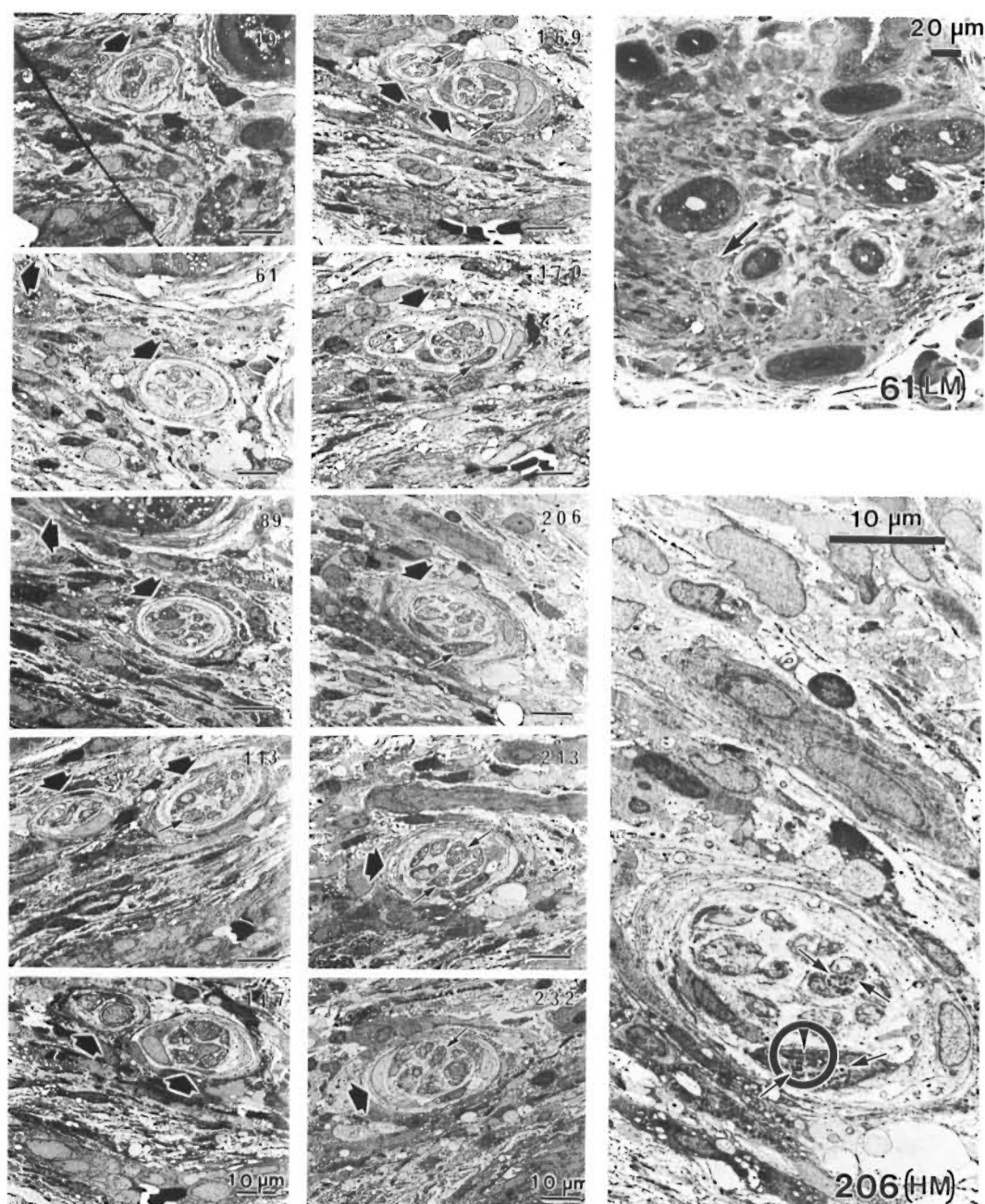


# Electron Microscopic Observations of Small Unmyelinated Nerve Tissue Proper in a Dermal Lesion of a Relapsed Lepromatous Patient

TO THE EDITOR:

When scrutinized once again the ultrastructural features of small unmyelinated nerve(s), apart from the dermal peripheral nerves appearing in the negative films of the photomicrographs of the 300 serial semithin sections described previously (<sup>2</sup>), attracted our attention.

The course of this small nerve was traced through the neighboring serial sections, and the observations are summarized in The Table. Ten photomicrographs were selected and are presented in The Figure. A few bacilli were observed in vacuolar spaces located in the axoplasm (← in photos 113, 169, 170, 206,



THE FIGURE. Ten photomicrographs of small unmyelinated nerve(s) (SUN) selected from photographs of 300 serial semithin sections published earlier (?). ◆ = Small unmyelinated nerve; ← = a few bacillary cells observed in vacuolar spaces located in axoplasm; 61 [LM] = low magnification photomicrograph of 61 with (←) a few bacillary cells observed in vacuolar spaces located in axoplasm; 206 [HM] = high magnification photomicrograph of 206 with (⊙) a bacillary cell caught in the act of division.

213, 232, and 206 [HM] in The Figure). They were diverse and some were seen in the act of dividing (⊙ in photo 206 [HM]). We also saw two nerves joining to form one nerve, or vice

versa, as seen in photo 170 in The Table and ◆ in photos 169 and 170 in The Figure.

In the literature it has been emphasized that intra-axonal leprosy bacilli were only to be

THE TABLE. *Distribution of bacilli observed in 300 serial sections of small unmyelinated nerve(s) (SUN) and the course of the nerve(s).*<sup>a</sup>

1	31	○	61	⊙	91	⊙	121	⊙	151	⊙	181	⊖	211	⊙	241	⊙	271
		○		⊙		⊙		⊙		⊙		⊖		⊙		⊙	
		○		⊙		⊙		⊙		⊙		⊖		⊙		⊙	
		○		⊙		⊙		⊙		⊙		⊖		⊙		⊙	
		○		⊙		⊙		⊙		⊙		⊖		⊙		⊙	
		○		⊙		⊙		⊙		⊙		⊖		⊙		⊙	
		○		⊙		⊙		⊙		⊙		⊖		⊙		⊙	
		○		⊙		⊙		⊙		⊙		⊖		⊙		⊙	
10	40	○	70	⊙	100	⊙	130	⊙	160	⊙	190	⊙	220	⊙	250	⊖	280
		○		⊙		⊙		⊙		⊙		⊙		⊙		⊖	
		○		⊙		⊙		⊙		⊙		⊙		⊙		⊖	
		○		⊙		⊙		⊙		⊙		⊙		⊙		⊖	
		○		⊙		⊙		⊙		⊙		⊙		⊙		⊖	
		○		⊙		⊙		⊙		⊙		⊙		⊙		⊖	
		○		⊙		⊙		⊙		⊙		⊙		⊙		⊖	
		○		⊙		⊙		⊙		⊙		⊙		⊙		⊖	
		○		⊙		⊙		⊙		⊙		⊙		⊙		⊖	
		○		⊙		⊙		⊙		⊙		⊙		⊙		⊖	
20	50	⊙	80	⊙	110	⊙	140	⊙	170	⊙	200	⊖	230	⊙	260		290
		⊙		⊙		⊙		⊙		⊙		⊙		⊙			
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30	60	○	90	⊙	120	⊙	150	⊙	180	⊖	210	⊙	240	⊖	270		300

<sup>a</sup> In photos 1–30 and 257–300, no small unmyelinated nerves seen. In photos 31–60, one small unmyelinated nerve can be seen. In photos 61–169, two small unmyelinated nerves can be seen. In photo 170, one small unmyelinated nerve showing joining of two nerves into one nerve can be seen. In photos 171–260, one small unmyelinated nerve can be seen.

<sup>b</sup> □ = Section did not show any small unmyelinated nerves; ○ = small unmyelinated nerve (SUN); ⊙ = SUN observed containing cross sections of bacillary cells; ⊖ = SUN observed containing longitudinal and cross sections of bacillary cells; ⊕ = SUN observed containing bacillary cell in the act of division.

found in myelinated axons and that none were to be seen in unmyelinated axons<sup>(1,3,4)</sup>. The present observations show that bacilli can be found in unmyelinated axons. Earlier studies, based on the usual electron microscopic examinations, would not have been likely to observe such bacilli since the usual studies do not employ serial sections.

The locations of *Mycobacterium leprae* in dermal peripheral nerves in leprosy patients should be reinvestigated.

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