Trombidiidae (Acarina) from the Solomon Islands and New Zealand.

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The following descriptions of new species and records of existing species are based on material collected in the British Solomon Islands (Vella Lavella and Treasury Islands), Territory of New Guinea (Green Island), and New Zealand.

It may be mentioned here that although itch-mites were troublesome on both Stirling Island in the Treasury Group and Nissan Island in the Green Group, no scrub-typhus occurred in New Zealand Army troops in either locality.

I am indebted to Mr. H. Womersley for comments on my material and information on synonymy.

Family Leeuwenhoekidae Womersley 1945.
Genus Hannemania Ouds. 1911.

Hannemania vellae n.sp. (Figs. 1–3.)

Larva: Palpal angulate laterally. Palpal setae simple except three or four on the palpal thumb and one on the joint bearing the thumb. Palpal thumb extending to half length of claw. Claw bifurcate, inner prong much longer. Chelicerae with seven or eight large ventral teeth and about the same number of minute denticles on the mesal margin of a dorsal process near the tip of the chelicera. Capitulum roughened dorsally and with two feathered setae ventrally. Scutum transverse, shallowly bi-concave anteriorly with a slight median prominence, convex posteriorly with a swelling caudal of each sensilla base and a concavity between in the median line. Scutum beset with small asperities or pits. Two median or para-median setae anteriorly. Setae stout, not strongly plumose. Scutal measurements—based on nine specimens—(in microns): —AW, 186.3 ± 1.29; PW, 167.5 ± 1.36; SB, 55.25 ± 0.81; ASB, 55.25 ± 0.99; PSB, 16.25 ± 0.56; A–P, 41.16 ± 0.98; AM, 103.45 ± 1.69; AL, 71.86 ± 1.66; PL, 117.0 ± 1.51; Sens., ?. The sensillae (lost in remounting) were filamentous and not clavate. Eyes 2,2, distant from scutum 0.10 mm., the two eyes on each side separated by one and a-half diameters.

Dorsal abdominal setae about 42, not strongly plumose, arranged as in figure. Legs: coxae I with two setae, coxae II and III each with one seta, coxae I with anterior lateral process; tarsal claws 3,3,3. Ventral setae: two para-median setae between and slightly anterior to coxae III; eight to ten setae in two rows of four or five cephalad
of coxae III; no setae in first one-third between coxae III and cauda; numerous setae irregularly arranged in posterior two-thirds. Colour (in life) yellowish. Size large, up to 1.80 mm. long. Body dorso-ventrally flattened, and slightly constricted just caudal of coxae III.

Host: Nine larvae from an undetermined species of bat or flying fox caught in a cave, 11/1/44. The mites were mostly congregated at mid-length in the mid-dorsal line.

Locality: Joroveto, Vella Lavella Is.

Location of Type: Type and three paratypes deposited in South Australian Museum.

The two para-median setae on the transverse scutum and the absence of the anterior process of the scutum, place this species in the genus Hannonmania Ouds. of which no species have been previously described from this area. The majority of the species described are from frogs or toads. The species is distinct, though perhaps nearest to hirsuta Ewing and ochotona Radford. The coarse dentition, extending the full length of the chelicerae, is notable. No evidence of the presence of true spiracles can be seen in these mounts.

Genus Acomatacarus Ewing 1942.

Acomatacarus lygosomae n.sp. (Figs. 4–7.)

Larva: Palpi rounded laterally. First palpal hair plumose, second simple. Palpal thumb small, conical. Palpal claw bifid. Cheliceral teeth in both dorsal and ventral series extending to half length of chelicerae, dorsal teeth larger and recurved. Scutum transverse, sub-pentagonal, anterior margin shallowly concave, posterior margin convex, lateral margins straight or slightly convex, converging anteriorly. Scutum beset with sparse asperities or pits behind median setae and in front of and between the sensillae bases. Sensillae long, filamentous, simple (?). All scutal setae flattened, broad, lanceolate, with median rib, edges fringed. Median anterior scutal process more than half the length of the median setae, rounded apically, constricted behind mid-length. Scutal measurements (in microns): —

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<th>AW</th>
<th>PW</th>
<th>SB</th>
<th>ASB</th>
<th>PSB</th>
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Width between anterior median setae 13 microns in type. Eyes contiguous, anterior larger and more circular distant from scutum one diameter. Dorsal abdominal setae numerous, about 100, similar to scutal setae, arranged as in figure. Legs: length (microns) I, 301; II, 260; III, 287; coxal setae 2,1,1; tarsal claws 3,3,3. Ventral setae, two on head capsule, two between coxae III, numerous setae posteriorly. Body length (microns) 698, width 397.

Host: Lygosoma grande Gray. (?). Coll. G. Garrow.

Locality: Meek’s Hill, Weston, Oamaru, N.Z.

Location of Type: Type and four paratypes in Cawthron Institute Collection, Nelson, N.Z.
Fig. 1.—Hannemannia vellae n.sp., dorsal (L) and ventral (R) halves. Fig. 2.—Hannemannia vellae n.sp., palpi and chelicerae, dorsal. Fig. 3.—Hannemannia vellae n.sp., scutum. Fig. 4.—Acomatacarus lygosomae n.sp., dorsal view. Fig. 5.—Acomatacarus lygosomae n.sp., palpi and chelicerae, dorsal. Fig. 6.—Acomatacarus lygosomae n.sp., scutum. Fig. 7.—Acomatacarus lygosomae n.sp., chelicerae, lateral. Fig. 8.—Nothotrombicula deinacridae gen. et sp. nov., dorsal (R) and ventral (L) halves. Fig. 9.—Nathotrombicula deinacridae gen. et sp. nov., palp. Fig. 10.—Nathotrombicula deinacridae gen. et sp. nov., scutum. Fig. 11.—Trombicula nautini n.sp., scutum. Fig. 12.—Trombicula nissani n.sp., scutum. Fig. 13.—Trombicula densipilata Walsh, scutum.

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The species is amply distinct from *A. australiensis* Hirst and related forms and probably nearest to *A. gateri* Radford. True spiracles are not evident in these mounts.

**Acomatacarus nova-guinea** Wom.

Host: Cuscus, 28/4/44.

Locality: Nissan Island (Green Island), Territory of New Guinea.

The yellow colour of this species differentiated it from *Trombicula nissani* n.sp., which occurred in smaller numbers on the same host.

**Family Trombiculidae** Ewing 1944.

Genus *Nototrombicula* n.gen.

Scutum with anterior median process, but without anterior median seta or para-median setae. Sensillary setae long, filamentous and simple; four other setae on scutum. Coxal setae 2,1,1, modified, short, stout, peg-like. Tarsal claws 3,3,3, claws equal. Genotype, *N. deinaclidæ* n.sp.

**Nototrombicula deinaclidæ** n.sp. (Figs. 8–10.)

Larva: Palpi rounded laterally. Palpal hairs; 1st. slightly fringed apically, 2nd. and 3rd. simple. Palpal thumb small; palpal claw short, stout, trifid, prongs sub-equal. Cheliceral teeth not clearly discernible (ventral series ?). Scutum transverse, PW greater than AW, with acute, triangular, median anterior process. Disc of scutum without sculpture but transversely striate between bases of sensillae and a concave posterior line which embraces the sensilla bases and forms the posterior margins of a raised area. Anterior lateral margins straight but diverging postero-laterally. Anterior and posterior angles rounded. Lateral margins slightly concave between AL and PL setae. Posterior margin with a slight concavity mesad of each PL angle, and a slight median convexity. Anterior median setae or para-median setae not present. AL and PL setae fairly stout, widest at base and tapering to apex, only slightly plumose or fringed. Sensory setae long, simple, filamentous. Scutal measurements (in microns):

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<th>AW</th>
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<td>59.4</td>
<td>82.5</td>
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Eyes 2,2, sub-equal, sub-circular, contiguous, distant 115 microns or five diameters from PL setae with which anterior eye is in line. Dorsal abdominal setae fairly stout, not strongly plumose, widest at base, tapering to tip, arranged 6,6,6,6,2. Cuticular striations marked, whorled around bases of dorsal setae which lie in depressions. Legs: lengths (microns) 'I, 200; 'II, 185; 'III, 180. Coxal setae 2,1,1, modified, short, stout, peg-like, 20 microns long, 6·6 wide. Stigma between coxae I and II. No true spiracle between coxae I and head. Ventral setae: two on capitulum, two between coxae II and III; 10,6,2,2,2, pre-anal; two para-anal; four sur-anal. Anus with prominent lobes bearing two setae on each; anterior seta short, posterior twice as long. Body length (microns) 1,204, width 660.
Host: Giant weta (*Deinacrida rugosa*?). Coll. M. Laird.

Locality: Mt. Peel, Nelson, N.Z.

Location of Type: In Entomology Division Collection, Nelson, N.Z.

Described from three specimens on one slide mount. Only one—the type—with chelicerae whole. This species in existing generic keys would run to *Hemitrombica* Ewing, but differs in having tarsal claws 3,3,3, and equal. In facies it is an *Acomatacarus* without the AM setae and with modified coxal setae.

**Genus Trombicula** Berlese 1905.

**Trombicula nautini** n.sp. (Fig. 11.)

**Larva:** Palpi rounded laterally, Palpal hairs 1, 2, and 3 simple. Palpal thumb small. Palpal claw trifid. A single (ventral ?) cheliceral tooth. Scutum transverse, anterior margin straight with slight median convexity, posterior margin rounded, lateral margins converging anteriorly and slightly concave between AL and PL setae. Scutum beset with asperities or pits, except anterior margin and behind sensilla bases. AL and PL setae stout, AL strongly fringed on convex side, PL less strongly fringed on both sides. Anterior median seta missing. Sensillae long, filamentous, feathered on distal one-third. Sensilla bases behind line joining PL setae. Ridge behind sensilla bases. Scutal measurements (in microns):—

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<tr>
<th>Type</th>
<th>AW</th>
<th>PW</th>
<th>SB</th>
<th>ASB</th>
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<td>23</td>
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Paratype: 81 | 91 | 36 | 30 | 20 | 16 | 26 | 49 | 1 |

Eyes 2,2, in line with PL, distant two and a-half diameters from scutum, indistinct. Dorsal abdominal setae stout, arranged 2,8,6,4,2. Leg length (microns). I, 264; II, 231; III, 264. Coxal setae 1,1,1; tarsal claws 3,3,3. Ventral setae; two on head capsule; two between coxae II; two between coxae III; thereafter 2,4,2 pre-anal; 4 para-anal; 2 caudal. Body length (microns) 760, width 561. Colour (in life) reddish.


Locality: Invercargill, N.Z.

Location of Type: Entomology Division Collection, Nelson, N.Z.

The type and paratype are mounted separately on the same slide. This species comes nearest *T. quadrine* Wom. but differs in the shape and proportions of the scutum and in the arrangement of the dorsal setae. Six larvae on a slide mount in the Cawthron Collection, labelled "Parasite on a Gecko, Big Hill, 18/3/12, G. Garrow," belong to this species. A notes states that the colour is "normally red."

**Trombicula nissani** n.sp. (Fig. 12.)

**Larva:** Palpi rounded laterally; 1st. and 2nd. palpal setae plumose, 3rd. simple. Palpal thumb half length of palpal claw, latter bifid. Cheliceral teeth not discernible. Scutum transverse, sub-rectangular, beset with sparse asperities except for a V-shaped area including
anterior margin and extending back to between sensilla bases. Anterior angles rounded, posterior angles slightly more acute, anterior margin slightly concave, lateral margin slightly concave opposite anterior eye, posterior margin evenly and shallowly convex, sensilla bases with a short ridge anteriorly. Scutal measurements (in microns) :-

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<thead>
<tr>
<th>Type</th>
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<th>PSB</th>
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<td>26</td>
<td>36</td>
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<td>36</td>
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Paratype  

|         | 66 | 69 | 23 | 26  | 13  | 29  | 26 | 33 | 43 | 1    |

Eyes 2,2, contiguous, anterior larger, distant half diameter from scutum. Dorsal abdominal setae arranged 2,8,6,6,4,2. Leg length (microns) : I, 274; II, 204; III, 264. Coxal setae 1,1,1; tarsal claws 3,3,3. Ventral setae: 2 between coxae II, 2 closer together between coxae III, row of 6 midway between coxae II and anus, 4 behind this and before anus, 2 on each side of anus, two rows of 2 behind anus. Body length (microns) 330, width 274.

**Host:** Two specimens from "Cucusus," 28/4/44.

**Locality:** Nissan Is. (Green Is.), Territory of New Guinea.

**Location of Type:** Deposited in collection of South Australian Museum.

The type is mounted on a slide with three specimens of *Acomatacarus nova-guinea* Wom. The species comes nearest to *T. glabricolens* Hirst, from which it differs in the number and arrangement of the dorsal setae, and *T. walchi* Wom., from which it differs in the proportions of the scutum.

**Trombicula hirsti** Sambon.

**Host:** Pig, 26/2/44; Man, 28/2/44. Coll. G. L. Clarke.

**Locality:** Nissan Is. (Green Is.), Territory of New Guinea.

This species, of which *T. minor* Berlese and *T. minor* var. *déliensis* Walch are synonyms (*testa* H.W.), was abundant on pigs on Nissan Is. The mites were mainly on the shoulders in the mid-dorsal line, where their reddish clusters were prominent at hair-bases and in wrinkles and depressions. Pigs were notably abundant on this island and some annoyance was caused by the mites on man.

**Trombicula densipiliata** Walch (Fig. 13.)

**Host:** Rat, 23/3/44.

**Locality:** Nissan Is (Green Is.), Territory of New Guinea.

This species is recorded here on the basis of a single specimen with a damaged abdomen.

**Schöngastia vandersandeii** Ouds.

**Host:** Man. Coll. R. D. Dick.

**Locality:** Stirling Is. (Treasury Group), B.S.I.

This species, of which *S. bliestowei* Gunther is a synonym (*testa* II. W.), was the cause of much scrub-itch on Stirling Is., where the association was first noted by G. L. Clarke.