the lepromin test, which is of basic importance for a leprosy control campaign: This is dwelt on at length in the course on leprology at the National University; another point which also receives special consideration is the possibility of improving CMI where it is depressed or absent.

Conclusion

We have thus reviewed the past and present position of leprosy and its control in Somalia, its incidence among the population, its distribution by districts, some of which have been repeatedly reconnoitered in recent years within the scope of the first stage of the Field Campaign.

We now know where to aim our weapons in our fight against the disease: weapons provided by the Ministry of Higher Education, which ensures the leprological training of our medics, the mainstays of our national Health services; and by the Ministry of Health, which through the second stage of the Field Campaign for Leprosy Control must sift and purge from the disease the whole population in the areas concerned, and must at the same time develop its preventive activities in such a way as to prevent the re-introduction of the disease into our national territory.

Somalia appreciates the assistance which is, in various forms, forthcoming from various sources. More specifically, we are sincerely grateful to WHO for its continued cooperation, which we are confident will be maintained in the future; we are grateful to the Sovereign Military Order of Malta, which since 1954 is closely associated with us in the struggle for leprosy eradication; our gratitude goes, of course, also to any other public or private institution which, channeling their aid through WHO and the S.M.O.M., contribute to the improvement and strengthening of our facilities for leprosy control. They will, surely, rejoice with us on the day of our victory: this day, we hope, will come soon, and the victory, we trust, will be complete and lasting.

FIELD CAMPAIGN FOR LEPROSY CONTROL, SOMALIA:

Number of Persons Examined and New Cases Detected, by Districts

Year	Districts	Cases No.	Form of Disease			H ₁	H ₂	Persons Examined No.
			L	T	I*			
1972	Jilib	25	-	-	25	18	7	5615
1973	Jilib	3	-	-	3	1	2	5737
	Afgooye	33	-	4	29	24	5	3903
1974	Afgooye	31	2	-	29	24	5	-
	Kisimayu	1	-	-	1	1	0	-
	Jilib	1	-	-	1	0	1	-
	Marka	1	-	-	1	1	0	-
	Balad	12	-	1	11	8	3	1129
1975	Kisimayu	1	-	-	1	0	1	-
	Jilib	16	-	2	14	4	10	19945
	Marka	43	5	9	29	15	14	24566
	Qoriooley	34	3	5	26	22	4	15067
	Banaadir	3	1	-	2	0	2	-
	Beled Weyn	1	1	-	-	0	0	-
	Jamaame	28	10	2	16	8	8	-
1976	Kisimayu	23	-	4	19	12	7	-
	Jamaame	44	2	1	41	14	27	34351
	Jilib	8	-	-	8	5	3	-
	Barawe	2	1	-	1	1	0	-
	Sablaale	7	-	-	7	6	1	4104
	K/Waarrey	3	-	-	3	3	0	-
	Qoriooley	34	4	6	24	17	7	15570
	Marka	59	3	5	51	24	27	22067
	Afgooye	25	2	4	19	18	1	-
	Balcad	3	1	-	2	1	1	-
	Bur Hakaba	1	-	-	1	1	0	-
Baydhaba	1	-	-	1	1	0	-	
1977	Kisimayu	13	-	1	12	9	3	-
	Jamaame	79	5	5	69	35	34	21590
	Barawe	14	-	6	8	8	0	18056
	Sablaale	7	-	-	7	6	1	4104
	K/Waarrey	3	-	-	3	3	0	-
	Qoriooley	34	4	6	24	17	7	15570
	Marka	59	3	5	51	24	27	22067
	Afgooye	25	2	4	19	18	1	-
	Balcad	3	1	-	2	1	1	-
	Bur Hakaba	1	-	-	1	1	0	-
Baydhaba	1	-	-	1	1	0	-	
1978	Kisimayu	7	1	-	6	5	1	-
	Jamaame	167	4	2	161	145	16	-
	Jilib	11	-	-	11	10	1	-
	Marka	5	2	-	3	3	0	-
	Afgooye	89	9	5	75	61	14	2852
	Wanle Weyn	1	-	1	-	0	0	-
	Banaadir	17	-	-	17	16	1	-
	Baydhaba	1	-	-	1	0	1	-
TOTAL 972-78		1012	78	76	858	632	-226	207,701

TURNOVER OF PATIENTS AT THE LEPROSY CENTER, JILIB
(1960-1980)

Year	January	Admitted	Dismissed	Deceased	December
1960	250	60	25	15 (5.5%)	270
1961	270	41	16	10 (3.6%)	285
1962	285	66	42	9 (3.0%)	300
1963	300	67	26	10 (3.1%)	331
1964	331	46	21	10 (2.6%)	346
1965	346	36	10	8 (2.2%)	363
1966	363	59	50	8 (2.2%)	364
1967	364	51	24	9 (2.4%)	382
1968	382	47	24	5 (1.25%)	400
1969	400	40	148	7 (2.01%)	294
1970	294	53	37	7 (2.34%)	303
1971	303	47	76	12 (4.25%)	262
1972	262	39	42	9 (3.60%)	250
1973	250	79	29	9 (3.09%)	291
1974	291	49	79	6 (2.35%)	255
1975	255	38	31	5 (1.94%)	257
1976	257	52	52	8 (3.2%)	249
1977	249	52	20	4 (1.44%)	277
1978	277	121	15	8 (2.13%)	375
1979	375	22	27	12 (3.35%)	358

SYMPTOMS OF DISABILITY OBSERVED IN THE PATIENTS
AT THE LEPROSY CENTER, JILIB
(Males 303, Females 105 - Total:408)

Data collected with the assistance of nurse trainee Osman Ali/

	Hands		Feet			Eye	
	L	R	L	R		L	R
Anesthesia					Conjunctivitis		
M	186	177	281	281	M	74	73
F	67	66	89	94	F	12	13
Total	253	243	370	375	Total	86	86
Ulcerated wounds (or scars)					Lagophthalmos		
M	17	30	89	89	M	31	44
F	8	7	24	20	F	11	8
Total	25	37	113	109	Total	42	52
Paralysis					Iritis or cheratitis		
M	4	4	10	9	M	20	16
F	-	1	2	2	F	24	25
Total	4	5	12	11	Total	44	41
Clawed extremities					Hazy vision		
M	66	57	30	42	M	96	87
F	28	27	11	10	F	13	15
Total	94	84	41	52	Total	109	102
Reabsorption or loss of bones					Blindness or serious loss of vision		
M	84	89	69	64	M	2	4
F	23	23	19	22	F	1	1
Total	107	112	88	86	Total	3	5

	Lar ngeal Alterations		
	Yes	No	
M	31	272	= 303
F	6	99	= 105
Total	37	371	= 408

	Facial Paralysis		
	Yes	No	
M	31	272	= 303

DISTRIBUTION OF LEPROSY SUFFERERS DETECTED IN SOMALIA,
BY DISTRICT OF ORIGIN

/Numbers indicate new cases detected each year, from
1964 * to 1975/

	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	Total	
Afgooye	204	2	2	2	31	23	8	12	10	76	23	393	
Mogadiscio	123	0	3	5	24	6	10	20	9	7	7	210	
Marka	158	3	5	1	24	28	21	27	7	10	5	315	
Jowhar	197	1	0	5	35	30	3	21	13	12	12	329	
Balcad	29	0	0	0	0	0	0	0	2	2	45	78	
Baraawe	32	0	0	0	6	3	1	0	0	0	0	42	
Wanle Weyn	32	0	0	0	4	3	4	10	2	1	1	57	
B/G. Kisimayu	32	0	0	0	8	4	2	3	7	5	23	84	
Jilib	116	0	0	0	43	44	10	15	91	19	11	349	
Jamaame	43	3	4	1	20	8	8	7	6	3	1	104	
Afmadow	5	0	0	0	3	0	0	0	0	0	0	8	
A/G. Baidhaba	36	4	0	0	9	10	3	14	3	0	3	82	
Bur Hakaba	23	0	0	0	0	0	0	0	0	2	2	27	
Barcheere	0	0	0	0	3	0	1	2	3	1	0	10	
Xuddur	0	0	1	0	0	0	1	0	0	0	0	2	
Beled Weyn	20	0	0	0	3	3	0	2	4	5	8	45	
Galkaayo	4	0	0	0	0	0	0	0	0	0	0	4	
Hargeysa	12	0	0	1	13	0	4	2	3	3	1	39	
From other countries:													
Arabia & Ethiopia	0	0	0	0	5	0	0	0	0	2	1	8	
TOTAL	1064	13	15	15	231	162	76	135	160	146	143	2186	
												Out-patients	115
												Locality of origin not ascertained	207
												TOTAL	2508

* The figures for 1964 include all previously known cases.

