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PUBLIC HEALTH REPORTS

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U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

ARTHUR S. FLEMMING, *Secretary*

PUBLIC HEALTH SERVICE

LEROY E. BURNEY, *Surgeon General*

ECHOES from Public Health Reports

ROCKY MOUNTAIN SPOTTED FEVER: VACCINATION OF MONKEYS AND MAN

By R. R. SPENCER, Surgeon, and R. R. PARKER, Special Expert, United States Public Health Service

In a previous publication[1] we have shown that guinea pigs may be successfully vaccinated against Rocky Mountain spotted fever by injections of phenolized emulsions of tick virus. Data are now submitted which (1) prove that this vaccine will also protect monkeys and (2) suggest that it will confer immunity upon man.

PREPARATION OF THE VACCINE

The production of a potent vaccine from tick emulsions is dependent upon a high concentration of virus in the ticks from which it is prepared. By the injection of decreasing amounts of emulsions of infected tick viscera into guinea pigs, the minimal infectious dose of any given emulsion may be approximately determined. After many such titrations, employing fed and unfed infected ticks (*D. andersoni*) at all stages of the life cycle, it has been found that the highest concentrations of spotted fever virus occur two to four days after the beginning of the adult feeding.[2]

Such ticks, usually in lots of 100, are permitted to feed three days on guinea pigs, then at once eviscerated one by one and ground in a mortar for 10 or 15 minutes with sterile sand and a few cubic centimeters of salt solution. By this procedure the internal organs

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[1] Spencer, R. R., and Parker, R. R.: Rocky Mountain Spotted Fever: Experimental Studies on Tick Virus. Pub. Health Rept., Nov. 28, 1924. (Reprint No. 976.)

[2] *Rearing of infected ticks for the preparation of the vaccine.*—The rearing of adult ticks from which the ... ged and tedious process. (Potent virus can not be obtained from the tick in the ... infection. Virus ingested by larvae does not increase appreciably ... of nymphs, that any increase in amount or viru... increase is often greater than in the nymphs ... then reared to adults; for it is in ... necessary to begin opera... are selected ... ion

October 9, 1925, pp. 2159–2167

Dr. R. R. Spencer and Dr. R. R. Parker found that a vaccine produced from tick emulsion immunized monkeys and perhaps man against Rocky Mountain spotted fever. In earlier studies, they demonstrated that this vaccine immunized guinea pigs (Public Health Reports 38: 333–339, Feb. 23, 1923, and 39: 3027–3040, Nov. 28, 1924).