

MEDICAL MATTERS.

THE MODE OF TRANSMISSION OF LEPROSY.

Two interesting papers on the above subject were published in the *British Medical Journal* last week, which go to prove that the mode of transmission of leprosy from the infected to the healthy, which has hitherto baffled research, may be found in inoculation by an insect, namely, the common bed bug.

Dr. T. Lindsay Sandes, M.A., Research Medical Officer at Robben Island Leper Asylum, states that, as a result of observations on a large number of cases of leprosy, he was led to direct increasing attention to the skin as the probable site of primary inoculation, and decided to conduct his researches in this matter, with a view to establishing, or eliminating, any part the commoner and more widely distributed domestic insects might play. He considered the common house-fly, and the horse-fly, but they are uncommon on Robben Island; and he determined to work, in the first place, with the more abundant material at hand. He then examined the common flea, the local varieties of mosquito, and finally the bed bug (*Acanthia lectularia*), with the result that he found the bugs frequently contained acid-fast bacilli in the alimentary canal. The mosquitoes, fleas and flies very rarely contained bacilli, or they rapidly disappeared and were no longer recognizable. After some preliminary experiments, therefore, Dr. Sandes concentrated his attention upon bugs, concerning which he writes: "Lepra bacilli are undoubtedly imbibed by the bug, and are demonstrable without much difficulty in smears made from the debris of the intestinal canal. I say lepra bacilli, advisedly: they retain their acid-fast staining, and show the morphologic characteristics associated with this organism. No acid-fast bacilli were found in unfed bugs. They are usually isolated, but I have counted as many as twelve in one field. They do not readily disappear, but can be found up to sixteen days after the insects are fed. Acid-fast bacilli, answering all characteristics of the lepra bacillus, were also found in smears made from the tissue juices, and circulating medium of bugs fed on lepers, in smears of the macerated head, and of the proboscis (five days after feeding), and, finally, I found a bacillus once in the excreta deposited on the inner surface of the test tube."

CONCLUSIONS.

Dr. Sandes concludes: "Reviewing the foregoing data, I venture to submit the following conclusions:—

1. "That, considering the enormous numbers of lepra bacilli in the infiltrated or ulcerated skin and nasal mucosa of an active 'tubercular' leper, and the ingestion of bacilli by certain insects, direct contact and transmission by flies, fleas, mosquitos, or other insects, are possible modes of spread of the disease; but such infection, if it ever does take place, is accidental and exceptional.

2. "That, having found acid-fast bacilli answering as far as our imperfect tests permit to the characteristics of lepra bacilli in a considerable proportion (about 30 per cent.) of specimens of *Acanthia lectularia* up to sixteen days after feeding on lepers, there is reason to believe that this species of insect constitutes a very important agent in the spreading of leprosy. Unfortunately, this view can be proven with finality only by the application of bugs previously fed on lepers to the persons of healthy individuals with the resultant development of the disease, unless, indeed, it be found as there is some reason to hope, that certain monkeys and anthropoid apes are susceptible of inoculation with leprosy."

"In connection with the foregoing conclusions, I quote in brief a few details, obtained without leading question or suggestion, of the early history of a patient—an European of intelligence and with a clear memory of the onset of the disease:—

"H. M., No. 1,039, aged at the time 11 years (whose father had been removed as a leper to this asylum some time previously, and whom the son used frequently to visit), observed for the first time in the year 1901 a small red papule under his chin. It enlarged slowly, becoming in area, to use his own simile, about the size of a sixpenny piece. It was indurated, and resistant to treatment. It remained thus, slightly raised, hard, and of a reddish hue for two complete years before any further symptoms appeared. In the year 1903 he noticed for the first time a bluish puffiness of his cheeks; later, slight thickening of his eyebrows, and a diffuse but moderate swelling of the entire countenance. Towards the end of the year tubercles began to appear on his face. Thereafter, tubercles continued to appear at irregular intervals on his face. The glands of his neck became involved. From this time onwards the tubercles and other typical signs were of universal distribution, and showed a diffuse systemic infection.

"The initial pimple, and later tubercle, on the chin would appear to have been the primary lesion, probably caused by the bite of a leprosy-infected bug.

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