

EDITORIAL

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IS THERE LEPROSY-LIKE DISEASE IN WILD ARMADILLOS?

Man is the only natural host for *Mycobacterium leprae*. That has been one of the main hurdles for not finding a suitable animal model for the transmission of leprosy. Shepard¹ was the first to demonstrate localised multiplication in the foot pad of mice. This significant development provided a useful method for identification of *Mycobacterium leprae* as well as for the screening of anti-leprosy drugs.

Kirchheimer and Storrs^{2,3,4} for the first time could produce disseminated lepromatoid type of leprosy in nine banded armadillos. This has been the greatest single advance in recent times in the field of leprosy research. Kirchheimer's nine banded armadillo provides not only a model for study of leprosy but it yields the largest number of bacilli (eg. 1.5×10^{10} per gram of tissue). This therefore is the only non-human source of large number of bacilli now being used for further research in the immunology and biochemistry of leprosy, preparation of purified protein for delayed hypersensitivity skin testing and eventually for exploring the possibility of vaccine for therapy. In the absence of in vitro culture of *M. leprae* (Skinses⁵ 1975 report awaiting final confirmation) Kirchheimer's nine banded animal remains the only alternative source for the supply of large number of *Mycobacterium leprae*.

However, Walsh et al⁶ reported leprosy-like disease among wild armadillos

in Southern Louisiana, West of Atchafalaya River. He reported the prevalence of mycobacteriosis in wild armadillos to be about 10%. Kirchheimer⁷ examined 309 ferrel armadillos but did not find even a single armadillo having mycobacteriosis. His collection also includes 75 armadillos collected from West of Atchafalaya River - i.e., the same area from where Walsh et al⁶ reported 10% prevalence of mycobacteriosis. Moreover, these armadillos were caught by personnel of the Louisiana State Wild Life and Fisheries Commission, the duplicate specimens from the same having been separately examined by the Epidemiology Investigation Service of the National Centre for Disease Control (CDC), Atlanta, Georgia with negative results. In addition Munoz Rivas⁸ autopsied 80 armadillos caught in the most endemic part of Colombia, South America with all negative results. Innam and Alvarenga⁹ examined about 423 armadillos from Paraguay without finding any Acid Fast Bacilli,

Is there leprosy-like disease in wild armadillos? The question requires to be answered in its true perspective. Kirchheimer et al reproduced lepromatoid type of leprosy in armadillos in 1971. There was no report of leprosy-like disease in these armadillos until 1975 by Walsh⁶. The reports on ferrel armadillos by Kirchheimer⁷, Munoz Rivas⁸ and Inami et al⁹ covering a total of 812 armadillos did not find even a

single armadillo showing mycobacteriosis. Why none of 75 armadillos collected by Kirchheimer et al⁷ from West of Atchafalaya River, failed to show any mycobacteriosis while Walsh et al reported a prevalence of 10% from the same area? Meyers is quoted by Walsh et al as having confirmed bacteriologically and histologically leprosy in wild caught armadillos. However it will be of interest to know whether Meyer's confirmation is based only on the specimens mailed to him by GSRI (Gulf South Research Institute, New Iberia Louisiana). Rees¹⁰ has even hypothesised the possibility of spread

from experimentally inoculated armadillos at GSRI.

The available epidemiological evidence as outlined above is overwhelmingly against the possibility of leprosy-like disease in wild armadillos. Such monumental research should therefore be saved from confusing contradictory reports. If there are any investigations conducted by any independent uninvolved agency based on the eyesight evidence, the same should be made public in the interest of science. It is absolutely necessary that this controversy is settled without any further delay.

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