

Leprosy and the Community

SEMINAR IN MADANG, PAPUA-NEW GUINEA, JULY 1978

Under the joint sponsorship of the Government of Papua-New Guinea and the Damien Foundation (Brussels) and with the cooperation of TLM (Australia), a National Seminar on Leprosy Control was held in Madang, P.N.G., from 24 July till 28 July. It was attended by some 30 participants, most of them Provincial Medical Officers and Health Extension Officers in charge of leprosy. Dr Alan Tarutia, First Secretary General for Health, opened the Seminar. The following topics were covered: diagnosis, bacteriological examination, treatment, organization of control, rehabilitation, the eyes; a number of clinical sessions were organized. Resources persons included personnel from the Ministry of Health, WHO, the University of PNG, Training College in Madang, and two oversea consultants (Dr M. F. Lechat from Belgium and Dr D. Russell from Australia).

INTERNATIONAL WORKSHOP ON LEPROSY IN EUROPE Rome, 9-10 June 1978

Under the auspices of the Amici dei Lebbrosi, an *ad hoc* group of leprosy specialists met in Rome on 9 and 10 June 1978 to review the leprosy situation in European countries and to make recommendations for the control of the disease.

It is noteworthy that the widespread mediaeval endemic in Europe was on the wane in the west and north-west countries long before specific chemotherapy became available: only 3 patients remain in Norway, for instance, as a relic of the considerable endemic of the mid-19th century. However, leprosy has persisted in the countries bordering the Mediterranean and in the USSR. The estimated total number of leprosy sufferers in Europe is about 50,000. More recently, leprosy has been imported into the industrialized countries of Western Europe by guestworkers and students from southern Europe and particularly from countries of the Third World where leprosy constitutes a disease of public health importance. Despite this recent accession, leprosy has failed to re-establish itself in any of these countries.

The Group studied up-to-date reports from various European countries, and reviewed the social services available to leprosy patients as well as the legislation in force concerning leprosy.

Although not empowered to offer advice officially, this group of experienced leprologists possessing valuable local knowledge drew up a Report and made recommendations that should carry weight with the governments of the various European countries still faced with an endemic leprosy problem.

LEPROSY IN EUROPE — EPIDEMIOLOGY AND RESIDUAL FOCI

Leprosy was probably brought to Europe by the troops of Alexander the Great returning to Greece from the Indian campaign in 327–6 BC. It was heralded as a new disease by the observant Greek physicians. Once established, it spread to the countries bordering the Mediterranean and even further afield. A secondary importation occurred with Pompey's legionaries coming back from Egypt in 62 BC. Known by the Greeks as leontiasis or satyriasis, and thereafter as *elephantiasis Graecorum* and *Lepra arabum*, true leprosy can be recognized in Greek and Latin texts, and from references in Alexandrian records.

The spread of leprosy in Europe is largely a matter of conjecture, apart from a few skeletal remains from the first millennium of our era showing specific erosion of the anterior nasal spine and alveolar process of the maxilla, and references to the foundation of hospitals and hospices for "leprosy sufferers" in Caesarea, Rome and the lands of Western Europe. It is presumed that some Phoenician, Greek and Roman soldiers, sailors, merchants and administrators carried the causative organism with them to the countries comprising the Roman Empire, but the actual dimensions of the leprosy endemic at that time are of course quite unknown. The whole subject is confused by nomenclature, since the Latin transliteration of the Greek *lepra*, *lepros* was as imprecise and vague as the Hebrew *tsara'ath*.

There are indications that true leprosy spread slowly in mediaeval times westwards and northwards across Europe, becoming generally endemic by the 12th and 13th centuries. The invading armies of Ghengis Khan left pockets of leprosy in central and south Europe, Iran, etc. The number of hospices for leprosy sufferers in European countries indicates a widespread charitable concern for the victims of various chronic skin diseases, or venery, or poverty — rather than a precise representation of the spread of leprosy.

Estimates of the size of the leprosy endemic in southern and western Europe have varied between the widest extremes, but the general consensus now is that at its zenith it attacked no more than about 5 persons per thousand. After the 14th century leprosy began to wane in Europe generally, but it persisted in the countries of Southern Europe, and began to disappear later in those countries that received the invader last, that is Scotland and Scandinavia. The reasons for the decline of leprosy are far from clear, but probably relate to the decrease in domestic overcrowding coupled with the rise in socio-economic levels.

As an endemic disease, leprosy disappeared from the British Isles in 1798, and has all but gone from Norway (Scandinavia) during the past decade, only 3 patients now remaining to represent the widespread endemic of last century. Within the present century, leprosy has gone from the endemic foci in Finland, Denmark, Germany, Switzerland and the Low Countries, and has almost disappeared from France.

Small residual foci, insignificant from the epidemiological standpoint, but interesting nonetheless, remain in Iceland and in France (Nice, Marseilles and Bordeaux, and the *bidonvilles* of Paris housing Algerian immigrants).

Somewhat larger foci persist in parts of USSR to the North West (the old Latvia, Esthonia and Lithuania), but the problem attains the dimensions of an endemic of public health importance in Southern USSR (the Donetz Basin, Astrakhan, Rostov), and in all the countries of Southern Europe bordering the Mediterranean, that is Portugal, Spain, Italy, Greece and Turkey, the islands of Malta and Cyprus, and also Rumania and Yugoslavia.

The prevalence of leprosy in these countries is patchy at present, and to judge from oral tradition and folklore, these foci are local remnants of a former widespread and more uniformly distributed endemic, now perpetuated by some local factor or factors. In the absence of precise figures from the past, it is impossible to delineate the changing dimensions of the leprosy endemic: suffice it to state that the general tendency, as in France and Switzerland, has been for a gradual reduction in the number of victims.

Europe does not differ from other continents in the uncertainty of its total number of leprosy patients. The largest reservoir of undiagnosed and unregistered cases is undoubtedly Turkey (25,000), but USSR (6000), Spain (4000), Portugal (3000) and Greece (1300) also have many leprosy sufferers. More recent figures, and perhaps more accurate figures, will probably be furnished by participants at this Workshop who are provided with more up-to-date information concerning the leprosy situation in their countries.

Until recently, imported leprosy has played little part in the overall European picture, except perhaps in Spain, where a small but constant accession of cases from Algeria (and formerly from Morocco) has left its mark on towns and villages to the south and east of the Iberian peninsula.

In the past 30 years, however, the epidemiological situation in Western Europe has changed, consequent on movements of population from countries where leprosy is endemic to those completely or almost without autochthonous cases. From Southern Europe, workers and in some cases their families have gone to France, Switzerland, West Germany, Belgium, Holland and the United Kingdom. Turkey, Italy, Spain and Portugal have exported their *M. leprae* as well as their guestworkers, not to mention the 70-odd Italians with leprosy in Toronto.

From further afield have come larger accessions — from the Indian subcontinent (India, Bangladesh, Pakistan), from Africa (particularly Nigeria), from Surinam and Indonesia (almost exclusively to Holland), from Algeria, "Indo-China", French West Africa and the Caribbean islands (Saint Pierre and Martinique, Guadeloupe) to France, and from the Philippines and West Indies mainly to Britain.

The countries of southern Europe in which leprosy is endemic have been exporters rather than importers of the bacillus, but the importing countries, although they have been receiving large influxes of populations that include cases of leprosy, have apparently not provided the bacillus with conditions conducive to its transmission. Thus, in Great Britain there has been no indigenously contracted case of leprosy during the past 40 years, despite the presence since 1951 of no fewer than 1054 registered cases. In France and in Holland, the numbers can be counted on the fingers of one hand.

The situation is far otherwise in the southern USSR and in the countries of southern Europe, where the endemic foci persist.

The profoundly practical questions of the disappearance and the persistence of leprosy in Europe may be considered in the light of the extinction of the endemic imported from Scandinavia into Minnesota and Missouri, and of the French focus in Quebec, against the persistence of the French-Spanish importation into the southern States of USA and of the German focus in Venezuela.

Before any effective anti-leprosy therapy became available, leprosy had virtually disappeared from north-western Europe, and in Norway it was the abandonment of the old charitable practice of requiring farmers to entertain leprosy sufferers for 3 months at a time rather than compulsory segregation in hospitals old and new of about a third of the total leprosy population that contributed to the acceleration of a declining incidence. In Japan, to go to the other side of the world, the reduction in total prevalence by two-thirds in 30 years is probably due to humanitarian hospitalization of the majority of sufferers.

In the Europe of today, the epidemiologist has to take into account both the failure of leprosy to install itself in the industrialized West, and its persistence in the countries of southern Europe; the intractable problem of transmission in predominantly rural situations in Italy and southern USSR, and the apparent failure of transmission from imported index cases in the urban West. The ubiquity of tuberculosis and diverse opportunist mycobacteria, especially in an urban environment, may provide group-antigenic stimulation of cell-mediated immunity as well as skin sensitization, and opportunities for repeated and massive exposure to viable leprosy bacilli may be reduced in an urban environment.

The tuberculinization of Europe has been cited as a factor in the reduction of prevalence rates, but the historical data are almost valueless in this regard, and present statistics of prevalence rates of both leprosy and tuberculosis, and the frequency of pulmonary tuberculosis as a major cause of death in old-style leproseries, together offset the slight protection against leprosy apparently afforded by a clinically transient episode of tuberculosis.

Another possible factor sometimes cited is the selective action of such epidemics as plaque and typhus in causing more deaths among the verminous and dirty and ill-nourished sufferers from leprosy than in the non-leprosy population, thus eliminating the carriers of genes of susceptibility to leprosy infection. A pretty theory, impossible of verification.

The role of nutrition in leprosy infection is probably marginal; prolonged undernutrition may be modifying cellular and humoral immunity potential have some effect on susceptibility to leprosy infection, just as such viral diseases as measles may act in the same way.

The importance of these various possibilities cannot be determined in retrospect in explaining the undoubted decline of true leprosy in the countries of north-western Europe since the 15th century to the present day.

A possible modification in the pathogenicity, virulence and invasiveness of the agent has also been suggested to account for the waxing and waning of the leprosy endemic in the world. So far, laboratory limitations have circumscribed any objective demonstration of this possibility,

but with the examples of streptococci and spirochaetes in mind, this factor cannot *a priori* be ruled out. Strains of *M. leprae* from various countries, from different kinds of leprosy, do not apparently differ markedly in pathogenicity or in response to mycobacteriostatic drugs, as judged by inoculation into the mouse footpad.

The imprecision of these suggestions throws us back to the rather unsatisfactory and unscientific explanation of a general reduction in the infective contacts as the likeliest reason for the decline of the leprosy endemic in north-western Europe and its persistence in the south.

The general epidemiological principles for the control and prevention of a specific bacterial infection, which has no necessary intermediate host or vector, should be applied to the countries of Europe still beset by this intractable mycobacterial menace; that is, in the continued absence of specific preventive measures, to reduce rapidly the infectivity of the index cases, and to reduce the occasions of successful passage of the infective agent to susceptible contacts. The practical measures for the application of these principles call for medical expertise and social awareness. With such generally low prevalence rates, and a rising socio-economic level, there appears to be no insuperable medical difficulty in the identification of the index cases and their treatment with a mycobactericidal drug. The social component may well prove more intractable.

The principal reasons for the persistence of the European foci of leprosy, particularly in the countries bordering the Mediterranean will, it is hoped, be revealed in the course of this Workshop; and the importance of the different medical and social components will also become apparent. The medical reasons are: the failure of doctors to recognize the signs of leprosy, especially early leprosy; the lack of confidentiality; poor patient compliance; irregular medication. The social reasons are mainly concerned with prejudice and stigma, and with positive discrimination against leprosy patients.

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