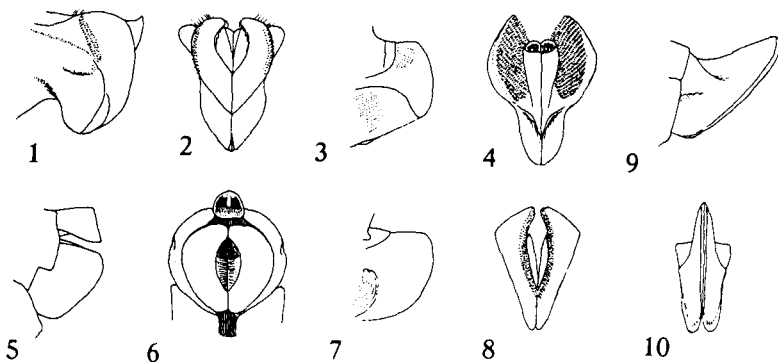


THE HIGHER CLASSIFICATION OF THE NOGODINIDAE
(HOMOPTERA, FULGOROIDEA) WITH THE DESCRIPTION OF A
NEW GENUS AND SPECIES

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No classification of the family Nogodinidae has so far been published. Kirkaldy (1907: 9, 93) proposed the group name Bladinini to replace the name Nogodini for a section of the Ricaniidae, and Melichar (1915: 379) proposed the name Elicaini for what he regarded as a tribe of Lophopidae. *Elica*, however, is a genus of Nogodinidae.

In a study of a comprehensive range of characters exhibited by the head, pronotum, mesonotum, legs, tegmina, wings, abdomen and genitalia in species of different Nogodinid genera, the writer found an appreciable number that indicated affinity at generic level, but extremely few did that did so at higher levels. The female genitalia were found to be of five different patterns, and the differences between them are most clearly evident in the conformation of the third valvulae of the ovipositor. It is considered that the family is best regarded as comprising five tribes and seven subtribes, named and defined below.



Figs. 1-10. — Types of ovipositor. 1, 2, *Mindura* (Varciini): 1, left third valvula, lateral view; 2, ovipositor, posterior view. 3, 4, *Pisacha* (Pisachini): 3, left third valvula, lateral view; 4, ovipositor, posterior view. 5, 6, *Gaetulia* (Bladinini): 5, anal segment and ovipositor, left side; 6, the same, posterior view. 7, 8, *Nogodina* (Nogodinini): 7, left third valvula, lateral view; 8, ovipositor, posterior view. 9, 10, *Philbyella* (Epacriini): 9, left third valvula, lateral view; 10, ovipositor, posterior view.

The genera *Semestra* Jacobi (1916: 309) and *Osaka* Distant (1909: 43), which were placed in the group later recognised as the family Nogodinidae, are, in fact, both members of the Ricaniidae. Moreover, the aberrant genus *Lasonia* Melichar (1903: 87), which its author assigned to the Nogodinidae, should be referred to the Issidae, where it would take its place near *Tubilustrium*.

KEY TO TRIBES OF NOGODINIDAE

1. Basal metatarsal segment without a setose eminence distad of apical row of teeth . . . 2
- Basal metatarsal segment with a setose eminence distad of apical row of teeth, or inside the curve in which they are arranged 4
2. Wings with a subapical line of transverse veinlets distad of R-M and M-Cu cross-veins. Third valvulae of ovipositor with apical margin long, minutely denticulate along its posterior surface Nogodinini
- Wings with no transverse veinlets distad of R-M and M-Cu cross-veins. Third valvulae of ovipositor not minutely denticulate along posterior margin 3
3. Third valvulae of ovipositor triangular, parallel with axis of body; apical margin long, thin, smooth throughout its length Epacriini
- Third valvulae of ovipositor broadly rounded, carried very obliquely to axis of body, and in posterior view jointly circular or pentagonal in outline Bladinini
4. Basal metatarsal segment with apical row of teeth arranged in a deep curve, partly enclosing an elongated setose eminence. Third valvulae of ovipositor thick, flattened posteriorly, and with a broad tract of minute denticles Pisachini
- Basal metatarsal segment with apical teeth arranged in a shallow curve, setose eminence small. Third valvulae smooth and tumid in dorsal half, with a narrow band of denticles laterally, apical margin slightly produced at middle Varciini

Tribe Nogodinini Schmidt

Schmidt, 1912: 83

Wings with a line of transverse veinlets distad of R-M and M-Cu cross-veins. Third valvulae of ovipositor with apical margin long, not very thin, minutely denticulate on posterior and posteromesal surfaces.

KEY TO SUBTRIBES OF NOGODININI

1. Vein M in tegmen with a long basal stalk. Distal margin of third valvulae of ovipositor not tumid dorsally, minutely denticulate almost throughout its length . . . Nogodinina
- Vein M in tegmen with an extremely short basal stalk, or arising from basal cell as two branches. Distal margin of third valvulae of ovipositor tumid dorsally; mesal surface of tumid portion minutely denticulate, remainder of margin devoid of teeth Vutinina

Subtribe Nogodinina subtrib. n.

Vein M in tegmen with a long basal stalk. Third valvulae of ovipositor with distal margin of equal thickness throughout and minutely denticulate (figs. 7, 8).

This subtribe includes *Nogodina*, *Varciopsis*, *Biolleyana*, *Orthothyreus* and *Neovarcia*.

Subtribe Vutinina subtrib. n.

Vein M in tegmen with a short basal stalk or arising from basal cell as two branches. Third valvulae of ovipositor with distal margin inflated in its dorsal half but not flattened transversely, with inner surface of tumid area densely and extensively denticulate.

This subtribe includes only *Vutina*.

Tribe Epacriini trib. n.

Lateral carinae of mesonotum terminating anteriorly against an arcuate transverse

carina. Wings with no transverse veins distad of R-M and M-Cu. Third valvulae of ovipositor with apical margin long, thin and often transparent, smooth, and sometimes polished (figs. 9, 10).

Most members of this tribe are of a general dull brown colour. In a few (*Philbyella*, *Morsina*) the cells of the corium of the tegmina are pallid ochraceous or translucent, and most of them have a small fuscous spot in the middle.

The tribe includes *Philbyella*, *Privesomorphus*, *Epacria*, *Colpocara*, *Criopaca*, *Diazinus*, *Morsina* and an aberrant new genus described below.

Genus *Psiadiicola* gen. n.

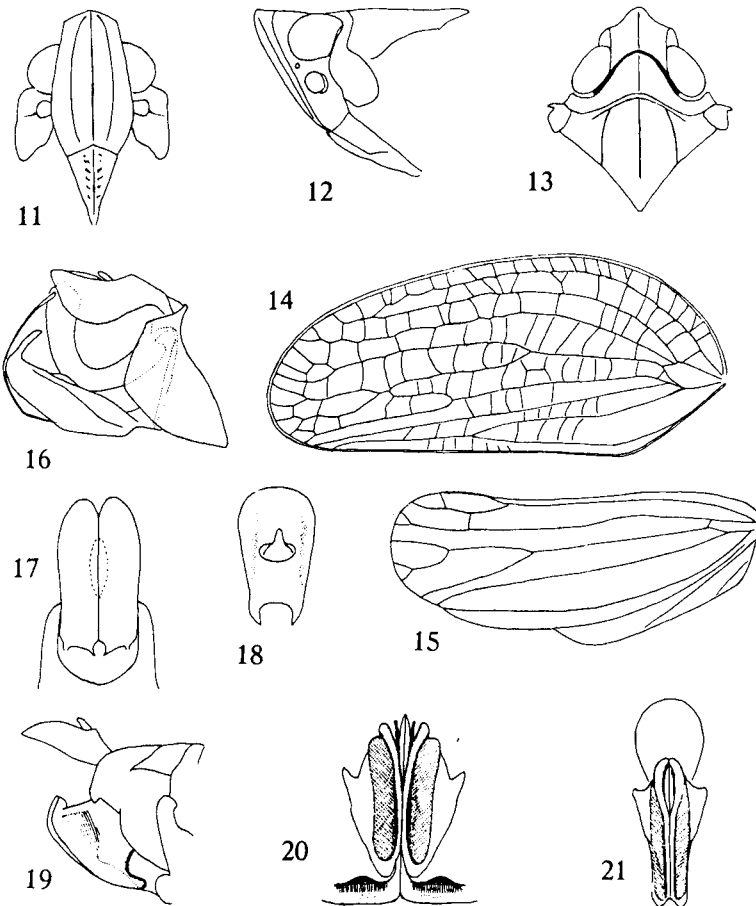
Vertex broader than long in middle line, lateral margins parallel, anterior margin convex, posterior margin excavate, disc flat, slightly depressed. Frons longer in middle line than broad, lateral margins gradually diverging to below level on antennae then gradually incurved to frontoclypeal suture, apical margin as broad as basal margin, disc transversely convex, tricarinate, carinae not attaining frontoclypeal suture. Frontoclypeal suture angulate. Postclypeus tricarinate, longer than broad at base, transversely convex. Rostrum attaining post-trochanters, subapical segment a little longer than apical. Antennae with second segment subglobose, slightly longer than broad. Eyes slightly longer than broad (1.2:1), only slightly excavate below. Ocelli present. Pronotum slightly wider than head including eyes, longer than vertex in middle line; anterior margin deeply convex, carinate as far as tegulae, posterior margin shallowly concave, disc medially carinate, lateral lobes subrectangulately rounding. Mesonotum tricarinate, with lateral carinae converging cephalad and abruptly meeting a fine transverse arcuate carina anteriorly. Mesocoxae with posterior margin at base produced in a shallowly convex or subangulate lobe. Legs relatively short, post-tibiae widening to apex, with four spines laterally, apically with about 10 teeth, basal metatarsal segment with about nine teeth arranged in a deeply curving row, with no definite setose pad developed beyond this row. Tegmina with costal area narrower than costal cell, Sc and R arising separately from basal cell, the former simple to apex, the latter simple or forked near apex, M forking near middle of tegmen, Cu₁ simple or forked at about two-thirds from base. Transverse veinlets present in all cells of corium and clavus, and forming a very irregular line near apical margin; common claval vein entering margin at apex. Wings with Sc simple, R two-branched, M two-branched and Cu₁ three-branched. Abdomen broad, dorsal surface transversely convex. Genital styles in side view longer than broad (about 3:1), with a spatuliform process dorsally at apex, directed dorso-cephalad. Posterior margin of pregenital sternite of female feebly convex. Third valvulae subtriangular, flattened, apical margin straight for three-quarters of its length, polished, slightly curved and a little tumid in dorsal third. Anal segment of female longer than broad, broadly ovate, lateral and apical margins shallowly deflexed, anal foramen at middle.

Type species, *Psiadiicola brevipennis* sp. n.

The strongly tricarinate frons, with arcuate lateral carinae, separates *Psiadiicola* from all other genera of the tribe except *Epacria*. If the short-winged condition in *Psiadiicola* is ignored as being merely a local adaptation, the main difference between the two genera lies in the structure of the ovipositor. In *Epacria*, the third valvulae are relatively longer and more acute apically. The apposed apical margins of the valvulae part very slightly for a short distance at the apex, whereas in *Psiadiicola* they part very appreciably, beginning to do so at some distance before the apex. In *Epacria*, the upper margin of the eyes is a short distance below the upper margin of the head and the anterior margin of the pronotum, whereas it is virtually at the same level

in *Psiadiicola*. In *Epacria*, the frontoclypeal suture is transverse and impressed; the longest side of the eye is the posteroventral margin; the frons recurves to the apical margin of the vertex; the rostrum attains the distal margin of the fourth (second visible) abdominal segment; and the bases of the first valvulae of the ovipositor are not developed as horizontal lobes. All these features contrast with the corresponding condition in *Psiadiicola*.

The generic name is of masculine gender, and is formed from the generic name of the host plant (*Psiadia*) and the suffix *cola*.



Figs. 11-21. — *Psiadiicola brevipennis* sp. n.: 11, head and pronotum, facial view; 12, head, pronotum and mesonotum, left side; 13, head and thorax, dorsal view; 14, tegmen; 15, wing; 16, male genitalia, right side, with lateral process of aedeagus shown displaced; 17, pygofer and genital styles, ventral view; 18, anal segment of male, dorsal view; 19, anal segment of female and ovipositor, right side; 20, ovipositor, ventral view, showing lobes developed laterally at base of first valvulae; 21, anal segment of female (upraised) and ovipositor, posterior view.

Psiadiicola brevipennis sp. n. (figs. 11-21)

Vertex broader than long in middle line (1:0.65), medially carinate. Frons longer in middle line than broad (nearly 1.6:1), basal margin convex. Post-coxal process short, stout, acuminate. Tegmina longer than broad (nearly 2.2:1), widest at about one-third from base, anterior margin convex, very slightly excavate near node, apical margin rounded, with anal angle more strongly so than apical angle.

Anal segment of male about twice as long as broad, lateral margins in side view rather deep, convex, apical margin short, a small vertical convex lobe medially near base on ventral surface. Pygofer with dorso-lateral angles not produced, lateral margins obtusely subangulate, ventral margin shallowly concave. Aedeagus relatively long, tubular, U-shaped, a pair of slender spinose processes arising laterally at apex, lying closely against sides of aedeagus almost to its base. Process of basal plate rather long, straight and of subequal width throughout. Genital styles in side view each of subequal width throughout, and with dorsal margin produced mesad near middle in a shallowly convex lobe, ventral surface of apposed styles shallowly depressed in distal half.

Female with first valvifers of ovipositor each forming a broadly rounded lobe, thickened along its distal margin, at base. First valvulae long, slender, with a few coarse teeth apically.

Greenish-ochraceous; body, except genitalia, heavily sprinkled or striped with fuscous; lateral margins of seventh and eighth sternites of female, black. Tegmina translucent, not glass-clear, veins ochraceous, speckled with red and sparsely with dark fuscous. Wings hyaline, dilute fuscous in posterior half, veins in anterior half ochraceous, sparsely speckled with red, in posterior half, fuscous. Male: length, 4.6 mm; tegmen, 4.7 mm. Female: length, 5.5 mm; tegmen, 5.3 mm.

Holotype male, Mauritius: Trois Mamelles, 15.iv.72 (J.R. Williams), in British Museum (Nat. Hist.).

Other material: 29 males, 13 females and 1 nymph, 15, 19.vi.72, 22.ix.72; 3, 10.ii.73, 5.v.74 and 10.x.76, from same locality as type, collected on *Psiadia trinervia* Willd. (Compositae) growing on upper precipitous slopes of Trois Mamelles mountain at about 370 m under an annual rainfall of 101-152 mm (J.R. Williams).

Tribe Bladinini Kirkaldy stat. n.

Kirkaldy, 1907: 9, 93

Third valvulae of ovipositor broadly rounded, more or less tumid, in posterior view almost circular or pentagonal in outline, with a short, darker, minutely rugose or denticulate tract at middle of apical margin (figs. 5, 6), or with entire apical margin membranous, papery.

KEY TO SUBTRIBES OF BLADININI

1. Claval veins uniting basad of middle of clavus Gaetuliina
- Claval veins uniting at or distad of middle of clavus 2
2. Lateral carinae of mesonotum curving mesad anteriorly to meet in middle line; common claval vein entering apex of clavus Elicina
- Lateral carinae of mesonotum anteriorly terminating abruptly against an arcuate transverse carina; common claval vein normally entering commissural margin before apex Bladinina

Subtribe Gaetuliina subtrib. n.

Claval veins uniting basad of middle of clavus. Tegmina hyaline, veins usually dark fuscous, rarely green.

This subtribe includes *Gaetulia*, *Nurunderia*, *Indogaetulia*, *Salona*, *Pucina*, *Laberia*, *Paralasonia* and provisionally *Riancia*, *Exphora* and *Siopaphora*.

Subtribe Elicina Melichar stat. n.

Melichar, 1915: 379

Lateral carinae of mesonotum curving to meet anteriorly. Common claval vein entering apex of clavus; anterior claval vein bent at its middle and almost parallel to posterior vein in its distal half. Basal metatarsal segment with six teeth or less. Tegmina hyaline, with veins light yellowish brown.

This subtribe includes *Elica* and *Conna*.

Subtribe Bladinina subtrib. n.

Lateral carinae of mesonotum anteriorly terminating against an arcuate or obtusely angulate transverse carina. Wing-tucking lobe (on basal cell of tegmen) highest at its middle. Common claval vein normally entering commissural margin of clavus. Tegmina rarely hyaline, usually reddish-brown or fuscous, occasionally greenish, venation fuscous, reddish-brown or green. Sole of metatarsus with a dense pad of fine setae.

This subtribe includes only *Bladina*, which is widespread in the Neotropical Region. The broadly rounded third valvulae are membranous on their posterior margin, and the first valvulae are exposed for most of their length.

Tribe Pisachini trib. n.

Teeth on basal metatarsal segment arranged in a deep curve, partly enclosing a long setiferous eminence. Third valvulae of ovipositor dilated and thickened in dorsal half, with posterior surface flattened and bearing a broad even tract of minute denticles (figs. 3, 4).

This tribe includes *Pisacha*, *Soaemis* and *Goneopsara*, and the distribution of its members extends across south-east Asia from Assam to Formosa.

Tribe Varciini trib. n.

Teeth on basal metatarsal segment arranged in a shallow curve, setose eminence in the hollow of the curve small. Third valvulae of ovipositor tumid dorsoapically, with fine setae and usually a narrow band of denticles laterally; mesal margin slightly produced caudad at level of apex of first valvulae (figs. 1, 2).

KEY TO SUBTRIBES OF VARCIINI

1. Tegmina with Cu_1 lying closely alongside Cu_2 Varciina
 - Tegmina with Cu_1 distinctly separated from Cu_2 by cell Cu_1 Sassulina

Subtribe Varciina subtrib. n.

Tegmina with Cu_1 closely adjacent to Cu_2 throughout its length.

This subtribe includes *Varcia*, *Varciella*, *Convarcia*, *Paravarcia*, *Probletomus*, *Detya* and *Miriza*.

Subtribe Sassulina subtrib. n.

Tegmina with Cu_1 distinctly separated from Cu_2 throughout its length.

This subtribe includes *Sassula*, *Aphanophrys*, *Mindura*, *Paradetya* and *Decoomana*.

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SUMMARY

The family Nogodinidae is divided into 5 tribes and 7 subtribes (Nogodinini: Nogodinina, Vutinina; Epacriini: Bladinini: Bladinina, Gaetuliina; Elicina; Pisachini; Varciini: Varciina, Sassulina) and a new genus and species, *Psiadiicola brevipennis* is described to accommodate epacriine material from Mauritius.

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