

# NEW ERIOPHYID SPECIES (ACARI: ERIOPHYOIDEA) FROM NORTH BENGAL, INDIA

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ACARI  
ERIOPHYIDAE  
NEW SPECIES  
INDIA

**SUMMARY:** Three new eriophyid mites, viz. *Cosella ventilogi* sp. nov. (Nothopodinae) infesting *Ventilogo denticulata* Willd. (Rhamnaceae), *Indosetacus cleistanthus* sp. nov. (Cecidophyinae) infesting *Cleistanthus* sp. (Euphorbiaceae) and *Diptilomiopus lagerstroemae* sp. nov. (Diptilomiopinae) infesting *Lagerstroemia thorelli* Gagnep. (Lythraceae) are described from North Bengal, India. The relationships of these new species with other known species are also discussed.

## INTRODUCTION

During surveys for eriophyid mites in North Bengal districts, three new species were collected and described here. All measurements of specimens are expressed in micrometer ( $\mu\text{m}$ ). In the description, each measurement is given for the holotype, followed by the corresponding ranges for the paratypes (between brackets). All slides bearing the type material are presently deposited in the collection of the Biosystematics Research Unit, Department of Zoology, University of Kalyani, Kalyani 741 235, India.

## DESCRIPTION

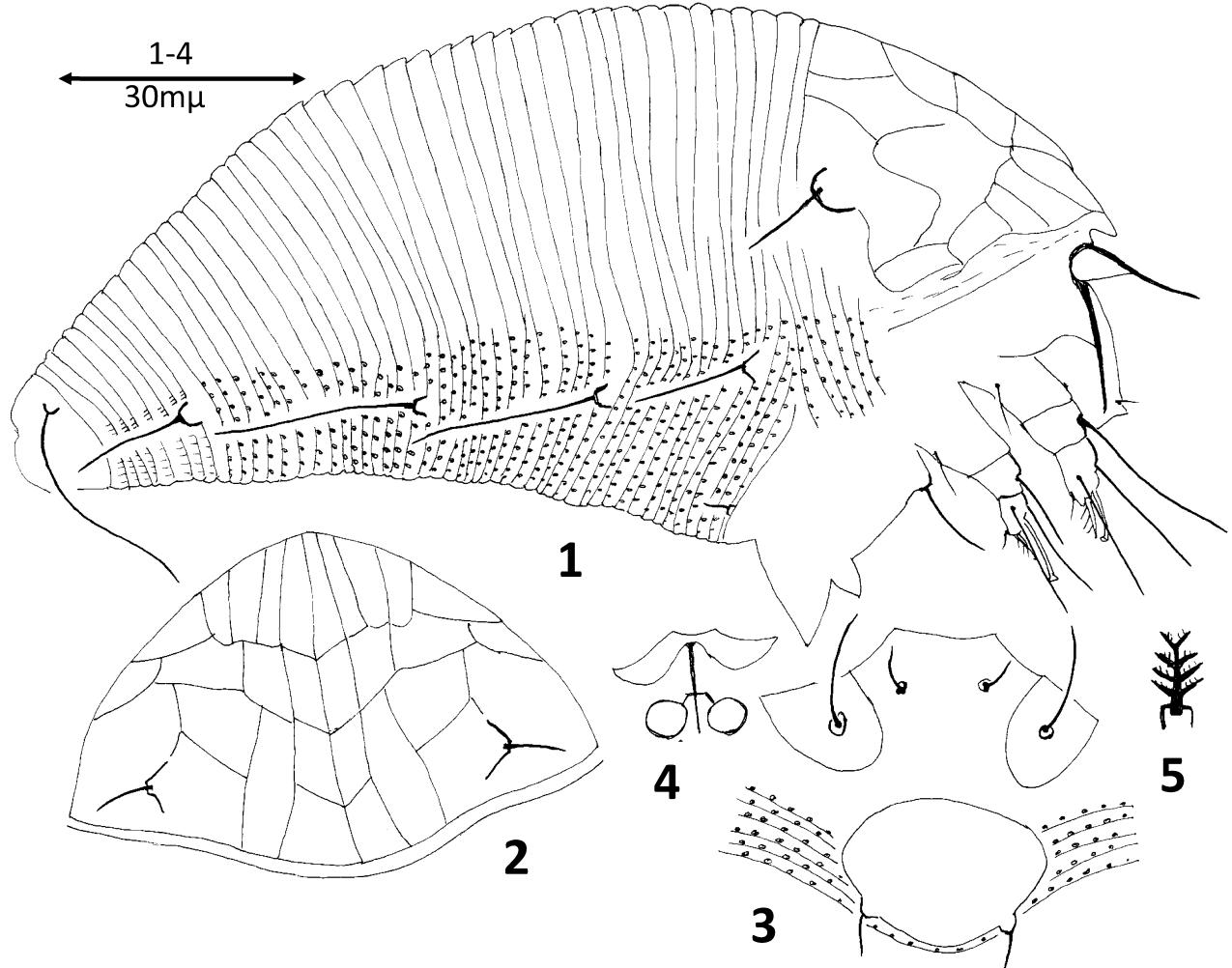
### *Cosella ventilogi* sp. nov. (FIGS. 1-5)

**FEMALE:** Body 145 (145-170) long, 78 (72-78) wide, fusiform elongate, reddish in colour. Gnathosoma 28 (23-28) long, projecting obliquely forward; antapical seta 3 (3-4) long. Prodorsal shield 42 (42-44) long, 72 (72-74) wide, subtriangular, distinct short anterior lobe, projecting over rostral base, prodorsal shield

design represents a network; median line complete, distinct, sinuate; admedian lines gently sinuate, arising from lateral margin of anterior lobe, then run backwards first divergently upto 0.33 part of anterior prodorsal shield, then become sub parallel on 0.42 part from anterior shield and then divergent on 0.25 part of posterior prodorsal shield, median line connected with the admedian lines on 0.45, 0.65, and 0.85 parts of shield by cross lines; submedian lines sinuate and complete, admedian and submedian lines interconnected with each other by oblique lines forming 11 unequal cells in between; prodorsal scapular tubercles placed ahead of rear prodorsal shield margin, 48 (48-50) apart, divergent, scapular setae 9 (9-11) long. Legs stunted by fusion of tibiae and tarsi; leg I 22 (22-23) long; femur 8 (8-9) long, basiventral femoral seta 11 (11-15) long; genu 4 (3-4) long, antaxial genual seta 28 (20-28) long; tibio-tarsus 10 (8-10) long, paraxial fastigial tarsal seta 20 (15-20) long and antaxial fastigial tarsal seta 18 (18-20) long, paraxial unguinal tarsal seta 2 (2-4) long; tarsal solenidion 6 (6-7) long, gently arched, knobbed; empodium simple, 4-rayed. Leg II 15 (15-18) long, femur 8

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Figs. 1-5. *Cosella ventilogi* sp. nov. 1. — Lateral view of body; 2. — Dorsal view of prodorsal shield; 3. — Ventral view of coxigenital region; 4. — Apodeme; 5. — Empodium.

(8-9) long, basiventral femoral seta 7 (7-9) long; genu (3-4) long, antaxial genual seta 10 (10-15) long, tibiotarsus 8 (8-9) long, paraxial and antaxial fastigial tarsal seta, each 18 (18-20) long, tarsal solenidion 10 (9-10) long; other characters as in leg I. Coxigenital area smooth, coxal plates I broadly contiguous and without prosternal apodeme line; *seta 1b* absent; *seta 1a* 7 (7-10) long, 20 (20-22) apart, tubercles with setae divergent, situated on middle of the coxae I, *seta 2a* 25 (25-27) long, 38 (38-40) apart.

Opisthosoma prominently arching downwards at the sides. Total dorsal annuli 45 (45-47), without microtubercles and total ventral annuli 57 (57-60), with microtubercles; microtubercles bead-like and set

on anterior margin of each ventral annuli. *Seta c2* 18 (18-21) long, on annulus 11 (11-12) behind rear prodorsal shield margin; *seta d* 33 (33-37) long, on annulus 23 (23-25) and 38 (36-40) apart; *seta e* 35 (30-35) long, on annulus 38 (38-40) and 25 (24-27) apart; *seta f* 18 (17-20) long, on annulus 8 (8-9) from caudal lobes and 22 (22-23) apart; *seta h2* 39 (39-45) long; *seta h1* absent. Genitalia 19 (19-21) long; 30 (30-35) wide; *seta 3a* 7 (7-8) long; epigynium smooth.

**MALE:** Unknown.

**MATERIAL STUDIED:** Holotype: Female (marked on slide (no. 1259/68/2004); INDIA: West Bengal: Malda, 04.vii.2004 from *Ventilogo denticulata* Willd.

(Rhamnaceae), coll. S. MONDAL. Paratypes: 7 females on slide bearing holotype and 31 females on 3 other slides (nos. 1260-1262/68/2004), collection data as in holotype.

**RELATION TO HOST:** Mites were found on the under surface of leaves causing curling of leaf margins.

**REMARKS:** So far, 15 species including 2 species from India under the genus *Cosella* are known. In having 4-rayed empodium, knobbed solenidion, prodorsal shield with parallel median and admedian lines, 3 transverse lines connecting median line with admedian lines, similar number of smooth dorsal annuli and microtuberculated ventral annuli, *Cosella ventilogi* sp. nov. comes close to *C. szygia* Huang (2001) and *C. zeylaniae* Huang (2001). However, *C. ventilogi* sp. nov. is distinct from the above two species in having smooth coxal plates and epigynum, presence of paraxial unguinal tarsal seta and without *seta h1*.

**ETYMOLOGY:** The name *ventilogi* is from the specific designation of the host plant *Ventilago denticulata*.

***Indosetacus| cleistanthusi* sp. nov. (FIGS. 6-10)**

**FEMALE:** Body 158 (140-163) long, 54 (51-56) wide, worm-like, flattened dorsoventrally and whitish in colour. Gnathosoma 18.6 (18.6-20.0) long; antapical seta 5 (4-5) long, prodorsal shield suboval in shape, 28 (26-30) long; 50 (46-50) wide, without anterior lobe; median line complete and sinuate; admedians complete, sinuate, meeting median by cross lines at 0.12 length of rear shield margin; submedians present on 0.55 part of anterior prodorsal shield; admedian and submedian lines interconnected with each other by oblique lines forming 9 unequal cells in between, lateral prodorsal shield with numerous short lines; prodorsal scapular tubercles ahead of rear prodorsal shield margin, 23 (23-25) apart; prodorsal scapular setae 20.5 (19.0-20.5) long, divergently to rear. Leg I from trochanter base 30 (30-32) long; femur 9.3 (8.0-9.3) long, basiventral femoral seta 9.3 (9.3-11.0) long; genu 3.9 (3.9-4.6) long, antaxial genual seta 25 (23-25) long; tibia 6.5 (5.8-6.5) long, paraxial tibial seta 6.5 (6.5-8.0) long; tarsus 6.5 (5.8-6.5) long, paraxial and antaxial fastigial tarsal setae, each 18.6 (16.0-18.6) long; tarsal solenidion 6.5 (6.5-7.0) long; empodium simple, 6-rayed. Leg II 26.1 (26.1-28.0) long;

femur 9.3 (8.0-9.3) long, basiventral femoral seta 8.4 (8.4-10.5) long; genu 3.7 (3.7-4.5) long, antaxial genual seta 9.3 (9.3-11.0) long; tibia 6.5 (5.0-6.5) long without seta; tarsus 7.4 (6.0-7.4) long, paraxial and antaxial fastigial tarsal setae, each 16.8 (15.0-16.8) long; tarsal solenidion 8.4 (7.0-8.4) long; other characters as in leg I. Coxigenital area with 3 (3-4) coxigenital annuli, microtuberculated; coxal plates I contiguous, prosternal apodeme line distinct; both coxal plates ornamented with irregular lines; *setae 1b* 8 (8-9) long, 5 (5-6) apart, located at the level of anterior coxal plates I approximation; *1a* tubercles ahead of the level of *2a* tubercles; *setae 1a* 18 (18-20) long, 8 (8-10) apart; *setae 2a* 35 (35-38) long, 20 (20-22) apart.

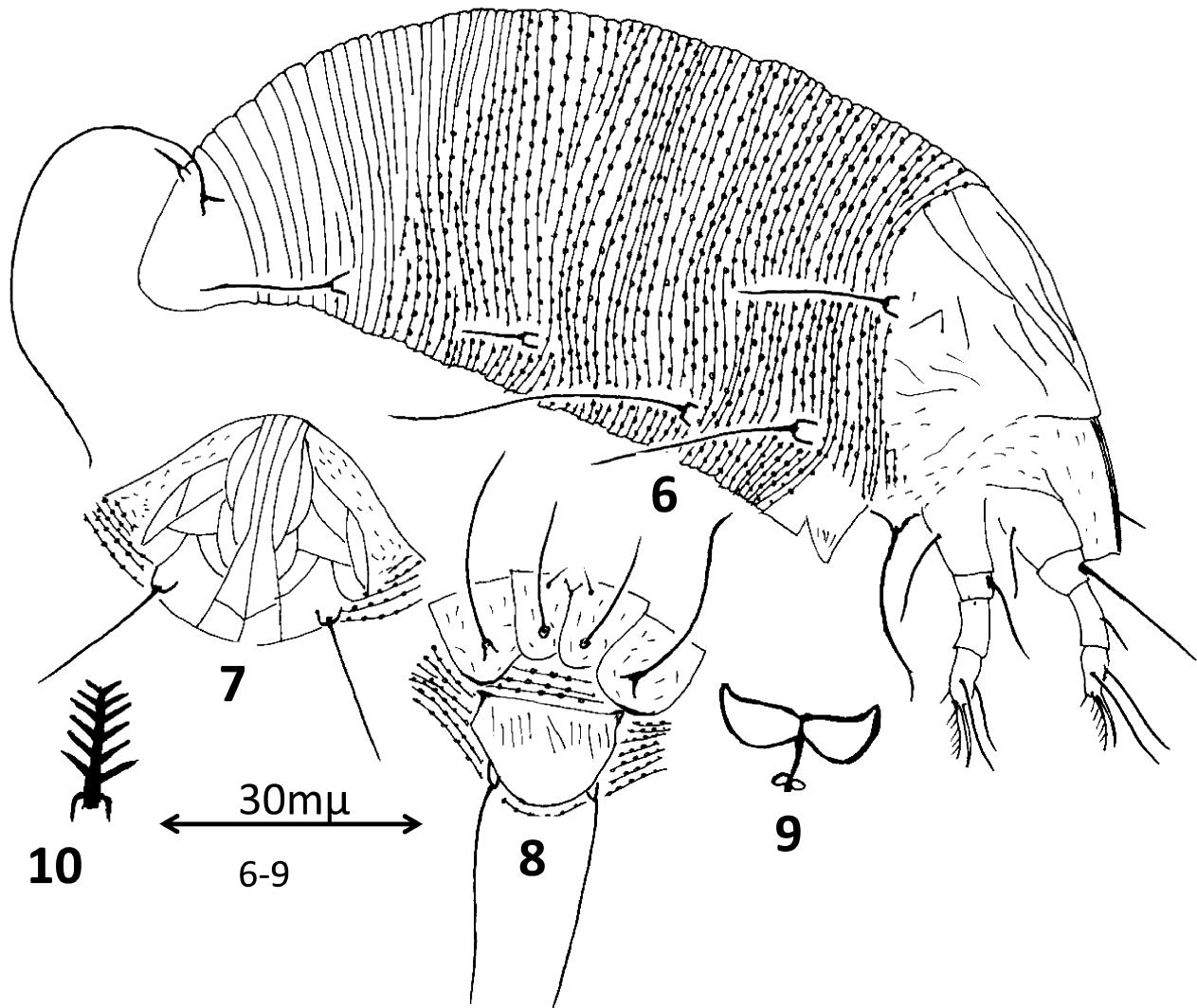
Opisthosoma evenly arched in cross section. Total dorsal annuli 62 (62-67); total ventral annuli 70 (68-73), with microtubercles; microtubercles round in shape; telosome with broad rings contrasting sharply with those of thanosome, smooth; *seta c2* 56 (50-57) long on ventral annulus 10 (10-12); *seta d* 42 (37-42) long, on annulus 22 (20-23) and 32 (30-33) apart; *seta e* 8.4 (8.4-10.0) long, on ventral annulus 41 (40-43) and 20 (18-20) apart; *seta f* 18.6 (16.0-18.6) long, on 7 (6-7) from caudal lobes and 25 (20-25) apart; *seta h2* 56 (53-56) long; *seta h1* short 5 (5-6) long. Genitalia 14.9 (13.0-14.9) long; 22.4 (21.0-23.5) wide; *seta 3a* 35 (33-36); epigynum with 14 (14-16) longitudinal furrows anteriorly; internal apodeme normal.

**MALE:** Unknown.

**MATERIAL STUDIED:** Holotype: Female (marked) on slide (no. 1269/42/2004); INDIA: West Bengal: Darjeeling, Tista Bazar, 11.x.2004 from *Cleisthanthus* sp. (Euphorbiaceae), coll. R. K. PANDIT. Paratypes: 6 females on slide bearing holotype and 28 females on 2 slides (nos. 1270-1271/42/2004), collection data as in holotype.

**RELATION TO HOST:** The species is found as simple leaf vagrant on ventral surface of leaves causing considerable crumpling and distortion of leaves.

**REMARKS:** Presence of short gnathosoma and oral stylets, without prodorsal shield lobe and without microtubercles on last 10-12 broad dorsal and ventral annuli bring this new species under the genus *Indosetacus* Ghosh and Chakrabarti (1987). This genus is so



Figs. 6-10. *Indosetacus cleistanthusi* sp. nov.; 6.—Lateral view of body; 7.—Dorsal view of prodorsal shield; 8.—Ventral view of coxigenital region; 9.—Apodeme; 10.—Empodium.

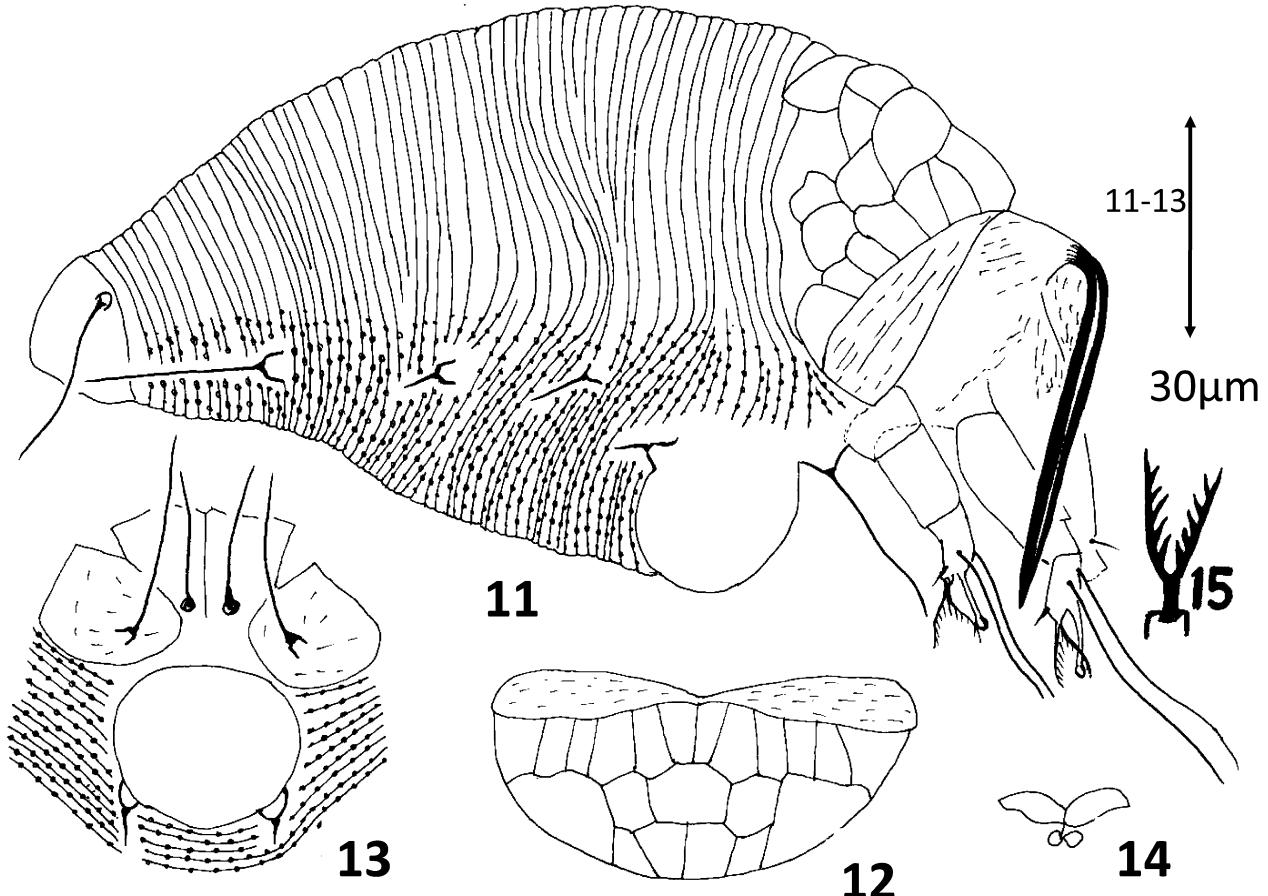
far monotypic with its type, *I. rhinacanthi* Ghosh & Chakrabarti (1987). *Indosetacus cleistanthusi* sp. nov. differs from the *I. rhinacanthi* by its 6-rayed tarsal empodium, entire shield structure, epigynum with longitudinal scoring and unusually long seta 3a.

ETYMOLOGY: The name *cleistanthusi* is from the specific designation of the host plant *Cleistanthus* sp.

**Diptilomiopus lagerstroemae** sp. nov. (Figs. 11-15)

FEMALE: Body 140 (140-155) long, 80 (80-85) wide; robust, fusiform, brownish in colour. Gnathosoma 55

(55-60) long, curved down just perpendicular to the body; dorsal pedipalp genual seta 6 (6-7) long. Prodorsal shield 30 (30-35) long, 70 (70-77) wide, more or less oval; shield design represents a clear network; median line present except central cell; admedian lines complete; anteriorly a rows of 12 cells and two anterolateral cells present; 9 cells including the central cell occur on the middle and rear shield; scapular tubercles and setae absent. Leg I 35 (35-38) long from base of trochanter; genu fused with femur, 12 (12-14) long, basiventral femoral seta absent; tibia 5 (5-6) long, paraxial tibial seta absent, tarsus 10 (10-12)



FIGS. 11-15. *Diptilomiopus lagerstroemae* sp. nov. 11. — Lateral view of body; 12. — Dorsal view of prodorsal shield; 13. — Ventral view of coxigenital region; 14. — Apodeme; 15. — Empodium.

long, paraxial and antaxial fastigial tarsal setae, each 32 (32-35) long and short antaxial unguinal tarsal seta 5 (5-6) long; tarsal solenidion 9 (9-10) long; knobbed; empodium divided and 6-rayed. Leg II 25 (25-29) long from trochanter base; femur 10 (10-12) long without seta; paraxial and antaxial fastigial tarsal setae, each 25 (25-27) long; tarsal solenidion 7 (7-9) long; other characters as in leg I. Coxigenital area smooth. Coxal plates I contiguous with distinct prosternal apodeme line; coxal surface smooth; *1b* tubercles and seta absent; *1a* tubercles much ahead of the level of *2a* tubercles; *seta 1a* 18 (17-21) long, 5 (5-7) apart; *seta 2a* 27 (26-30) long, 22 (20-24) apart.

Opisthosoma with lateral lobes. Total dorsal annuli 61 (61-69) and total ventral annuli 116 (116-120), dorsal annuli broader than ventral annuli;

microtubercles present on ventral annuli. Seta *c2* absent; seta *d* 10 (10-13) long on ventral annulus 35 (35-37) and 40 (40-42) apart; seta *e* 8 (8-10) long on ventral annulus 50 (50-56) and 22 (20-24) apart; *seta f* 25 (25-30) long on ventral annulus 11 (10-12) from rear and 25 (25-28) apart; *seta h2* 20 (20-25) long; *seta h1* absent. Genitalia 23 (23-25) long and 25 (25-30) wide; *seta 3a* 5 (5-7) long; epigynum smooth.

MALE: Unknown.

MATERIAL STUDIED: Holotype: Female (marked) on slide (no. 1263/69/2004); INDIA: West Bengal: Adina, Malda, 07.v.2004 from *Lagerstroemia thorelli* (Lthraceae); coll. S. MONDAL. Paratypes: 8 females on slide bearing holotype and 28 females on 5 slides (nos. 1264-1268/69/2004), collection data as in holotype.

REMARKS: So far, 33 species including 15 species from India under the genus *Diptilomiopus* Nalepa (1916) are known. Among these species *D. lagerstroemae* sp. nov. in having 6-rayed tarsal empodium, knobbed tarsal solenidion and median line absent in central cell on prodorsal shield comes close to *D. holmesi* (Keifer, 1962) and *D. cuminis* Chakrabarti, Ghosh & Das (1992). However, the present new species can be distinguished from the above two species in having smooth coxal plates I, prodorsal shield structure except central cell, shape of epigynum and opisthosoma with 116 ventral annuli (69 ventral annuli in *holmesi* and 70 ventral annuli in *cuminis*). In addition; epigynum of this new species is smooth while that of *holmesi* having fine granules in radial lines on upper basal 0.3 part.

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