TO THE EDITOR:

In 1874 Hansen reported *Mycobacterium leprae* as the causative agent of leprosy. Since that time only very limited multiplication of this mycobacterium has been reported from time to time on artificial media (1). Wheeler reported in 1990 that the *de novo* fatty acid synthesis of *M. leprae* is depressed and that *M. leprae* require an exogenous source of fatty acids for growth (1). Franzblau described the oxidation of palmitic acid of *M. leprae* with an increased synthesis of phenolic glycolipid-I (PGL-I) (1). Kato *et al.* reported the use of water-soluble complexes of palmitic acid and long-chain alcohols for the *in vitro* cultivation of leprosy-derived psychrophilic mycobacteria (1).

At the Armauer Hansen Institute/German Leprosy Relief Association, Wurzburg, Germany, a modified Ogawa medium was developed with the incorporation of different water-soluble fatty acids, water-soluble liposomes, purine precursors and catalase. The egg medium was poured horizontally. Over the remainder of the glass wall a thin layer of agar was deposited. The medium was inoculated vertically with an *M. leprae* suspension (200 μl, 1 × 10⁸/ml) obtained from mouse foot pads previously inoculated with *M. leprae*. The tubes were incubated in a vertical position at 32°C. Three to four weeks after inoculation a spreading phenomenon of the organism appeared in an upward direction (The Figure). The organism appeared to spread upward like a thin film in a wave-like motion from the horizontal inoculated surface of the medium on the glass wall of the tubes, which is suggested to be associated with bacterial growth.

The bacteria which were spreading in an upward direction have been identified using a set of synthetic oligonucleotides [B-16S-27f(6), B-16S-341r(1) and B-16S-788r(6)] homologous to broadly conserved sequences of 16S ribosomal RNA. The *in vitro* amplification of the 796 bp fragment of the bacteria with the polymerase chain reaction (PCR) was followed by direct sequencing of the PCR products. A comparison of these sequences with the published sequence resulted in a 100% homology, especially an insertion of 12 nucleotides unique for *M. leprae* at the 5' end of the 16S rRNA gene was found (1).

The significance of this finding is being investigated currently.

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To the Editor:

Mycobacterium leprae is an intracellular bacterium which is located mainly in the dermal and subcutaneous regions of the skin. In the skin lesion, there is known to be a clear zone separating the epidermis from the granuloma in both borderline lepromatous (BL) and lepromatous (LL) leprosy. In our present study, we examined the skin biopsy sample from a male BL patient, 51 years old, under the electron microscope. The sample was prepared with routine procedures for electron microscopy. Ultrathin sections of the specimen were stained in saturated uranyl acetate and lead citrate separately before they were examined in a Philips CM10.

The samples revealed some bacilli in the epidermal cells. Just above the basement membrane of the epidermis, there were several cells containing M. leprae in their cytoplasm without any membrane structure around the bacilli (Fig.1). These bacilli looked free in the cytoplasm of the epidermal cells (Fig.2). The cells in which the bacilli are located are the typical epidermal cells, having tonofilaments (T) and melanosomes (M) in their cytoplasm and also desmosomes (D) at the junction of each of the cells. Beneath the basement membrane, there is a cell filled with the bacilli (Fig.3). This cell has well developed dendrites on its surface.

There have been reports (2–6) about the epidermal localization of M. leprae in lepromatous leprosy. In their report, Okada, et al.(6) suggested that the bacilli can be phagocytized by the keratinocyte, but they did not mention where the bacilli meet the keratinocyte.

There are several kinds of dendritic cells in the dermis, such as melanocytes, Langerhans cells, and Merkel cells. These cells can move from the dermis to the epidermis and among these cells, Langerhans cells can move up and down through the basement membrane. These cells also have some phagocytic abilities. According to the reports from Cramer (1) and Hulley, et al. (2), melanocytes migrate up from the dermis into the epidermis, not only in normal development, but also during normal tissue maintenance. Also, Klaus (3) showed the transfer of melanosomes from melanocytes to keratinocytes. With all of these previous reports we suggest that the dendritic cell(s)