

embryonated chick eggs by injection via the yolk sac of tissue culture suspensions. All isolates are morphologically similar, if not identical to Steinhaus' *N. demacentrophilia*, yet some of them upon cultivation in tissue culture or embryonated eggs react specifically with conjugates against spotted fever rickettsiae, suggesting that these bacilluslike organisms are indeed closely related to *R. rickettsi*, and perhaps represent a nonpathogenic phase of this organism.

- 15. POCKET GOPHERS AND THEIR LICE -- A STUDY IN HOST/PARASITE RELATIONSHIPS
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A brief survey is given of our past and present knowledge of the distribution of pocket gophers and their only mallophagan parasites (Trichodectidae: *Geomydoecus*). Emphasis is then placed on the lice found on the *Thomomys bottae-walbrinus* gopher complex of the western and southwestern United States and northern Mexico. Recent extensive collections of *Geomydoecus* from over 90 of the 200-plus subspecies of these hosts have resulted in interesting geographical delineations of eight species of *Geomydoecus*, these not necessarily following what might be anticipated from the present host classification.

- 16. PATHOGENESIS OF POWASSAN VIRUS IN MICE AFTER AIRBORNE INFECTION
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Intranasal instillation of Powassan virus suspensions into anaesthetized mice induced a fatal infection by a route which did not introduce virus directly into the bloodstream.

Although mice developed fatal encephalitis following inoculation of Powassan virus by several routes, the smallest quantity of virus which induced an overt infection was injected either intracerebrally or intravenously. Fatal infections followed the subcutaneous injection of 20 times the minimum amount of virus. Mice could not be infected by the instillation of more than one million intracerebral doses of virus directly into the gastrointestinal tract. Infection by inhalation of aerosols required about 600 times the minimum virus dose, and infection was initiated by the intranasal instillation of 10,000 or more minimum intracerebral doses of virus.

After aerosol infection of mice with Powassan virus the following sequence of events occurred: Powassan virus invaded and multiplied within the epithelial cells and/or macrophages of the mouse lung. Subsequently, virus appeared in the blood. When the virus titre within the blood attained approximately 3 log₁₀ mouse intracerebral LD₅₀