

10925

The Micro Flocculation Test of Eagle in Syphilitic White Mice.

ELSIE MAE FITZGERALD, MILDRED SHEPHERD AND JAROLD E. KEMP.

From the Research Division of the Public Health Institute, Chicago, Ill.

A review of the literature shows that reports of the results of the serologic testing of syphilitic white mice are in close agreement. In a study of 93 such mice, Karrenberg¹ and Kertopati² each observed that only 4.3% gave a positive micro Meinicke reaction. Three of Kertopati's positive mice were known to have negative tests prior to inoculation. Using the same test, Schumacher³ found that only 7% of over 300 syphilitic mice were consistently positive over a period of from 3 to 7 months after inoculation, and that the Wassermann reaction was positive in about the same percentage. Zih⁴ and Koch,⁵ however, reported completely negative results with the micro Meinicke test in a total of 64 and 98 syphilitic mice, respectively. The duration of the infection at the time Zih's mice were tested varied from two weeks to 20 months.

In this experiment, 57 adult white mice were inoculated intraperitoneally with from 0.1 to 0.2 cc of an emulsion of a rabbit testicular syphiloma containing approximately 3 to 20 treponemes per high power dark field. The Nichols strain of *T. pallidum* was used. These mice were tested prior to inoculation and found to be entirely negative. The tests were repeated 30, 60, and 120 days after inoculation. Only 38 animals survived for 120 days. Since in our experiences intraperitoneal inoculations with the Nichols strain of *T. pallidum* are successful in 90% of mice as judged by the infectiousness of their brains for normal rabbits, no attempt was made to prove that these mice had been successfully inoculated. The micro Eagle test⁶ was used because of the small amount of blood required for the test and because of its reliability in our hands.

Under ether anesthesia about 0.5 cc of blood was obtained from each mouse by excision of the tip of the tail. The blood was collected in small glass tubes approximately 5 mm in diameter. After coagulation it was centrifuged at 2,000 r.p.m. for 20 minutes, following which 0.1 cc of the serum was removed with a capillary pipette

¹ Karrenberg, C. L., *Arch. f. Dermat. u. Syph.*, 1932, **165**, 605.

² Kertopati, S., *Dermat. Z.*, 1931, **62**, 174.

³ Schumacher, C., *Dermat. Z.*, 1932, **64**, 289.

⁴ Zih, A., *Med. Klin.*, 1929, **25**, 431.

⁵ Koch, F., *Dermat. Z.*, 1933, **65**, 24.

⁶ Eagle, H., and Brand, A. F., *Am. J. Syph., Gonorr. and Ven. Dis.*, 1938, **22**, 22.

and inactivated in a water bath at 56°C for 30 minutes. 0.05 cc of antigen⁷ was then added and the mixture shaken for 5 minutes. It was then incubated for 30 minutes, and the results, both macro- and microscopic, read immediately thereafter.

TABLE I.
Results of the Micro Eagle Test in Syphilitic White Mice.

Duration of infection days	No. of mice	Results	
		Positive	Negative
30	28	0 0%	28 100%
60	47	2 4.3%	45 95.7%
120	38	1 2.6%	37 97.4%

As shown in Table I, the test was entirely negative in 28 mice 30 days after inoculation. Two or 4.3% of 47 mice were positive 60 days after inoculation and 1 or 2.6% of 38 mice was positive 120 days after inoculation. Of the 2 mice that were positive 60 days after inoculation one became negative when tested 120 days after inoculation; the other was still positive at the end of 120 days.

Summary and Conclusions. In a study of the micro Eagle test on the sera of 57 syphilitic white mice, we found that: (1) of 28 mice infected 30 days, none was positive; (2) of 47 mice infected 60 days 2 or 4.3% were positive; and (3) of 38 mice infected 120 days 1 or 2.6% was positive. These findings confirm those of other authors; namely, that a positive serologic test for syphilis infrequently occurs in the syphilitic mouse and is, therefore, of no value in studying the course of experimental syphilis in this animal.

10926

A New Method for Quantitative Measurement of Pain Sensation.

DAVID I. MACHT AND MOSES B. MACHT.

From the Pharmacological Research Laboratory, Hynson, Westcott & Dunning, Inc., and the Department of Psychology, Johns Hopkins University, Baltimore, Md.

A suitable method for quantitative measurement of analgesia (as distinguished from local anesthesia) produced by various physical and chemical agents is a crying need of modern experimental phar-

⁷ Eagle, H., *J. Lab. and Clin. Med.*, 1936, **22**, 300.