

SEATO MEDICAL RESEARCH STUDY ON ECTOPARASITES

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of Medical Entomology

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Objective: To assemble information on the distribution and host-parasite relationships of the ectoparasites of vertebrates in Thailand.

Description: Ectoparasites are removed from mammals and birds collected in connection with various disease studies in Thailand. The ectoparasites are preserved, sorted into major groups and identified at SMRL or submitted to specialists abroad for identification. Aliquots of collections used for inoculation of test animals are given priority in these identifications. Studies on the taxonomy and ecology of the various vertebrate hosts are also conducted.

- (1) Rocky Mountain Laboratory, Hamilton, Montana
- (2) Dugway, Utah
- (3) Department of Defense, Washington, D.C.
- (4) Bishop Museum, Honolulu
- (5) Institute for Medical Research, Kuala Lumpur
- (6) University of Maryland, Baltimore
- (7) Bishop Museum, Honolulu.

Progress: Ectoparasites were obtained chiefly from two sources during this reporting period--1) from mammals trapped by personnel of the Department of Entomology and the Department of Rickettsial Diseases in connection with studies on the ecology of rickettsial diseases in Thailand, and 2) from birds collected by personnel of the MAPS project. A total of 856 collections of ectoparasites were obtained from 1866 mammals collected during surveys for scrub typhus foci in Chiangmai, Chiangrai, Choburi, Nakornpanom, Nakornrajsima, Nan, Nongkai, Prachinburi, Samutsakorn, Ubol and Udonthani provinces. These collections included lice (65),\*\* chiggers (503), ticks (35), mites (157), fleas (391) and parasitic flies (3). A total of 2015 collections of ectoparasites were obtained from birds during this period including lice (527)\*\*, feather mites (1654), mesostigmatid mites (56), chiggers (22), ticks (26) and hippoboscid flies (12). These collections were obtained from 236 species of birds trapped for banding purposes in Bangkok, Chantaburi, Choburi, Nakornsrithamaraj, Rayong, Sakonnakorn and Samutprakan provinces. All ectoparasites save the chiggers were referred to authorities outside SMRL for determination. As the above material is identified descriptions of new species, host-parasite and distributional lists of the ectoparasite fauna of Thailand are to be assembled. During the year 13,969 specimens of trombiculid mites (chiggers) were prepared and studied. This material came from 639 collections representing 32 host species. Six new records for Thailand were obtained during this period--Doliosia manipurensis, D. intermedia, Eutrombicula fieldi, Gahripta tylana, Trombicula keechongi and Toritrombicula hasegawai--bringing the number species recorded from Thailand to 85 (Table 1). In addition--19 species new to science were collected during the year. It should be noted that 14 species of Leptotrombidium (Leptotrombidium), the genus which includes most of the known vectors of scrub typhus, are recorded from Thailand--including the proven vector species L. akamushi, L. deliensis and L. scutellaris.

Summary: Ectoparasites were collected from 856 mammals and 2015 birds in Thailand during the year. Nineteen species of chiggers new to science were collected during this period, and descriptions of these new species are being prepared for publication.

Publications:

\*\* Numbers in parentheses indicates number of collections made

- 1) Nadchatram, M. and Mitchell, Carl J. New bat chiggers from Thailand and the Solomon Islands with notes on the subgenus Sasatrombicula Vercammen-Grandjean. J. Med. Ent., 2: 230-232. (1965)
- 2) Nadchatram, M. and Panita Lakshana. Myotrombicula vercammeni, a new species of chigger from Thailand. J. Med. Ent., 2: 230-232. (1965)
- 3) Traub, Robert and Panita Lakshana. Some chiggers of Subgenus Leptotrombidium from Thailand, with descriptions of new species. (In press).
- 4) Lakshana, Panita. A new species of trombiculid mite infesting scorpions in Thailand. (In press).

Table 1. List of Chiggers of Thailand\*

1. *Ascoschongastia* (*Laurentella*) *audyi* (Womersley, 1952)
2. " " *canus* Domrow, 1962
3. " " *ctenacarus* Domrow, 1962
4. " " *globosa* Nadchatram & Domrow, 1964
5. " " *indica* (Hirst, 1915)
6. " " *kittii* Domrow & Nadchatram, 1964
7. " " *leechi* Domrow, 1962
8. " " *lorius* (Gunther, 1939)
9. " " *roluis* (Traub & Audy, 1954)
10. " " *tafia* Nadchatram & Domrow, 1964
11. *Blankaartia* *acuscutellaris* (Walch, 1922)
12. *Cheladonta* *neda* Schluger et al., 1960
13. *Chiroptella* *nocticola* Nadchatram, 1966
14. " *revelae* (Audy, 1952)
15. *Doloesia* (*Doloesia*) *hooperi* Domrow & Nadchatram, 1962
16. *Doloesia* (*Traubacarus*) *brachypus* Audy & Nadchatram, 1957
17. " " *browningi* Audy & Nadchatram, 1957
18. " " *intermedia* Audy & Nadchatram, 1957
19. " " *manipurensis* (Radford, 1946)
20. *Eutrombicula* *fieldi* Audy, 1956
21. " *wichmanni* (Oudemans, 1905)
22. *Gahrlepiea* (*Gahrlepiea*) *elbeli* Traub & Morrow, 1955
23. " " *fenestrulata* Traub & Morrow, 1957
24. " " *marshi* Traub & Morrow, 1957
25. " " *mirabilis* Schluger et al., 1960
26. " " *tenella* Traub & Morrow, 1955
27. " " *tylana* Traub & Morrow, 1955
28. *Gahrlepiea* (*Walchia*) *alpestris* Traub & Evans, 1957
29. " " *chinensis* Schluger et al., 1960
30. " " *dismina* Chen & Hsu, 1960
31. " " *disparunguis pingue* (Gater, 1932)
32. " " *ewingi ewingi* (Fuller, 1949)
33. " " *ewingi lupella* Traub & Evans, 1957
34. " " *isonychia* Nadchatram & Traub, 1964
35. " " *kritochoeta* Traub & Evans, 1957
36. " " *micropelta* Traub & Evans, 1957
37. " " *rustica* (Gater, 1932)
38. *Helenicula* *kohlsi* (Philip & Woodward, 1946)
39. " *lanius* (Radford, 1946)
40. " *mutabilis* (Gater, 1932)
41. " *scanloni* Domrow & Nadchatram, 1964
42. *Leptotrombidium* (*Leptotrombidium*) *akamushi* (Brumpt, 1910)
43. " " *arvina* Schluger, 1960
44. " " *binbium* Traub & Lakshana, 1966
45. " " *deliensis* (Walch, 1922)
46. " " *elisbergi* Traub & Lakshana, 1966
47. " " *fulleri* (Ewing, 1945)

48. *Leptotrombidium* (*Leptotrombidium*) *globosa* Schluger, 1960
49. " " *hanseni* Traub & Lakshana, 1966
50. " " *micula* Traub & Audy, 1954
51. " " *peniculatum* Traub & Lakshana, 1966
52. " " *pilosum* Traub & Lakshana, 1966
53. " " *scanloni* Traub & Lakshana, 1966
54. " " *scutellaris* Nagayo et al., 1921
55. " " *striatum* Nadchatram & Traub, 1964
56. *Leptotrombidium* (*Lorillatum*) *Kianjoei* Nadchatram & Traub, 1964
57. " " *mastigophorum* Nadchatram, 1963
58. " " *oreophilum* Nadchatram & Traub, 1964
59. " " *panitae* Nadchatram & Traub, 1964
60. *Leptotrombidium* (*Trombiculindus*) *hastata* (Gater, 1932)
61. *Microtrombicula munda* (Gater, 1932)
62. " *spicea* (Gater, 1932)
63. *Myotrombicula vercammeni* Nadchatram & Lakshana, 1965
64. *Neoschongastia thomasi* (Radford, 1946)
65. " *struthidia* Womersley, 1952
66. *Neotrombicula scorpionis* Lakshana, 1966
67. *Odontacarus audyi* (Radford, 1946)
68. *Pseudoschongastia novita* Audy & Womersley, 1957
69. *Reidlinia lipoxena* (Womersley, 1952)
70. *Schongastia propria* Audy & Womersley, 1957
71. *Schongastiellia ligula* (Radford, 1946)
72. *Schoutedenichia centralkwangtungae* (Mo, et al., 1946)
73. *Siseca rara* (Walch, 1923)
74. *Susa traubi* Nadchatram & Lakshana, 1965
75. *Toritrombicula hasegawai* (Sasa, et al., 1953)
76. *Trombicula* (*Trombicula*) *calva* Domrow, 1963
77. " " *macclurei* Vercaemmen Grandjean & Nadchatram, 1963
78. *Trombicula* (*Sasatrombicula*) *keechongi* Nadchatram & Mitchell, 1965
79. " " *siamensis* Nadchatram & Mitchell, 1965
80. *Trombigastia harrisoni* (Womersley, 1952)
81. *Walchiella asonluca* (Traub & Audy, 1954)
82. " *hanseni* Nadchatram & Lakshana, 1965
83. " *oudemansi* (Walch, 1952)
84. " *traubi* Womersley, 1952
85. *Whartonia prima* Schluger et al., 1959

\* Prepared April, 1966