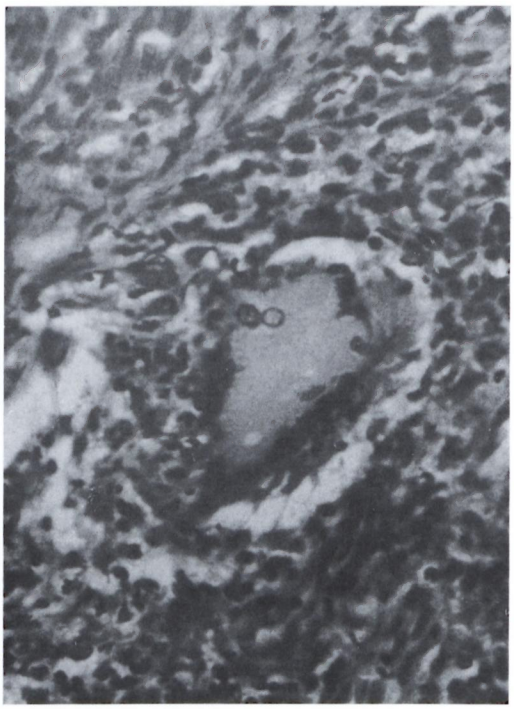

FIG. 3. Note two "sclerotic cells" within a Langhans' giant cell (H&E ×400).

gesting that the previous leprosy diagnosis was wrong.

This report emphasizes the need for considering chromoblastomycosis also in the differential diagnoses of tuberculoid leprosy and for a thorough search for "sclerotic cells" in all sections of biopsy specimens from skin lesions suspected to be tuberculoid leprosy, especially in areas where chromoblastomycosis is endemic. A tuberculoid granuloma in the dermis is only a tissue reaction to different etiologic agents that include bacteria, viruses, fungi, parasites, and foreign bodies.

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Suitability of a Skin-smear Examination Needle for Leprosy Screening by PCR

TO THE EDITOR:

Although leprosy has already been eradicated from some parts of the world, the disease still remains a major health problem, especially in developing countries. Recently, some investigators have reported the detection of *Mycobacterium leprae,* the causative agent of leprosy, by the polymerase chain reaction (PCR) ([1–3]). We synthesized the PCR primers used in these reported studies, and compared their sensitivity in an attempt to use PCR as a practical screening test for leprosy in regions where the disease is endemic, and where such trials are most needed. The subjects were patients in a leprosy sanatorium in Japan. The needle used for conventional skin-smear examination was used to obtain material from which DNA was extracted. In our experiments, although most patients were negative for acid-fast bacilli in the skin-smear test because all of them had been treated, DNA amplification was observed (The Table). This result demonstrated the sensitivity of PCR, since it was capable of detecting partially digested DNA in dead bacteria from the treated patients.

The primers reported by Woods, *et al.* ([3]) showed the highest sensitivity, but accuracy

THE TABLE. *Comparison of PCR with smear test.*

	Leprosy type[a]		
	L	B	T
PCR(+)/smear(+)	8/8	2/2	0/0
PCR(+)/smear(−)	40/60	3/3	4/7
Total	68	5	7

[a] L = Lepromatus; B = borderline; T = tuberculoid leprosy.

of the annealing temperature was essential to prevent nonspecific amplification with human genomic DNA. The accuracy of the temperature setting varies with each PCR processor, and unstable experimental conditions are thought to be likely in developing countries because of variations in electrical voltage and current, which may influence the temperature setting of the processor. Therefore, primers for PCR with higher specificity are desirable for screening tests conducted in the field. Because of the enormous sensitivity of PCR compared with conventional acid-fast staining, *M. leprae* were even detected from tuberculoid leprosy patients. Although most previous studies used skin-biopsy tissue as the DNA source, our results confirmed the suitability of smear-examination needles for leprosy screening by PCR. The need for further treatment in treated PCR-positive patients will vary from case to case, but positivity in untreated patients means that treatment is necessary in all cases. Using such needles, PCR can become a powerful tool for leprosy screening in endemic regions, allowing treatment to be started at an early stage.

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Genetic Vaccines Against Genetically Infective Macromolecules?

TO THE EDITOR:

On 27 September 1991 a report was published in *The Guardian* newspaper [News and Notes, Lepr. Rev. 63 (1992) 94–95] telling how Professor Lex van der Ploeg and Dr. Mary Gwo-Shu Lee are inserting genes into parasites, thus producing parasites which, while perfectly healthy and living in the laboratory, are doomed to die after only a day or two in their human host. What, one might ask, is the relevance of this work—clearly of considerable interest to lay readers—to Hansen's disease? With Hansen's bacilli exactly the opposite applies; that is, they appear to be perfectly healthy and replicating in some human hosts some of the time, but are always "doomed to die" after variable periods—usually of a few days—in the laboratory.

Failure to address seriously the problem of the refusal of Hansen's bacilli to behave like other cultivable mycobacteria is not new. In 1964, I pointed out ([1]) that the statement that *Mycobacterium leprae* could not be cultivated *in vitro* ([7]) was a great advance on the usual idea that *in vitro* cultivation had hitherto been unsuccessful, implying that if only we could obtain the correct physiochemical conditions this technical procedure would become possible. For this, I was perhaps understandably taken to task