Spirochetes in Late Seronegative Syphilis, Penicillin Notwithstanding. By J. LAWTON SMITH, M.D. 1969. Pp. 343, illus. Thomas Springfield, Ill. (\$36)

The sensational nature of the title of this book is belied by a careful reading of the text; what is well documented is not new, what seems to be new is not proved. The book is written with a flair which holds one's interest, but often obscures the lack of definitive evidence.

Of the 37 chapters, seven comprise two pages or less. The author has collaborators for five chapters, and one is by Dr. Charles W. Israel alone. The first five chapters constitute a useful review of the clinical signs and pathology of ocular and neurosyphilis. There follows a succession of some three score case reports, with comments, supporting the thesis that many patients with physical evidence of late ocular or neurosyphilis show negative or equivocal results when tested with the customary lipoidal-antigen tests for syphilis. While this has been well recognized for years, it is a service to emphasize the fact anew, and to call attention to the desirability of using the TPI and FTA tests as diagnostic aids. Of the first 64 cases presented in the main clinical section of the book there was evidence of previous penicillin treatment in only nine, and in some of these documentation was fragmentary. Moreover, it was difficult to be sure that the physical and serological findings in many instances did not represent the end stages of a largely inactive syphilitic process.

The greatest interest attaches to the search for treponemal forms in the aqueous humour and cerebrospinal fluid in patients with late syphilis. Although such organisms have been demonstrated in both aqueous humour and cerebrospinal fluid from time to time over many years (most recently for aqueous humour, by Agarwal, 1960, in Amsler's Clinic), it is perhaps Smith's greatest contribution that he has re-emphasized and stimulated new interest in this phenomenon, especially in late syphilis. That the true nature of these treponeme-like organisms in most instances is not clear does not minimize the importance of the finding, and certainly adds zest to further research. The author unfortunately is misled by over-confidence in the specificity of the fluorescent antibody test as usually performed, into assuming that the spirochaetes observed microscopically are in fact *T. pallidum*.

He has properly turned to laboratory animals as one method by which pathogenic *T. pallidum* can be reasonably definitively identified. But largely ignoring methods used by experimental syphilologists for many years, he has approached the problem in such novel fashion that one is left with considerable question in

most instances whether syphilitic infection has been established in the animal or not. For example, simple darkfield demonstration of active treponemes in the test animal has not been accomplished in most instances. Great store is set by the value of alopecia in the rabbit as a sign of syphilitic infection, but this reviewer has never seen a type of alopecia in syphilitic rabbits that does not also occur in non-syphilitic rabbits. Again, the author has used small primates, owl and squirrel monkeys, as test animals when his own results suggest that these animals react relatively mildly to the infection. In both rabbits and monkeys he has regarded an occasional positive serological test as evidence of syphilitic infection, a most unreliable guide indeed.

When all this has been said, however, it must be noted that Smith's work has stimulated other investigators, and as the results come in the parameters of the problem may be more easily identified. Pathogenic *T. pallidum* can certainly be found at times in both aqueous humour and spinal fluid in late syphilis, and evidence is beginning to accumulate that these might occur in the face of recent penicillin therapy, but there is no indication whatever that this is a frequent occurrence. As interesting perhaps is the question that arises in many cases: if these are not true *T. pallidum* what are they, and what is their significance, if any, in terms of human disease?

Enthusiasms have their role in medicine and science, as long as those enthusiasms are tempered by the accumulation of objective data which can be tested and retested by like-minded investigators. It is to be hoped that many other investigators will be stimulated to study the two problems to which Smith has dramatically called attention in this book, seronegativity in the presence of recognizable lesions of syphilis, such as tabes and optic atrophy; and the significance of the presence of treponeme-like microorganisms in the aqueous humour and cerebrospinal fluid in such cases.

Thomas B. Turner

It has long been customary to speak of "cure" in late syphilis with some caution, the more so since the initial reports by Collart and his colleagues of the finding of treponemes in material from patients and animals after apparently adequate treatment with penicillin. The author has contributed largely to the recent literature in this field. He is fortunate in working in an area where late syphilis is still plentiful, some 700 such cases having been found at this hospital over a 4-year period. From these, 200 cases were selected for presentation in this monograph. Its