

**INTERNATIONAL JOURNAL OF LEPROSY
and other Mycobacterial Diseases**

OFFICIAL ORGAN OF THE INTERNATIONAL LEPROSY ASSOCIATION

Publication Office: 1200 - 18th St., N.W., Washington, D. C.

VOLUME 39, NUMBER 3

JULY-SEPTEMBER, 1971

EDITORIALS

Editorials are written by members of the Editorial Board, and occasionally by guest editorial writers at the invitation of the Editor, and opinions expressed are those of the writers.

Armadillo Number Eight and Leprosy

In this issue we publish, with hope, two papers by Kirchheimer and Storrs and by Storrs on the nine-banded armadillo and its apparent susceptibility to infection by *M. leprae*. If these claims are fully substantiated and repeated by others it is fair to hope that the armadillo will take a significant place as an experimental host for the leprosy bacillus and will fall in line with the steady progress over the past decade in the many attempts to identify such hosts. These were first rewarded with the success in the mouse foot-pad model of Shepard, followed by the thymectomized, total body irradiated and bone marrow transfused model of Rees *et al*, and more recently by the neo-natally thymectomized and total body irradiated mouse with lead shielded leg, by Binford, as well as the thymectomized, antithymocytic serum treated Lewis rat model reported by Fieldsteel and McIntosh.

We note with some trepidation the widespread newspaper publicity associated with near-prophetic statements, but take comfort in numerous past newspaper headlines that have demonstrated that what is there printed is often quickly forgotten. The trep-

idation arises from the fact that as of the present writing only one armadillo has been reported as harboring the infection and the total autopsy evaluation on this animal is not yet available. We know the editorial hazards of publishing a single case of something or another and we have a vague feeling that part of the wide publicity results from the uniqueness of the armadillo and the little knowledge of it held by either the scientific community or the general public. We wonder a little if similar publicity would have resulted if the results had been in one mouse, one hamster, or one cockroach, even if equally spectacular on their smaller scale—if that were possible, since there is something inherently spectacular in the armadillo and its size.

The preliminary findings on armadillo number eight were well-presented to a leprosy-knowledgable scientific gathering and a number of competent leprosy histopathologists had opportunity to examine available tissue sections. They, and we ourselves, were impressed with the lepromatous-leprosy-like growth of acid-fast bacilli in the sections. Particularly interesting was the demonstration of acid-fast bacilli in

some dermal nerves. The old pathologic dictum is, however recalled, to the effect that similar or identical morphology does not constitute proof of identical etiology. In leprosy circles, the presence of acid-fast infiltration of nerves is regarded as so characteristic of leprosy as to be almost absolute proof of such infection being leprosy in origin. There are, however, several theoretical pitfalls possible to this assumption (*vide* following editorial) These are precisely most possible in the presence of extremely low resistance to the invading pathogen, as is apparently the case in the reported armadillo infection. If this infection is in due course accepted as true infection with *M. leprae*, the pattern and general distribution will in all probability differ from that seen in the human infection.

The question of terminology arises immediately and it is a temptation to call the armadillo infection "lepromatous leprosy." This designation, however, now has a long and tediously acquired clinical and immunopathologic characterization. None of these characteristics have as yet been demonstrated in the armadillo infection, save for the above-noted striking histopathologic similarity and the reported ability of its pathogen to oxidize D-dopa. It is, in fact postulated that the armadillo died of its infection in just over a year—a most unusual course for "lepromatous leprosy." We have previously noted⁽¹⁾ that in iatrogenic immuno-suppression in the human, tuberculosis may be present in lepromatoid histopathologic patterns of infection. It has,

therefore, been suggested that at least for the present, the designation "lepromatoid infection, presumptively by *M. leprae*" be used.

It is noted that even in Dr. Storrs' comprehensive discussion of the armadillo, there is no mention of any acid-fast, naturally occurring infection of this creature. It is, of course, not impossible but would be highly remarkable if this animal is as susceptible to *M. leprae* as armadillo number eight is reported to be and yet be unaffected by any other acid-fast organism in its natural state. Perhaps information to this effect is as yet inadequate and incomplete. Herein lies one of the many potentials for investigation that these reports open up.

It is hoped that these remarks will not be interpreted as critical of the investigators or as an attempt to lessen their glow of achievement. It is their known competence and demonstrated carefulness that lend hope to the reported findings. It is merely that this path in leprosy research has been so long and tedious and so replete with pitfalls, as the investigators have themselves recognized, that one is aware of the considerable amount of work that they face as they continue their very interesting course. Indeed, it is with this knowledge that we publish these reports with hope of ongoing success and hope of increasing pride in our opportunity to publish. (O. K. Skinsnes)

¹ Skinsnes, O. K. Comparative Pathogenesis of Mycobacterioses. Ann. N.Y. Acad. Sci. 154 (1968) 19-31.