

FOUR NEW SPECIES OF *LAURENTELLA* FROM S. E. ASIA
(ACARINA, TROMBICULIDAE)

BY

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Summary.

Four new chiggers of the subgenus *Laurentella*, genus *Ascoschöngastia*, are described as follows — *L. canus* n. sp. from *Rattus canus*, Malaya; *L. octavia* n. sp. from *Tupaia glis*, Vietnam; *L. leechi* n. sp. from *Rattus edwardsi* and *Dremomys rufigenis*, Laos; and *L. ctenacarus* n. sp. from *Callosciurus tenuis*, Malaya.

Since the erection of *Laurentella* by AUDY (1956) for the *indica* species group of *Euschöngastia* s. l., and the recognition of its affinities with *Ascoschöngastia* (DOMROW, 1957), a further four new species of this trombiculine subgenus have accumulated in this laboratory. It is the purpose of this paper to describe and figure these species. VERGAMMEN-GRANDJEAN (1960) also follows this classification.

Ascoschöngastia (*Laurentella*) *canus* n. sp.

Figs. 1-9.

Euschöngastia (*Laurentella*) "CAN" Audy, 1956, *Bull. Raffles Mus.*, 28 : 15.

Diagnosis. — *A. (L.) canus* is the only species known to have only four setae in the first dorsal row. All other species have six or more.

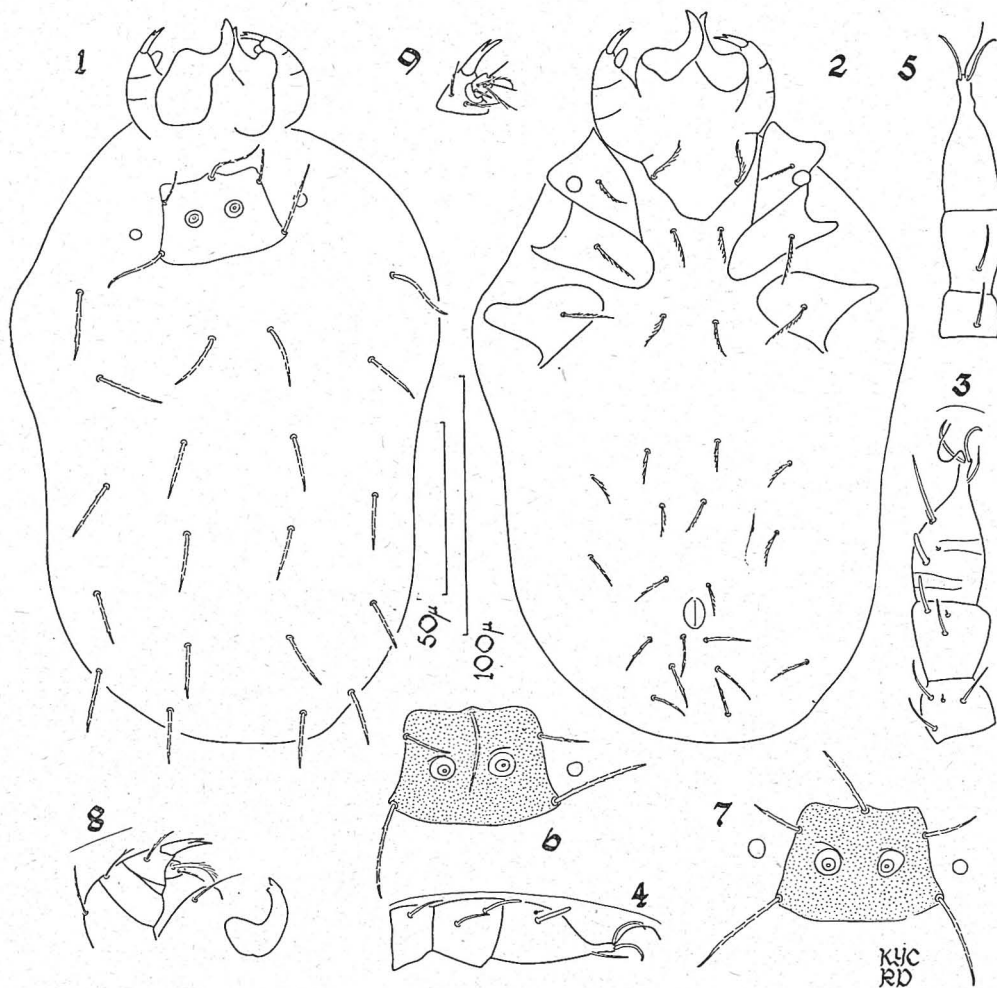
Type material. — Holotype larva and one paratype larva from *Rattus canus*, Kepong, Selangor, Malaya, 23.vii.1954; two paratype larvae from *R. canus*, Kepong, 28.vii.1952. Holotype larvae of Malayan species in British Museum (Natural

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History), London ; holotype larvæ of Indochinese species in U. S. National Museum, Washington. Paratypes (as far as possible) also in these Museums, Rocky Mountain Laboratory, Hamilton, and both my laboratories.

Larva. — A small species, even when engorged ; podosoma with rounded sides, but opisthosoma parallel-sided. Idiosoma from 228 to 254 μ long, and from 165 to 178 μ wide.

Body setation. — Dorsal setae few in number, stout, and shortly barbed ; arranged 2.4.4.4.4.2. Humeral setae single, 29-31 μ long ; DS 23-25 μ long ; CS 18-23 μ



FIGS. 1-9. — *Ascoshöngastia (Laurentella) canus* n. sp.

1 and 2. Dorsal and ventral views of body, respectively ; 3, 4 and 5. Specialized setation of legs I, II and III, respectively ; 6 and 7. Scuta with eyes ; 8. Dorsal view of gnathosoma ; 9. Ventral view of palpal tibiotarsus.

long. Ventral setae about 18 in number, those near anus 16-17 μ long. Sternal setae 2.2.

Scutum typical of genus, *i. e.* with AL's on shoulders, and set well behind AM. Surface finely punctate. Posterior margin convex, but rather straight medially. SB set near centre of scutum, slightly closer to level of AL than that of PL. PL > AM > AL. Eyes weak, 1 + 1.

Gnathosoma. — Galeal setae nude. Chelicerae with weak denticle immediately behind tricuspid cap. In addition to the tarsala, the palpal formula is b.b/n.bbb.B + 5b/n. Subterminala absent. Tibial claw 2-pronged.

Legs all 7-segmented. Coxal formula 1.1.1. Tarsus I with two bars. Specialized setation as follows — *Tarsus I* with pretarsala, subterminala, parasubterminala, tarsala and microtarsala; *tibia I* with two tibialae and microtibiala; *genu I* with three genualae and microgenuala. *Tarsus II* with pretarsala, tarsal and microtarsala; *tibia II* with two tibialae; *genu II* with genuala. *Tibia III* with tibiala; *genu III* with genuala. No flagelliform setae on leg III.

Standard data in micra of larval scutum of L. canus n. sp.

AW	PW	SB	ASB	PSB	SD	AP	AM	AL	PL
38	50	17	18	—	—	19	24	15	27
35	46	16	18	—	—	17	24	14	31
36	46	17	17	—	—	21	22	15	27
38	46	17	19	16	35	19	24	14	27
36	47	18	18	16	34	18	24	14	27
39	49	21	19	—	—	19	22	14	27

Notes. — A further specimen (in company with *A. (L.) indica* (Hirst) and *A. (L.) octavia* n. sp.) has been examined as follows — *Tupaia glis*, Nya Ho Agricultural Station, Phan Rang, Vietnam, 23.vi.1960, R. Leech and Lim Boo Liat.

***Ascoshöngastia (Laurentella) octavia* n. sp.**

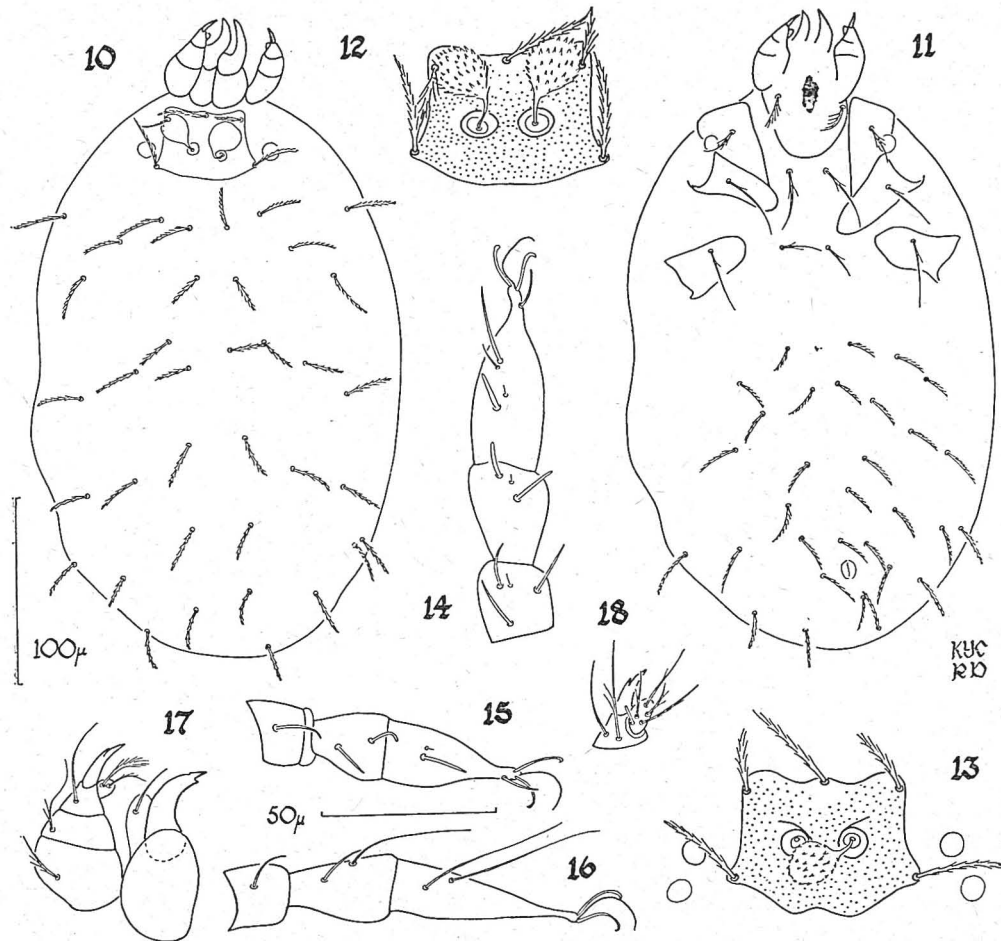
Figs. 10-18.

Diagnosis. — Five Oriental species of *Laurentella* are now known with sternal setae 2.2, and a dorsal setal pattern commencing 2.8. These are the widespread *L. indica* (Hirst), *L. indicella* (Traub and Audy) from Borneo, *L. arcaricola* (Traub, Morrow and Lipovsky) from Korea, and the two Indochinese species described below — *L. octavia* n. sp. and *L. leechi* n. sp. In the first three species, the dorsal setal pattern commences uniformly 2.8.6.6. In *L. octavia* the pattern commences 2.8.2.8.6, and in *L. leechi* 2.8.4.6.2. Further, in *L. octavia* the sensillae are subglobose, and in *L. leechi* they are claviform.

Type material. — Holotype larva and seven paratype larvae from a shrew, *Tupaia glis*, Nya Ho Agricultural Station, Phan Rang, Vietnam, 23.vi.1960,

R. Leech and Lim Boo Liat. A further seven specimens with the same collection data were also examined, and were accompanied by specimens of *A. (L.) indica* (Hirst) and *A. (L.) canus* n. sp.

Larva. — Idiosoma in engorged mounted specimens from $245 \times 161 \mu$ to $317 \times 227 \mu$; unengorged specimen $165 \times 135 \mu$.



FIGS. 10-18. — *Ascoshöngastia (Laurentella) octavia* n. sp.

10 and 11. Dorsal and ventral views of body, respectively; 12 and 13. Scuta with eyes; 14, 15 and 16. Specialized setation of legs I, II and III, respectively; 17. Dorsal view of gnathosoma; 18. Ventral view of palpal tibiotarsus.

Body setation. — Dorsal setae cylindrical, arranged 2.8.2.8.6.6.4.2 (one specimen commences 2.9.2.8). Humeral setae single, $31-35 \mu$; DS $25-29 \mu$; CS $19-23 \mu$ long. Ventral setae about 32 in number, those near anus $21-23 \mu$ long. Sternal setae 2.2.

Scutum with typical shoulders, fairly uniformly punctate except for zone behind AM seta. Posterior margin biconvex, but to a variable extent. $PL=AM>AL$. Sensillae subglobose, set nearer to level of PL than that of AL. Eyes $2+2$.

Gnathosoma. — Galeal setae nude. Chelicerae with weak subapical tooth dorsally, near tricuspid cap. In addition to tarsala, palpal formula b.b.nnb.B+5b. Subterminala absent. Tibial claw 2-pronged.

Legs all 7-segmented. Specialized setation as follows — *Tarsus I* with pretarsala, subterminala, parasubterminala, tarsala and microtarsala; *tibia I* with two tibialae and microtibiala; *genu I* with three genualae and microgenuala. *Tarsus II* with pretarsala, tarsala and microtarsala; *tibia II* with two tibialae; *genu II* with genuala. *Tarsus III* with two mastitarsalae; *tibia III* with tibiala and mastitibiala; *genu III* with genuala. Coxal formula 1.1.1. Many of the ordinary leg setae are virtually nude, but may be distinguished from the specialized setae by their intermediate length, lesser degree of ciliation, and solid appearance.

Standard data in micra of larval scutum of *L. octavia* n. sp.

AW	PW	SB	ASB	PSB	SD	AP	AM	AL	PL	Sens
43	55	18	23	19	42	27	32	22	31	—
41	52	15	22	19	41	27	30	19	29	26 × 15
42	55	16	23	21	44	27	30	18	31	29 × 16
42	54	16	23	19	42	26	30	18	31	27 × 15
40	52	16	22	18	40	24	30	17	27	—
43	54	—	20	18	38	24	29	18	30	—

Notes. — The following three larvae were also noted among larger numbers of *A. (L.) indica* — one from a squirrel, *Menetes berdmorei morescens*, Nya Ho, 22.vi.1960; one from *M. b. morescens*, Phan Rang, 22.vi.1960; one from *Rattus rattus*, Phan Rang, 23.vi.1960. Co-collectors R. Leech and Lim Boo Liat.

***Ascoshöngastia (Laurentella) leechi* n. sp.**

Figs. 19-25.

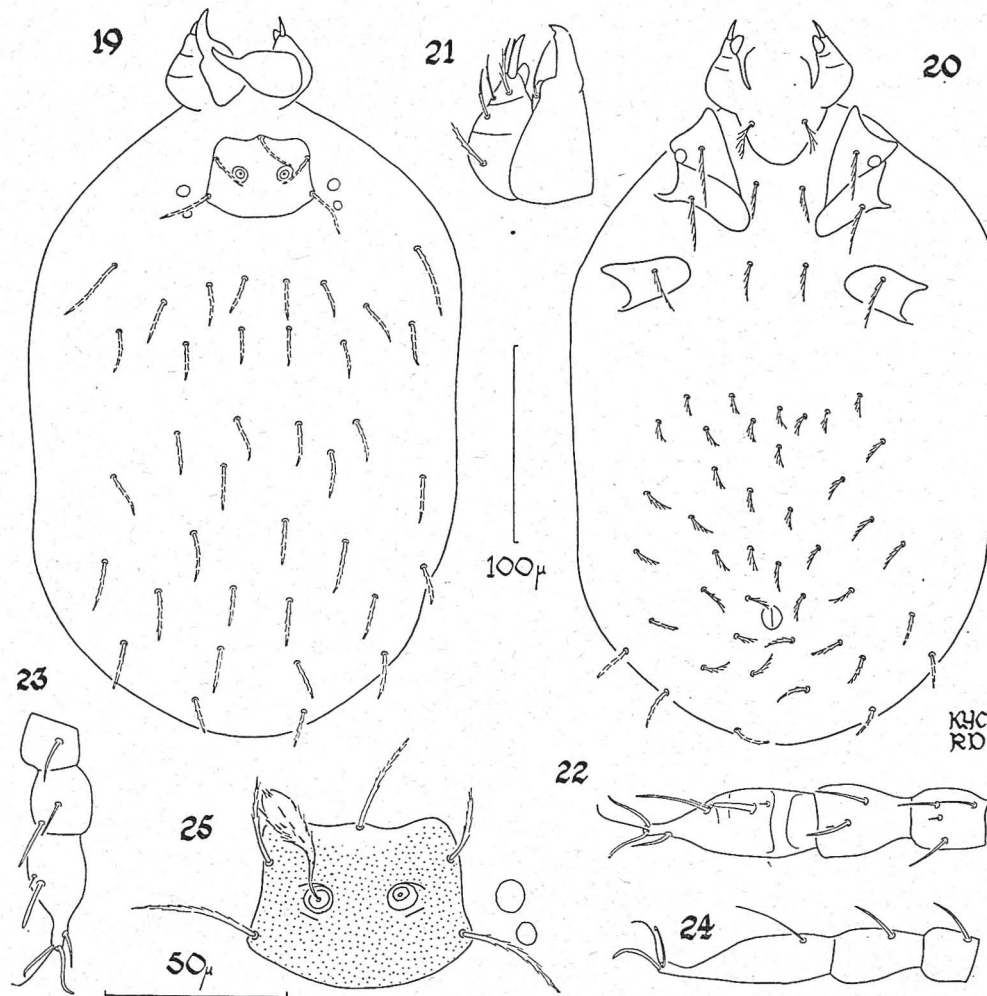
Diagnosis. — See that given for *L. octavia* n. sp., the preceding species.

Type material. — Holotype larva from *Rattus edwardsi edwardsi*, Ban Theuong 3,450', 18 km NW Xieng Khouang, Laos, 27.viii.1960, R. Leech and M. Nadchatram; one paratype larva from *Dremomys rufigenis*, Thateng 4,000', Bolovens Plateau, Laos, 24.vii.1960, R. L. and M. N.

Larva. — Idiosoma elongate in engorged specimen, $330 \times 220 \mu$.

Body setation. — Dorsal setae cylindrical, barbed along shaft, arranged 2.8.4/3.6.2/3.6/5.4.4.2. Humeral setae nearly twice as long as dorsal setae, 40 μ long; DS 23 μ long, CS 22 μ long. Ventral setae about 42 in number, those near anus 22 μ long. Sternal setae 2.2.

Scutum. — Anterior and lateral margins typical. Posterior margin convex, but slightly flattened medially. Surface punctate. $PL > AM > AL$. Sensillae clavate, but SB fairly wide apart and centrally placed. Eyes weak, particularly posterior pair.



FIGS. 19-25. — *Ascoschöngastia (Laurentella) leechi* n. sp.

19 and 20. Dorsal and ventral views of body, respectively; 21. Dorsal view of gnathosoma; 22, 23 and 24. Specialized setation of legs I, II and III, respectively; 25. Scutum and eyes (at a slightly larger scale than indicated, this figure having been drawn with a $\times 100$ lens, not a $\times 95$).

Gnathosoma. — Galeal setae nude. Chelicerae with weak denticle just behind tricuspid cap. In addition to the tarsala, the palpal formula is $b.n/b.bn/bb$. Palpal tarsus indistinct. Tibial claw 2-pronged.

Legs 7-segmented. Coxal formula 1.1.1. *Tarsus I* with two bars. Specialized setation as follows — *Tarsus I* with pretarsala, subterminala, parasubterminala, tarsala and microtarsala; *tibia I* with two tibialae and microtibiala; *genu I* with three genualae and microgenuala. *Tarsus II* with pretarsala, tarsala and microtarsala; *tibia II* with two tibialae; *genu II* with genuala. *Tibia III* with tibiala; *genu III* with genuala. *Tarsus III* with one flagelliform seta.

Standard data in micra of larval scutum of L. leechi n. sp.

AW	PW	SB	ASB	PSB	SD	AP	AM	AL	PL	Sens
48	57	22	21	23	44	19	29	22	36	—
46	52	21	21	23	44	21	—	—	—	—
48	55	22	22	24	46	20	27	20	34	25 × 9

Notes. — The following material has also been examined, from which the third set of values for scutal standard data has been taken — several larvae from the ear of one *Rattus* sp., (R70417), Xieng Khouang, Laos, 1.ix.1960, R. L. and M. N.

Ascoshöngastia (Laurentella) ctenacarus n. sp.

Figs. 26-33.

Euschöngastia (Laurentella) "CTEN" Audy, 1956, *Bull. Raffles Mus.*, 28 : 15.

Diagnosis. — Three Oriental species of *Laurentella* are now known with the sternal setae arranged 2.4 rather than 2.2 as in the majority of species. These are *L. audyi* (Womersley) and *L. ctenacarus* n. sp., both from Malaya, and *L. mcnnichi* Asanuma from Japan. In *L. audyi*, the setal pattern commences 2.6, while in the other two species it starts 2.8. *L. ctenacarus* may be separated from *L. mcnnichi* (according to the original description) by the presence of mastitarsala III, the consistently smaller scutal standard data, and (perhaps) the level of SB.

Type material. — Holotype larva and eighteen paratype larvae from a squirrel, *Callosciurus tenuis*, Kepong, Selangor, Malaya, 21.xii.1953.

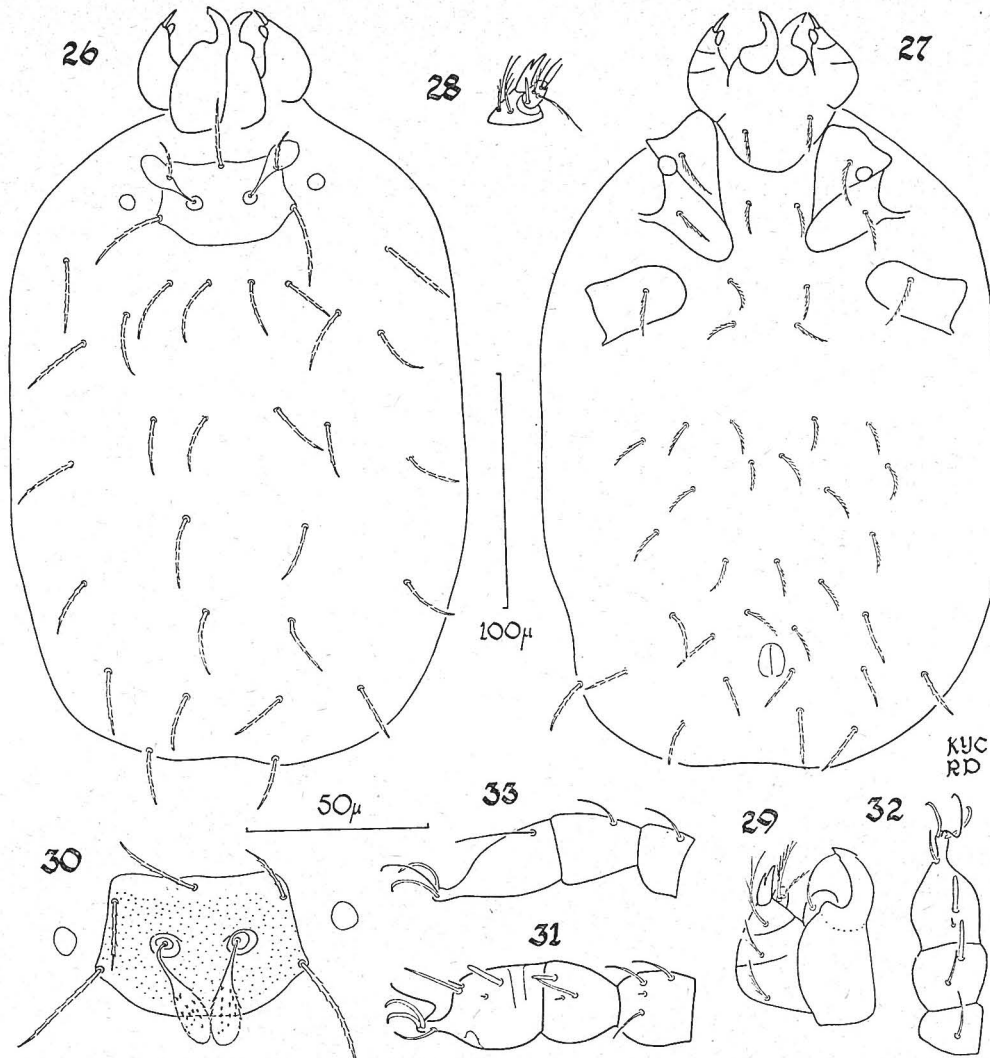
Larva. — A small species even when engorged, mounted specimens showing the idiosoma 242-264 μ long and 165-187 μ wide.

Body setation. — Dorsal setae cylindrical, shortly barbed, arranged 2.8.6.4.4.2.2. Humeral setae single, 32-34 μ long; DS 24-29 μ long; CS 19-22 μ long. Ventral setae about 30 in number, those near anus 18-19 μ long. Sternal setae 2.4.

Scutum transverse, with anterior and lateral margins fairly straight. Posterior margin deep, convex, rectilinear medially. AL set on shoulders, behind level of AM. PL > AM > AL. Sensillae claviform, set fairly wide apart, with SB nearer level of PL than that of AL. Eyes 1 + 1.

Gnathosoma. — Galeal setae nude. Chelicerae with very weak denticle near tricuspid cap. Apart from the tarsala, the palpal formula is b.b/n.bbb.B + 5b. Subterminala absent. Palpal claw 2-pronged.

Legs all 7-segmented. Coxal formula 1.1.1. Tarsus I with two bars. Specialized setation as follows — *Tarsus I* with pretarsala, subterminala, parasubterminala, tarsala and microtarsala; *tibia I* with two tibialae and microtibiala; *genu I* with three genualae and microgenuala. *Tarsus II* with pretarsala, tarsala and microtarsala; *tibia II* with two tibialae; *genu II* with genuala. *Tarsus III* with mastitarsala; *tibia III* with tibiala; *genu III* with genuala.



FIGS. 26-33. — *Ascoshöngastia (Laurentella) ctenacarus* n. sp.

26 and 27. Dorsal and ventral views of body, respectively; 28. Ventral view of palpal tibio-tarsus; 29. Dorsal view of gnathosoma; 30. Scutum with eyes; 31, 32 and 33. Specialized setation of legs I, II and III, respectively.

Standard data in micra of larval scutum of L. ctenacarus n. sp.

AW	PW	SB	ASB	PSB	SD	AP	AM	AL	PL	Sens
40	52	19	17	16	33	18	26	17	35	33 × 10
41	56	19	18	17	35	18	25	17	36	31 × 10
40	52	19	19	16	35	19	27	19	35	33 × 8
40	52	19	18	18	36	19	29	18	32	31 × 9

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