Leprosy in S. Paulo — Brazil (*)

Endemiological studies

by

J. M. GOMES, D. M.

Summary.—This paper is divided into several series: the 1st Part is a review of the organization of the State Department for the Control of Leprosy in the State of S. Paulo, and of the difficulties met with in focalizing the problem from the viewpoint of modern scientific knowledge on this subject.

The 2nd. Part relates the endemic researches on leprosy.

Summarizing we can say: Leprosy has been observed in this State, for well over a century, with successive recrudescences due to the arrival of non-immune immigrants, or to the appearance of various other epidemics.

It has increased gradually throughout almost all the State, and it is found, almost everywhere, favorable conditions for its diffusion.

The nervous form of the disease is more frequently seen in the older cities, on account of the longer duration of the endemicity, but in certain localities, in spite of their being old cities, the cutaneous form predominates, not so much on account of the available foreign element, as apparently due to conditions of the soil and climate.

It seems to us that although the incidence of leprosy is important, it is even important to study the localities where the symptoms of the disease have appeared and developed (foci of diffusion).

The indices of incidence and diffusion do not always coincide, and our graphs show in certain municipalities a difference of about 50 %.

In the matter of prophylaxis, the municipalities with high diffusion percentage should be given more attention, since they constitute the most active foci.

A great majority of these foci are situated on non-sandy soil, which favors a high percentage of humidity in the atmosphere.

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The 3rd Part is devoted to show etio-pathogenic considerations. Lymph nodes examinations and allergic investigations demonstrate that of the individuals in contact with a open leper, a very great number is infected, but that relatively a few acquire the disease. The author believes that the phenomena of sensibilization, which govern almost all infections, give the explanation of these facts. The following fact that, most the contacts become lepers when they are children of a leprous mother than those of a leprous father, seems to him to be explained by the same way.

The trans-placental passage of germs is frequent. This first batch of germs goes perhaps to sleep in the ganglia, thus acting as a sensibilizing element in the morbid process.

The period of latency, whatever the entrance portal to the first infection charge has been prolonged itself until a new amount of germs comes, or until an anergic stage, or even fatigue and misery wakens the germs from their lethargy.

The acknowledge that leprosy is a disease of infancy as do also other authors, and calls to attention the fact that the skin is poorly equipped for defense before 8 to 9 years of age.

He discusses the question as to men being more subject to leprosy than women are, and tries to explain it through women being more constantly kept near the domestic focus — while immunity results from small doses frequently repeated.

The relatively rare occurrence of conjugal leprosy seems to favor this hypothesis.

The action of external agents on the spreading of leprosy, is considered, and especially, the initial leprous lesion, — the bacillary embolus —, and the effects of physical agents, among which the disturbances caused by light rays, are studied at some length.

Through the reactions which it causes the sunlight forces into the circulation the germs which where lying inside fixed cells and disseminates them through the capillary network to almost every organ where they will start new lesions.

Thus the nasal ulcerations are a consequence of the bacillemia: — being one of the portals of elimination, the repeated passing of the germs causes finally an infiltration which ulcerates.

The sunlight should be the reason why warm and damp localities are foci of leprosy.

The light acts through all its radiations, but especially by means of infra-red and ultra-violet rays, which produce antagonic effects.

The humidity, the water moisture, filter the infra-red rays of
the spectrum, thus leaving only the ultra-violet rays which are the more dangerous ones.

This is the reason why leprosy is found more frequently on the coast, in valleys, along rivers, etc.

In dry localities there may be a large number of lepers, but exceptionally will such a places develop into a focus of leprosy.

The last part refers to the difficulties met with to recognize leprosy in the latent and initial stages, and also to differentiate it from other infectious conditions, especially syphilis or even to recognize the association of these two great pathological conditions.

Keeping in mind the deficiencies of the clinical diagnosis, the laboratory is resorted to. But in this case the Wassermann reaction is nearly as often positive in leprosy as in syphilis. Flocculation reactions, such as Kuhn's for example, are better suited to reveal the presence of syphilis.

Several reactions already used are reviewed in reference to leprosy none of which was tried outside a leper asylum, thus it is not possible to judge on their sensibility. Rubino's reaction is really specific, but it has little sensibility.

The author's reaction in use since 1926 is finally described. It consists of a complement reaction, using as antigen Deycke's defated leproid bacillus. (Mc.Junkin's process with acetone and olive oil).

Several methods are described and also the one in use at the S. Paulo Institute of Hygiene.

The sensibility of this reaction to all forms of leprosy, in suspicious cases and in contacts, is demonstrated. There have been some co-fixations, which would decrease its value, were clinical diagnosis does not helps to eliminate these cases.

Finally, the process of serum activation through the administration of potassium iodide to the patients has the triple advantages: of rendering positive some previously negative leper cases; of rendering co-fixations negative; and, possibly, it will constitutes a biological test of immunity.