

One new genus and three new species of Indian aphids (Homoptera, Aphididae)

by

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ABSTRACT

In this paper the following new genus and new species are described from the Darjeeling area of India. *Pyrolachnus* gen. nov., type-species *Lachnus pyri* Buckton, 1899; *Aiceona litseae* spec. nov., from *Litsea polyantha*; *Nippolachnus bengalensis* spec. nov., from *Eriobotrya dubia*; *Nippolachnus eriobotryae* spec. nov., from *Eriobotrya petiolata*. Keys are given to the genera of Lachnini, and to the known species of the genus *Nippolachnus* Matsumura.

Aiceona litseae spec. nov.

APTEROUS VIVIPAROUS FEMALE.

Morphological characters: Body oval, about 2.16—2.69 mm long. Head brown to dark brown sclerotic, with a median suture on anterior part; frontal outline convex. Antennae 6-segmented, dark brown, hairy, about 0.44—0.53 times as long as body, without secondary rhinaria; segment III with a large number of hairs, the longer ones mostly directed inwards and up to about 3—3.5 times as long as basal diameter of the segment. Eyes dark, of 3 facets, but specimens with multicorneal eyes are occasionally found. Rostrum extending to the 3rd pair of coxae; ultimate segment slender, with straight sides, tapering but not quite acute-tipped, just longer than, to about 1.25 times as long as 2nd joint of hind tarsi, with about 6—8 long and fine hairs besides 6 very short and inconspicuous preapical ones. Prothorax fused with head, brownish sclerotic; meso- and metanota with small marginal sclerites; abdominal tergum membranous. Dorsal hairs numerous, long, with finely drawn out apices, many placed on small brownish sclerites; tergite VII with about 12—22 hairs of up to 3.3—6.0 times as long as basal diameter of antennal segment III; tergite VIII with 8—12 hairs of up to 3.7—6.0 times that diameter. Siphuncular cones brown to dark brownish, with 25—38 hairs which partly are thinner and shorter than those on dorsum. Cauda brownish, with about 14 hairs that are much shorter than those on dorsum. Legs dark brownish, with numerous hairs, the longer ones on hind tibiae about 1.4—2.6 times diameter of hind tibiae at middle; first tarsal joints usually with 6 hairs but individual tarsi occasionally bear 5—8 hairs.

Measurements in mm.

No.	Length body	Ant.	Diam. siph.	Antennal segments			
				III	IV	V	VI
1.	2.62	1.15	0.08	0.38	0.21	0.19	(0.14 + 0.06)
2.	2.62	1.32	0.06	0.45	0.24	0.24	(0.17 + 0.05)
3.	2.65	1.18	0.06	0.41	0.21	0.19	(0.14 + 0.05)
4.	2.46	1.31	0.06	0.45	0.24	0.22	(0.16 + 0.06)
5.	2.69	1.29	0.06	0.43	0.22	0.21	(0.16 + 0.06)
6.	2.16	1.05	0.06	0.37	0.15	0.17	(0.14 + 0.05)
7.	2.38	1.16	0.06	0.40	0.19	0.20	(0.15 + 0.05)
8.	2.33	1.12	0.08	0.37	0.18	0.17	(0.16 + 0.05)

(1—5, Soreang, 29.V.1957; 6—7, Kalimpong, 19.IX.1965; 8, Takdah, 8.XII.1965; all from *Litsea polyantha*, leg. A. N. BASU).

Colour in life: Body dirty brownish, covered with waxy powder.

ALATE VIVIPAROUS FEMALE.

Morphological characters: Body about 2.09—2.53 mm long. Head and thorax dark brownish. Antennae brown to dark brown with the very bases of segments III, IV and V paler, about 0.46—0.49 of length of body; secondary rhinaria rather large and flat, more or less round; segment III with about 20—27 almost rimless rhinaria arranged irregularly along the entire length; segment IV with 7—14 rhinaria arranged irregularly along the entire length; segment V with 1—8 rhinaria restricted to basal $\frac{2}{3}$ of segment; hairs on segment III shorter than in apterae but yet 3—4 times basal diameter of the segment, this diameter being smaller. Abdominal tergum pale, with irregular, brownish, more or less transverse spinal sclerites on tergites I—VIII; marginal sclerites pale and poorly developed on tergites I and II, not evident on others. Dorsal hairs long; tergite VII with about 11—17, and tergite VIII with about 7—12 hairs. Siphuncular cones brown with the rim of the porus blackish. Cauda brown, semilunar, apparently with 10—14 hairs. Fore wings diffused brown, with the costal margin and the subcosta darker; media twice branched; subcosta with long and fine hairs, almost in a row; hind wings with two obliques. Legs dark, with long and fine hairs as in apterae; longest hairs on hind tibiae very nearly 3 times middle diameter of those tibiae; first tarsal joints with 5—9 hairs.

Measurements in mm and number of rhinaria.

No.	Length body	Ant.	Diam. siph.	Antennal segments				Rhin. on		
				III	IV	V	VI	III	IV	V
1.	2.48	1.20	0.08	0.42	0.22	0.21	(0.15 + 0.05)	25 & 21	14 & 9	5 & 7
2.	2.27	1.11	0.06	0.39	0.20	0.20	(0.14 + 0.05)	20 & 22	7 & 9	? & 4
3.	2.40	1.17	0.06	0.41	0.21	0.19	(0.14 + 0.05)	24 & 25	9 & 11	6 & 4
4.	2.45	1.21	0.06	0.43	0.21	0.22	(0.15 + 0.05)	27 & 23	9 & 10	6 & 5
5.	2.32	1.07	0.06	0.39	0.17	0.19	(0.14 + 0.04)	20 & 25	11 & 12	8 & 6
6.	2.53	1.20	0.08	0.45	0.27	0.14	(0.15 + 0.05)	24 & 24	12 & 12	1 & 4

(1—2, Soreang, 29.V.1957; 3—4, Kalimpong, 19.IX.1965; 5—6, Takdah, 8.XII.1965; all from *Litsea polyantha*, leg. A. N. BASU).

Colour in life: Head and thorax dark brown, abdomen dirty greyish covered with waxy dust.

DISTRIBUTION: The species is fairly common in the hills of the Darjeeling district.

BIOLOGY: The aphid infests the undersides of the leaves and the tender parts of the shoots of *Litsea polyantha* without appreciable injury to the host. Infestations are often quite heavy. The aphid is sluggish in habit and is not attended by ants. Field records indicate that the species reproduces viviparously throughout the year.

DISCUSSION: According to TAKAHASHI (1960), five species of the genus *Aiceona* have been described. *Aiceona litseae* spec. nov. differs from *A. actinodaphnis* Takahashi, the type-species, in having a shorter processus terminalis and many more hairs on abdominal tergites VII and VIII. It differs from *A. japonica* Takahashi by its longer and much more slender ultimate rostral segment with more hairs, and by fewer hairs on the first tarsal joints. It can be easily separated from *A. osugii* Takahashi, the apterae of the latter being yellowish green and the alatae having many more rhinaria on antennal segment III. From *A. siamensis* Takahashi the new species differs by a shorter processus terminalis, and by fewer rhinaria on antennal segments III and IV in alatae. *A. malayana* Takahashi has very much shorter antennal and dorsal abdominal hairs than *A. litseae* spec. nov.

TYPES. Holotype: Alate viviparous female (measurements no. 3), from *Litsea polyantha*, Kalimpong, 19.IX.1965, leg. A. N. BASU. Paratypes: Apterous and alate viviparous females with data as for holotype, and from Kalimpong, 30.VIII.1956; Soreang, 29.V.1957; Takdah, 8.XII.1965, all from *Litsea polyantha*, leg. A. N. BASU.

Nippolachnus bengalensis spec. nov.

APTEROUS VIVIPAROUS FEMALE.

Morphological characters: Body rather narrow, spindle-shaped, about 2.78—3.31 mm long. Tergum pale, membranous, with numerous hairs with finely drawn out apices; hairs up to about 3.5—5.3 times as long as basal diameter of antennal segment III. Head with the median suture complete, reaching the posterior margin of vertex. Antennae pale, with slightly dusky apices, about 0.27—0.34 times as long as body, smooth up to the base of segment VI; processus terminalis imbricated, about 0.25—0.33 times as long as base of segment VI, bearing a few terminal spines but no hairs; antennal hairs numerous, long, with finely drawn out apices, the longest on segment III about 4.5—6.0 times as long as basal diameter of the segment; secondary rhinaria usually absent, but in one specimen segment III with 2 and 2, IV with 3 and ?, and V with 2 and ? rather small, roundish, rhinaria. Eyes pale, without triommatidia. Ultimate rostral segment blunt, about 0.144—0.175 mm long, about 0.62—0.71 times 2nd joint of hind tarsi, with the about 9—14 long and fine hairs nearly as long as the 3 pre-apical pairs. Siphuncular cones pale, with numerous hairs. Cauda pale to very pale

brownish, with many hairs. Legs pale brown, densely covered with long and fine hairs; first tarsal joints with 7—9 hairs.

No.	Measurements in mm						
	Length body	Ant.	Diam. siph.	III	Antennal segments		
					IV	V	VI
1.	3.21	0.88	0.13	0.33	0.13	0.16	(0.11 + 0.03)
2.	2.83	0.97	0.11	0.38	0.14	0.16	(0.12 + 0.04)
3.	3.09	0.98	0.11	0.37	0.14	0.17	(0.12 + 0.03)
4.	2.78	0.92	0.11	0.33	0.13	0.17	(0.11 + 0.03)
5.	3.31	0.92	0.13	0.35	0.13	0.17	(0.11 + 0.03)
6.	2.96	0.96	0.11	0.37	0.14	0.17	(0.11 + 0.03)

(1—6, from *Eriobotrya dubia*, Darjeeling, 26.V.1958, leg. S. DAS).

Colour in life: Body light green.

ALATE VIVIPAROUS FEMALE.

Morphological characters: Body narrow, spindle-shaped, about 2.99—3.20 mm long. Head and thorax brownish; abdomen pale, with a small brownish central patch on tergites IV and V. Antennae pale brown, segment VI a little darker; segment III with 8—11 rhinaria along the entire length; IV with 3—5; V with 1—5; and also VI with 1 near base; rhinaria roundish to oval, rather small to fairly large. Eyes dark, without triommatidia. Ultimate rostral segment pale, thick and blunt, about 0.66 times as long as 2nd joint of hind tarsi. Siphuncular cones brownish. Cauda dusky brown. Legs brownish, with numerous long and fine hairs. Wings hyaline; fore wings with pterostigma dark brownish and the sector radii a little curved; media faint, simple or once branched, arising some distance away from the subcosta; hind wings with two obliques. Other characters as in apterae.

Measurements in mm and number of rhinaria.

No.	Length body	Ant.	Diam. siph.	Antennal segments				Rhin. on			
				III	IV	V	VI	III	IV	V	VI
1.	2.99	0.96	0.09	0.35	0.13	0.17	(0.12 + 0.03)	8 & 8	3 & ?	1 & ?	1 & ?
2.	3.20	0.91	0.11	0.35	0.13	0.17	(0.11 + 0.03)	10 & 11	4 & 5	5 & 1	1 & 1

(1—2, from *Eriobotrya dubia*, Darjeeling, 26.V.1958, leg. S. DAS).

Colour in life: Head and thorax greenish brown, abdomen pale green.

DISTRIBUTION: The species has so far been recorded only from Darjeeling at about 2,000 m. a.s.l.

BIOLOGY: Mild infestation by this aphid was noted on the undersurfaces of the leaves, without visible injury to the host. No attendant ant was noted. Field records indicate that the species reproduces viviparously even during the winter.

DISCUSSION: *Nippolachnus bengalensis* spec. nov. differs from *N. piri* Mats. and *N. eriobotryae* spec. nov. in many respects. The three species can be keyed as follows:

- 1 (2) Legs in apterae black or blackish. Alatae without dorsal sclerotic areas on abdomen, with twice furcated media in the fore wings, and with some 40—60 scattered rhinaria on antennal segment III. Colour in life brick red. *N. eriobotryae* spec. nov.
- 2 (1) Legs in apterae pale, at most with the apices of the tibiae brown. Alatae with a dorsal sclerotic patch on abdomen, with simple or once, abnormally twice, furcated media in the fore wings, and with about 5—12 rhinaria more or less in a row on antennal segment III. Colour in life green to yellowish green.
- 3 (4) On antennal segment VI the part basad the primary rhinarium twice or more times as long as the part distad that rhinarium; the latter part only with the terminal spines. Last rostral segment about 0.144—0.175 mm long, 0.62—0.71 of second joint of hind tarsi. *N. bengalensis* spec. nov.
- 4 (3) On antennal segment VI the part basad the primary rhinarium not much longer, sometimes even shorter than the part distad the primary rhinarium; the latter part with several hairs besides the 4—5 terminal spines. Last rostral segment about 0.17—0.22 mm long, 0.71—0.95 of second joint of hind tarsi. *N. piri* Matsumura.

TYPES. Holotype: Apterous viviparous female (measurements no. 1), from *Eriobotrya dubia*, Darjeeling, 26.V.1958, leg. S. DAS. Paratypes: Apterous and alate viviparous females with data as for holotype.

Nippolachnus eriobotryae spec. nov.

APTEROUS VIVIPAROUS FEMALE.

Morphological characters: Body oval to broadly oval, about 3.50—5.50 mm long. Head brownish sclerotic, with a distinct complete median suture reaching the posterior margin of vertex. Thorax laterally brownish sclerotic. Abdominal dorsum pale, smooth, membranous, but tergite VIII with a pale brown transverse band on each side of the mid-dorsal line. Dorsal hairs very numerous, long, with finely drawn out apices, the longer ones about 2.5—3.0 times as long as basal diameter of antennal segment III. Antennae about 0.33—0.50 of length of body, paler than the head, with numerous long and fine hairs; smooth to the processus terminalis; longest hairs on segment III about 2.6—3.2 times as long as basal diameter of segment; secondary rhinaria usually absent; in one specimen segment III with 1 and 1 rhinaria, segment IV with 4 and 4, and segment V with 4 and 5 rhinaria; all these rhinaria rather small, round, and near apex or on distal half of the segments. Eyes dark, without triommatidia. Rostrum when extended reaching past the 3rd pair of coxae; ultimate segment blunt, about 0.54—0.70 of 2nd joint of hind tarsi, with a large number of long and fine hairs in addition to the much shorter preapical ones. No mesosternal processi present. Siphuncular cones colourless to very pale brownish, with numerous hairs. Cauda pale brown, semilunar, with many long hairs. Legs long and stout, densely covered with long and fine hairs; femora paler at the very base, the remainder reddish brown to blackish brown; tibiae blackish brown to black; tarsi blackish brown; longest hairs

on hind tibiae about 1.7—2.7 times as long as basal diameter of antennal segment III, and about 0.58—0.75 of the width of hind tibiae in the middle; first tarsal joints with more than 20 hairs.

Measurements in mm.

No.	Length body	Ant.	Diam. siph.	Antennal segments			
				III	IV	V	VI
1.	4.30	1.71	0.09	0.67	0.25	0.29	(0.18 + 0.05)
2.	5.29	1.79	0.09	0.67	0.25	0.33	(0.17 + 0.08)
3.	5.50	1.82	0.06	0.67	0.27	0.33	(0.20 + 0.08)
4.	5.37	1.82	0.09	0.69	0.27	0.35	(0.19 + 0.08)
5.	4.69	1.79	0.09	0.72	0.24	0.30	(0.19 + 0.06)
6.	4.56	1.77	0.09	0.69	0.27	0.30	(0.18 + 0.07)

(1—6, from *Eriobotrya petiolata*, Darjeeling, 26.V.1958, leg. S. DAS; 2—5, from the same host and locality, 2.VI.1957, leg. A. N. BASU).

Colour in life: Body brick red, with very distinct segmentation, with whitish intersegmental lines. Legs blackish.

ALATE VIVIPAROUS FEMALE.

Morphological characters: Body about 3.95—4.01 mm long. Head and thorax brownish sclerotic. Abdomen pale membranous, with numerous hairs as in apterae. Antennae brown and hairy, the hairs slightly thicker and darker than in apterae; segment III with about 44—60 roundish to oval rhinaria and segment IV with 10—11 rhinaria arranged irregularly along their entire lengths; segment V with 4—5 rhinaria on basal half. Eyes dark, apparently without triommatidia. Ultimate rostral segment dark brown, thick and blunt, about 0.56—0.63 of 2nd joint of hind tarsi. Siphunculi and cauda quite pale brown. Legs dark brown, with numerous hairs. Wings hyaline; fore wings with pterostigma pale brownish; media faint, twice branched, arising some distance away from the subcosta; hind wings with two obliques.

Measurements in mm and number of rhinaria.

No.	Length body	Ant.	Diam. siph.	Antennal segments				Rhin. on		
				III	IV	V	VI	III	IV	V
1.	4.01	1.57	0.09	0.57	0.24	0.29	(0.17 + 0.07)	44 & ?	11 & ?	4 & ?
2.	3.95	1.57	0.09	0.61	0.24	0.26	(0.17 + 0.07)	55 & 60	11 & 10	5 & 5

(1—2, from *Eriobotrya petiolata*, Darjeeling, 26.V.1958, leg. S. DAS).

Colour in life: Head and thorax brownish. Abdomen brick red.

DISTRIBUTION: The species has so far been recorded only from Darjeeling at an altitude of nearly 2,100 metres.

BIOLOGY: The aphid forms large colonies on the undersides of the leaves and also on petioles of *Eriobotrya petiolata* without appreciable injury to the host. The species is quite sluggish and adheres to the leaves even when disturbed. On both

occasions *Nippolachnus eriobotryae* spec. nov. was found in association with *Tuberolachnus (Tuberolachniella) sclerata* Hille Ris Lambers & Basu, an aphid easily distinguishable from the former by its black colour.

DISCUSSION: There is no chance of this species being confused with other species of *Nippolachnus* Mats., and it can easily be distinguished even with the naked eye by its large size, brick red body, and blackish tibiae.

TYPES. Holotype: Apterous viviparous female (measurements no. 1), from *Eriobotrya petiolata*, Darjeeling, 2.VI.1957, leg. A. N. BASU. Paratypes: Apterae viviparae with data as for holotype, and apterous and alate viviparous females from *Eriobotrya petiolata*, Darjeeling, 26.V.1958, leg. S. DAS.

Pyrolachnus nov. gen.

TYPUS GENERIS: *Lachnus pyri* Buckton, 1899. Body clothed with numerous hairs which are considerably longer than basal diameter of antennal segment III. Abdominal dorsum pale with intersegmental sclerites or "Muskelpplatten", occasionally with a great many scleroites. Antennae hairy, 6-segmented. Eyes with distinct triommatidia. Rostrum with sub-divided, rather blunt last segment. Siphunculi pigmented cones. Wings not maculate; pterostigma much longer than its maximum width, not reaching the tip of the wing; sector radii nearly straight; media twice branched.

DISCUSSION: *Pyrolachnus* gen. nov. is erected here to accomodate the species described by BUCKTON as *Lachnus pyri* which could not be fitted in any of the known genera. The position of *Pyrolachnus* in Lachnini is indicated in the following key:

- 1 (2) Rostrum twice as long as body when extended. . . . *Stomaphis* Walker
- 2 (1) Rostrum shorter than body.
- 3 (10) Pterostigma elongate, many times as long as its maximum width, caudal side almost to the tip straight. Sector radii very little curved, or straight. Wings never maculate.
- 4 (5) Eyes in all adults without triommatidion. Media in alatae much paler and thinner than other veins in the fore wings, simple, once, or twice furcated *Nippolachnus* Matsumura
- 5 (4) Eyes with distinct triommatidia. Media twice furcated, paler than, or as dark as other veins in fore wings.
- 6 (7) Abdominal dorsum with a large central processus.
. *Tuberolachnus* Mordvilko
- 7 (6) Abdominal dorsum without central processus.
- 8 (9) Stigma of fore wings curved over the tip of the wing
. *Longistigma* Wilson
- 9 (8) Stigma of fore wing not reaching the tip of wing. *Pyrolachnus* gen. nov.
- 10 (3) Stigma of fore wings blunt, curved forwards distad of insertion of sector radii, the latter at least near base markedly curved. Wings often with a dark blotch or a dark pattern.

- 11 (12) Media in the immaculate fore wings once furcated. Antennae and legs in apterae pale, in alatae black or blackish. *Sinolachnus* Hille Ris Lambers
- 12 (11) Media in maculate fore wings twice furcated. Pigmentation in apterae and alatae very similar.
- 13 (14) Abdomen with double row of large spinal tubercles *Pterochloroides* Mordvilko
- 14 (13) Abdomen without dorsal tubercles.
- 15 (16) Fore wings with one blotch at base of media. Hind legs not elongated. Abdomen with a smaller or greater number of scleroites at the base of the hairs caudad the siphunculi. *Maculolachnus* Gaumont
- 16 (15) Fore wings strongly variegated. Hind legs much elongated. No scleroites. *Lachnus* Burmeister, inclusive *Schizodryobius* v. d. Goot

BÖRNER & HEINZE (1957) have made *Nippolachnus piri* Mats. a synonym of *Lachnus pyri* Buckt., from which one can conclude that they never examined these species.

Types

Holotypes and most paratypes of the new species are in the collection of the first author, other paratypes in the collection of the second author.

References

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Novák, V. J. A., *Insect Hormones*. I—XVII, 1—478 pagina's, 57 tekstfiguren, 9 platen. Methuen & Co Ltd., 11 New Fetter Lane, London EC 4, november 1966. Prijs 90 sh.

Het boek is een Engelse vertaling van de 3de druk, die in 1965 in Tsjecho-Slowakije verscheen. Het is een bewerking van de gezamenlijke literatuur over de hormonen der insecten voor zover die voor de oorspronkelijke auteur toegankelijk was. Uit de omvang ervan blijkt wel duidelijk de grote belangstelling van de onderzoekers voor het onderwerp.

Na een korte inleiding, waarin uiteengezet wordt, wat hormonen zijn en waarin een overzicht gegeven wordt welke in het insectelichaam aangetroffen worden, waar ze gevormd worden, welke werking ze uitoefenen en wie ze ontdekt heeft, volgt een bespreking van de methoden en technieken bij het onderzoek, waarna de verschillende soorten hormonen uitvoerig behandeld worden: die welke de gedaanteverwisseling regelen, het verband tussen hormonen en diapauze, de neurohormonen, de protohormonen (hormonen, die van bepaalde genen afhangen), de geslachtshormonen, de hormonen, die het ontstaan van de verschillende vormen bij de termieten en de Hymenoptera regelen, de invloed van insectehormonen op andere dieren en omgekeerd, de theoretische en praktische betekenis van insectehormonen en als laatste hoofdstuk de toevoegingen van de jaren 1963—1965.

Een literatuurlijst van 192 pagina's en een 38 bladzijden tellende index besluiten het voortreffelijk uitgevoerde boek. — LPK.