REICHENBACHIA

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On Some North Indian Typhlocybinae

(Homoptera, Auchenorrhyncha, Cicadellidae)

With 244 figures

IRENA DWORAKOWSKA

Warszawa

This paper is based chiefly on the material collected by me in 1976 at Dehra Dun and its neighbourhoods. Plant species were determined by Mr. R. M. MISRA except Milletia auriculata BAKER recognized by Mr. R. C. GAUR.

The holotypes and parts of paratypes are kept at the Institute of Systematic and Experimental Zoology in Kraków (ISEZ), Poland. The other paratypes are preserved in the following collections

FRI – Forest Research Institute in Dehra Dun (U. P.), India
D – Staatliches Museum für Tierkunde in Dresden
BM – British Museum (Nat. Hist.) in London
MM – Moravian Museum in Brno, Czechoslovakia, and
USNM – United States National Museum in Washington.

The new generic names *Kamaza* and *Watara* are to be treated as arbitrary combinations of letters. In all cases: Gender – Feminine.

Empoascini

Empoasca WALSH, 1862

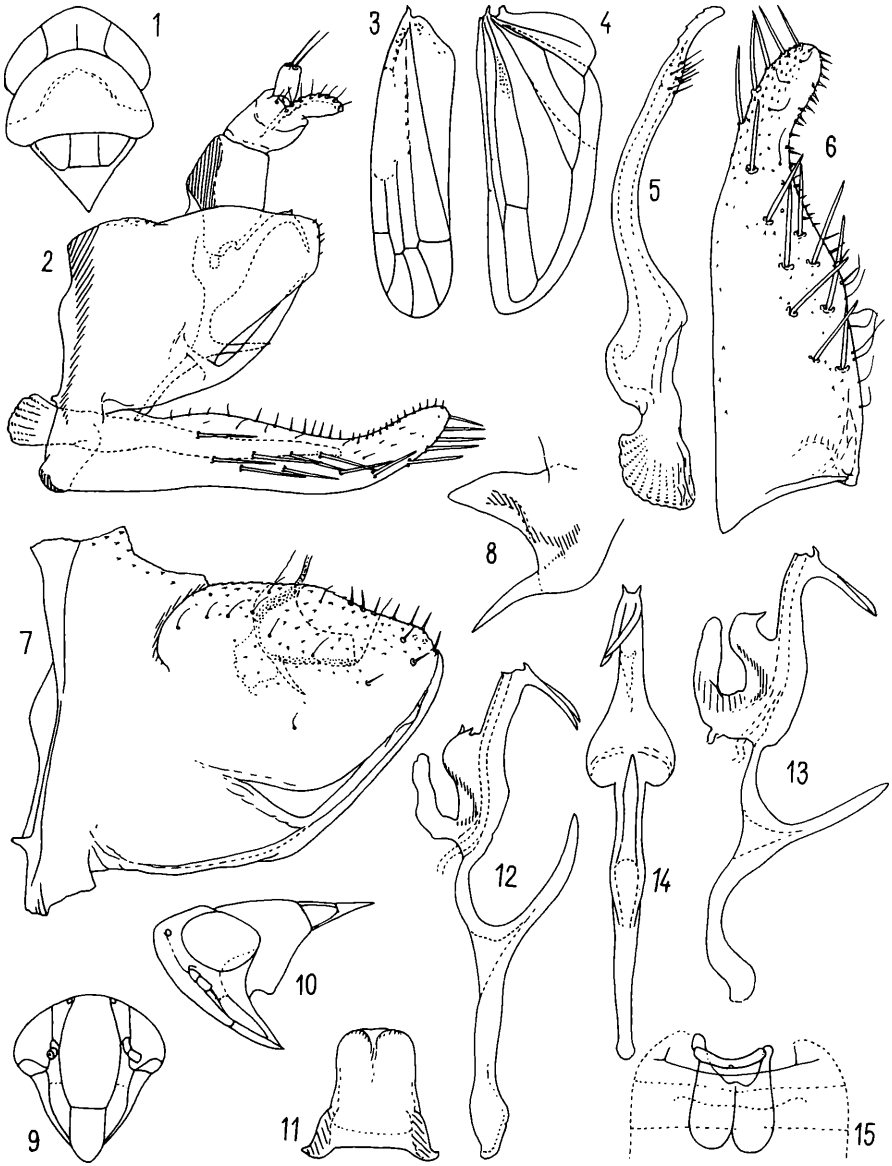
Sabourasca RAMAKRISHNAN et MENON, 1972 **syn. n.**

While to compare the features of taxonomic importance of *Sabourasca peculiaris* RAM. et MENON with these of the type-species of the genus *Empoasca* WALSH (DWORAKOWSKA 1976) it becomes clear that the former species represents only a small branch inside the genus in a range of a group of species only

Empoasca peculiaris (RAMAKRISHNAN et MENON, 1972) **comb. n.** (Figs. 1–15)

Sabourasca peculiaris RAMAKRISHNAN et MENON, 1972

4 ♀♀, Dehra Dun, FRI campus, Cassia sp., 25 Dec.; 3 ♂♂, 4 ♀♀, same locality, 26 Dec. This species is the closest related to *E. albizziae* AHMED, MAHMOOD et ASLAM.



Figs. 1–15. *Empoasca peculiaris* (RAM. et MENON)

1 head and thorax from above – 2 anal block of male – 3 fore wing – 4: hind wing – 5: paramere – 6 subgenital plate – 7 pygophore side and anal tube appendage – 8: anal tube appendage (slightly deformed in slide) – 9: face – 10: head and thorax from side – 11 connective – 12 and 13 penis from side – 14 penis from behind – 15 abdominal apodemes.

Empoasca affinis NAST, 1937 (Figs. 16–18)

1 ♂, Dehra Dun, FRI campus, Cassia sp., 25 Dec.

This species belongs to steppose group of *E. decipiens* PAOLI (DWORAKOWSKA 1976).

Empoasca motti SINGH-PRUTHI, 1940 (Figs. 19–24)

Vertex slightly produced in the middle. Ground colour light olivaceous-green, whitish hypodermal pattern poorely expressed. Eyes brown.

Male genital apparatus quite variable. In a normal specimen terminal part of pygophore appendage (Figs. 20, 21) quite broad and distinctly serrated.

Length: ♂ 2.7 mm.

1 ♂, Asarori Range, sal forest nr. Dehra Dun, Millctia auriculata BAKER, 26 Dec.; 1 ♂, Birma, Rangoon, 4 Apr., 1972, coll. J. DOSTÁL.

This species belongs to the group of *E. signata* HPT. well represented in Oriental and Ethiopian Regions. *E. motti* SINGH-PRUTHI is quite similar to *E. kerri* SINGH-PRUTHI (PRUTHI 1940) but data at the original description are not sufficient for identification and the type-series kept at National Pusa Collection at IARI in New Delhi has not been studied yet.

Usharia DWORAKOWSKA, 1977

Usharia hyzha sp. n. (Figs. 25–30)

Face and upper side of body yellow, brighter on pronotum and fore wing. Centre of scutum and a patch at anterior margin of scutellum whitish. Eyes blackish.

Differing from *Usharia mata* DWOR. by absence of sclerotized processes at pygophore side (Fig. 27) and ventral appendage at penis, penis stem provided with paired apical processes (Figs. 26, 28) and „upper connective" without hair-like ornamentation (Fig. 27).

Length ♂ 2.4 mm, ♀ 2.5 mm.

Holotype, male, and paratype, ♀ Asarori Range, sal forest between Dehra Dun and Mohand, Mallotus philippiensis MUELL., 26 Dec. (ISEZ)

Amrasca GHAURI, 1967

Amrasca biguttula biguttula (ISHIDA, 1913) (Fig. 31)

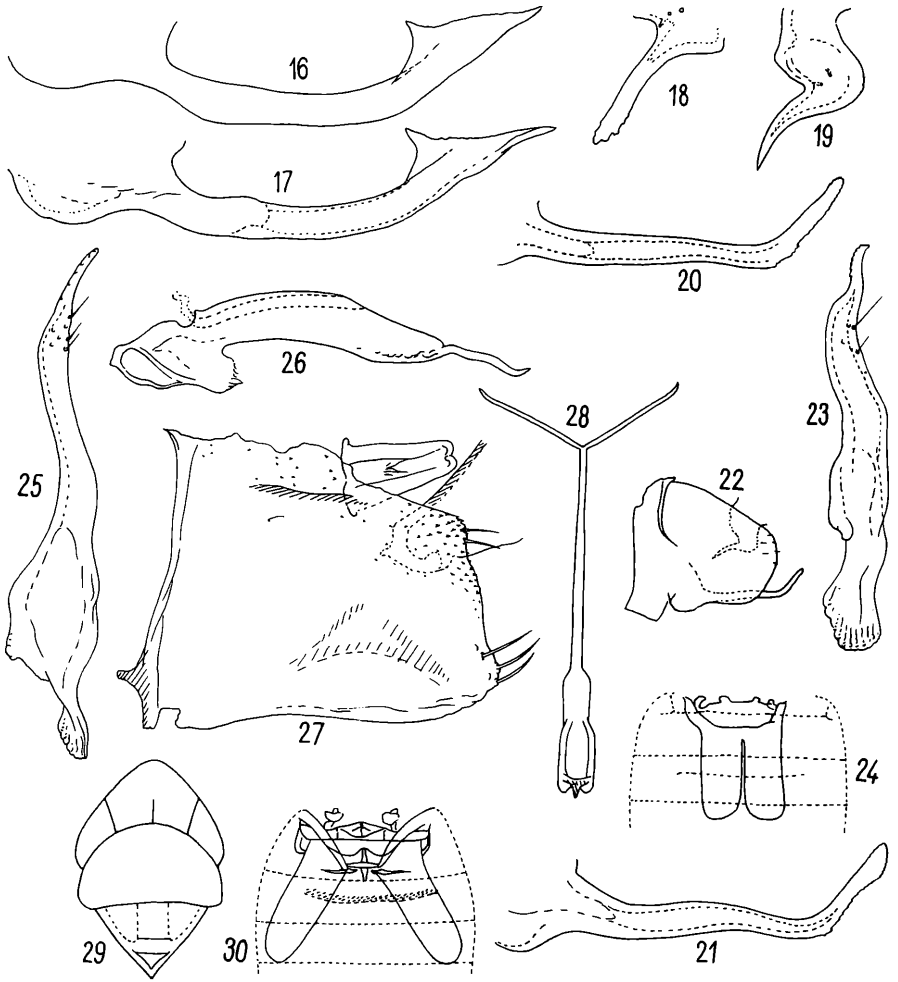
4 ♀♀, Dehra Dun, FRI campus, Cassia sp., 25 Dec.

Amrasca ? bombaxia GHAURI, 1964

1 ♀, Dehra Dun, FRI campus, Cassia sp., 25 Dec.

Chlorita (Eremochlorita ZACHVATKIN, 1946b)

Viridasca RAMAKRISHNAN et MENON, 1972 **syn. n.**

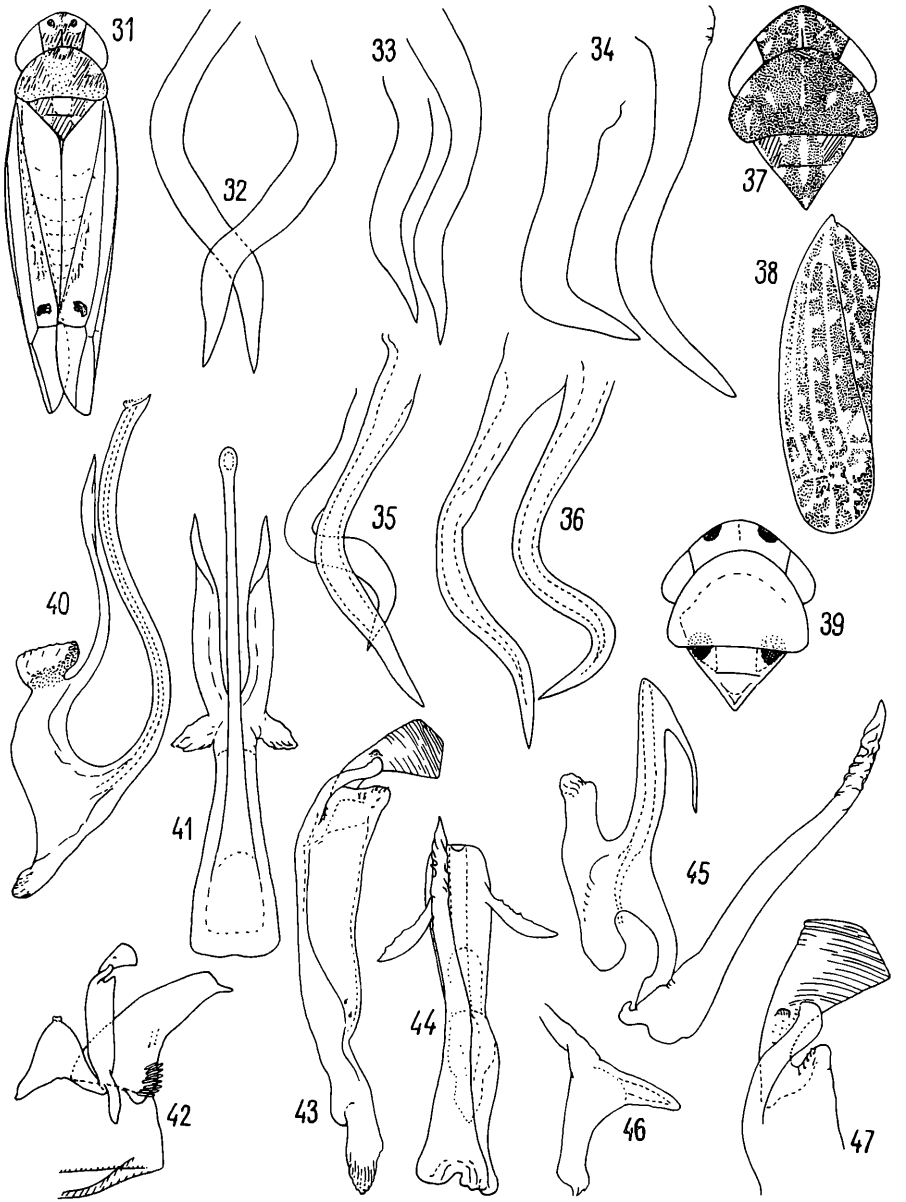


Figs. 16–30.
Empoasca affinis NAST 16 pygophore appendage, specimen from Poland – 17 and 18 specimen from Dehra Dun. – *E. motti* SINGH-PRUTHI 19–24. 22 proportions of pygophore side, its appendage and anal tube appendage. – *Usharia hyzha* sp. n. 25–30.

Chlorita (Eremochlorita) hortensis sp. n. (Figs. 35–38)

Ground dark greenish-olivaceous. Patches on vertex and on upper side of thorax seen in Fig. 37, vivid green or whitish-green. These on fore wing (Fig. 38) rather whitish near apex and greenish at base. Eyes and basal triangles brownish.

The new species is closely related to *Ch. matsumurai* DWOR. (Figs. 32, 33) differing from it by asymmetrical anal tube processes (Figs. 35, 36). It is also similar to *Ch. akdzhusani* ZACHV (Fig. 34) but the processes in the new species are more slim and sinuated.



Figs. 31–47

Amrasca biguttula biguttula (ISHIDA) 31. – *Chlorita (Eremochlorita) matsumurai* DWOR. 32, 33. – *Ch. (E.) akdzhusani* ZACHV., specimen from Pakistan (Kashmir 1300 m, Sasli, 50 km W of Gilgit, 21 Sep. 1970, coll. O. STĚRBA) 34. – *Ch. (E.) hortensis* sp. n.: 35–38, 35: anal tube appendages in natural position – 36: the same in slide. – *Cassianeura cassiae* (AHMED) 39: *Thaia oryzivora* GHAURI 40, 41. – *Mandera heterostyla* AHMED: 42–47 42: proportions of 9th abdominal sternite of male, subgenital plate, connective and paramere – 46: upper appendage at pygophore side.

Length: ♂ 2.9–3.0 mm, ♀ 3.0–3.2 mm.

Holotype, male, and paratypes 4 ♂♂, 3 ♀♀ Dehra Dun, FRI Botanical Garden, Artemisia sp., 25 Dec. (ISEZ, FRI, D, BM, MM)

Erythroneurini

Cassianeura RAMAKRISHNAN et MENON, 1973

Cassianeura cassiae (AHMED, 1970a) (Fig. 39)

1 ♀, Dehra Dun, FRI campus, Cassia sp., 25 Dec.; 1 ♀, same locality, 26 Dec.

Thaia GHAURI, 1962

Thaia oryzivora GHAURI, 1962 (Figs. 40, 41)

2 ♂♂, Dehra Dun, FRI Botanical Garden, grasses, 25 Dec.

Mandera AHMED, 1971b

Mandera heterostyla AHMED, 1971b (Figs. 42–47)

2 ♂♂, 1 ♀, Asarori Range, between Dehra Dun and Mohand, 26 Dec.

Bakshia gen. n.

Type-species *Bakshia bakshii* sp.

In body proportions resembling *Frutioidia* ZACHV Coronal suture distinct (Fig. 57) Face slightly convex (Fig. 62), quite short, lateral frontal sutures distinct only in their lower parts (Fig. 63).

Fore wing narrow (Fig. 59), claval vein not visible, 4th apical cell long.
Hind wing (Fig. 60) narrow, venation as in *Tautoneura* ANUFR., membrane rather light, longitudinal veins infuscated.

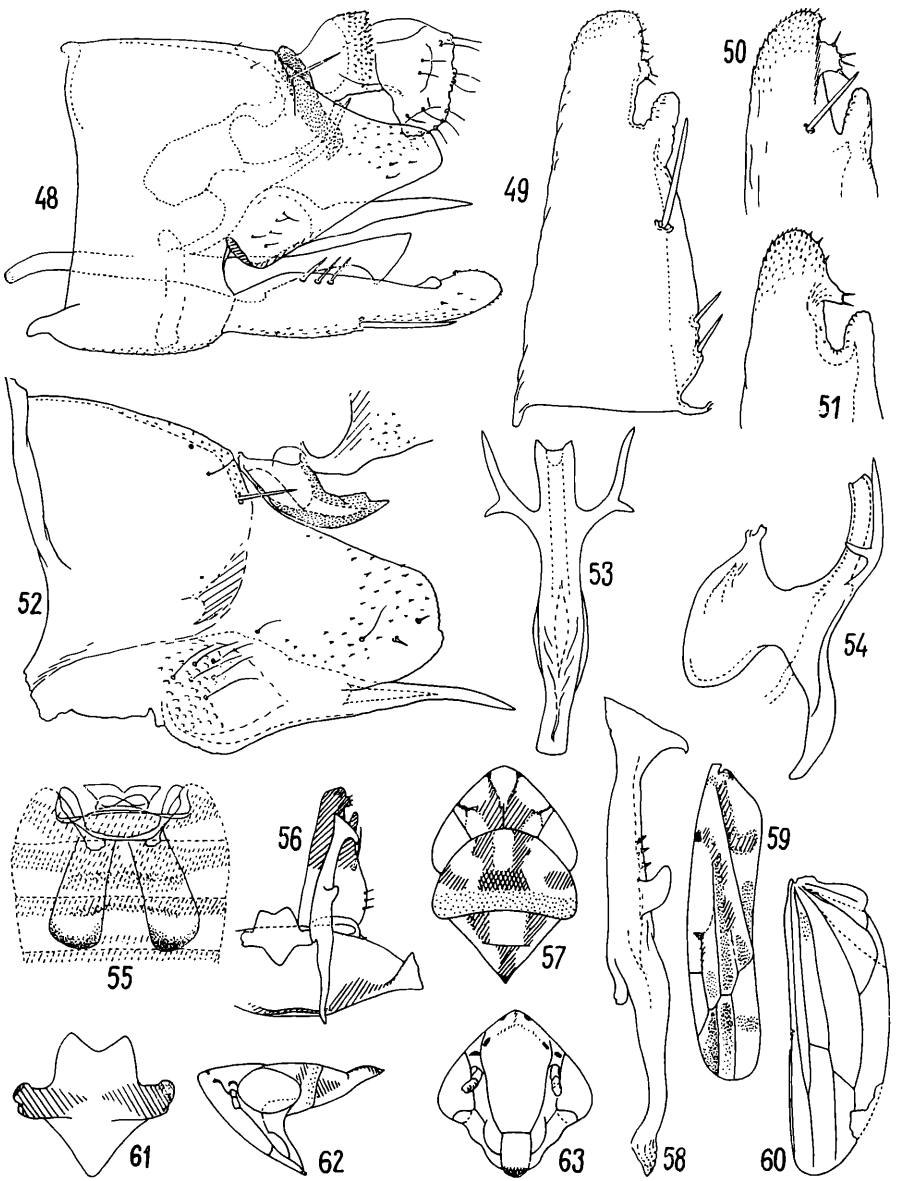
Genital capsule (Fig. 48) cylindrical, poorely pigmented. Both pygophore sides connected with each other by very short bridge, 9th sternite of male quite long, subgenital plates and segments of anal tube short. No processes at anal tube.

Pygophore side with well separated lower lobe terminated on a process (Fig. 52). Upper appendage present. The setosity consists of several hair-like microsetae groupped at basal lower angle, several slender setae scattered on the surface of the whole lobe and not numerous short rigid microsetae at hind margin. In the only known species a big single macroseta situated near articulation of upper pygophore appendage.

Subgenital plate short, well pigmented apically (Fig. 56), ornamented with a sculpture of minute teeth there (Figs. 49–51) There are marginal extensions in apical part of the plate. Setosity reduced and well differentiated. There are small microsetae near apex of plate (some of them bigger and situated on extensions), not numerous quite big, stout marginal microsetae forming „basal group" and big macrosetae (in the single known species one or two).

Paramere very long (Fig. 48), praeapical lobe shifted basad. There are short pointed setae situated apicad of praeapical lobe (Fig. 58).

Connective (Figs. 56, 61) lamellate, central lobe distinct.



Figs. 48–63. *Bakshia bakshii* sp. n.

Penis (Figs. 53, 54) with large praeatrium. Penis stem tubular, gonopore apical.

Abdominal apodemes well developed (Fig. 55).

Coleostron longer than all preceeding segments together, valvae only slightly protruding, 7th abdominal sternite of female quite short.

Bakshia bakshii sp. n. (Figs. 48–63)

Ground ivory Patches stripped in Fig. 57 ochre-yellow with olivaceous tint. A broad greyish stripe along hind margin of pronotum. The patches marked in Figs. 57, 62 and 63 with black are dark brown. Face yellowish in the centre, ochre-yellow in upper part. There is an ochre-yellow joining between brown marginal patches on vertex connected with a short central streak on face (Fig. 63). Tip of anteclypeus infuscated.

Fore wing whitish, semitransparent. The patches stripped in Fig. 59 are yellow, these spotted ones are greyish. Two small brownish patches situated at both ends of wax-field and the other one at base of clavus.

Lateral penis processes slightly exceed penis stem (Figs. 53, 54), bifurcated. Apex of paramere triangular, terminated on a blunt hook (Fig. 58). Upper pygophore appendage short, slightly curved and with a small thorn at apex (Fig. 52). Lower pygophore appendage tapering.

Length: ♂ 2.3–2.5 mm, ♀ 2.5–2.6 mm.

Holotype male, and paratypes 6 ♂♂, 9 ♀♀ Asarori Range, sal forest between Dehra Dun and Mohand, Mallotus philippiensis MUELL., 26 Dec. (ISEZ, FRI, D, BM, MM, USNM)

I take great pleasure in naming the new genus and species after Dr. B. K. BAKSHI for his valuable help both in field work and in geting proper information in laboratories.

Tautoneura ANUFRIEV, 1969

Balila DWORAKOWSKA, 1970a (as subgenus of *Erythroneura* FITCH) **syn. n.**
Havelia AHMED, 1971c **syn. n.**

The above mentioned synonymy is stated after comparative studies of the type-species of two former genera and two species closely related to *Havelia alba* AHMED.

Tautoneura ahmedi sp. n. (Figs. 69–76)

Living specimens white, the dried ones light testaceous with chalk white areas at coronal suture and in anterior part of pronotum. Body proportions typical for the genus.

The new species differs from *T aiba* (AHMED) **comb. n.** (Figs. 64, 65) by penis processes longer and apical part of paramere thinner and in comparison with *T. albida* (DWOR.) **comb. n.** (Figs. 66–68) the new species is bigger and with apices of penis processes directed mesad in posterior view (Fig. 75).

Length: ♂ 2.4–2.6 mm, ♀ 2.6–2.9 mm.

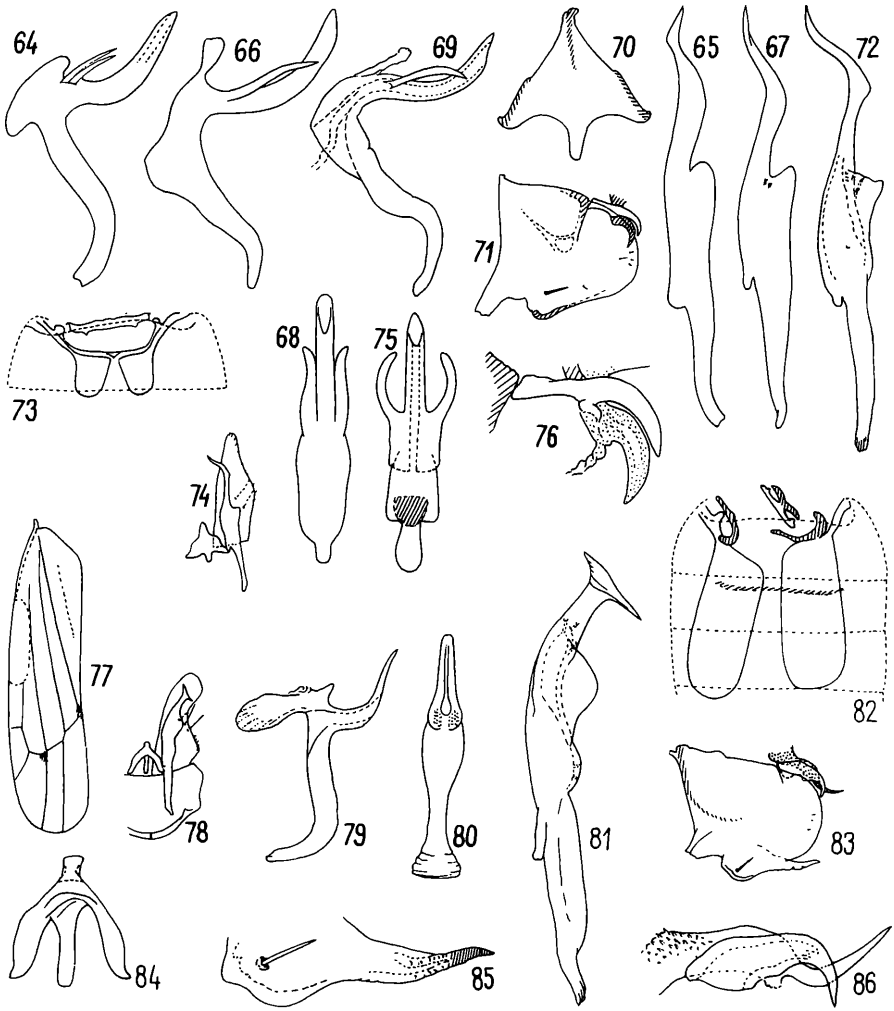
Holotype male, and paratypes 10 ♂♂, 13 ♀♀ Dehra Dun, FRI campus, Rosa sp., 24 Dec. (ISEZ, FRI, D, BM, MM, USNM)

The specific name is dedicated to Dr. M. AHMED.

Three closely related species of *Tautoneura* ANUFR. mentioned above differ from the type-species only by elongated basal part of subgenital plate, long and narrow praeatrium and a macroseta at upper margin of pygophore lobe.

Tautoneura misrai sp. n. (Figs. 77–86)

Body form and colouration resembling *Tautoneura tripunctula* (MEL.) **comb. n.** very much but vertex less produced in the new species and its size bigger.



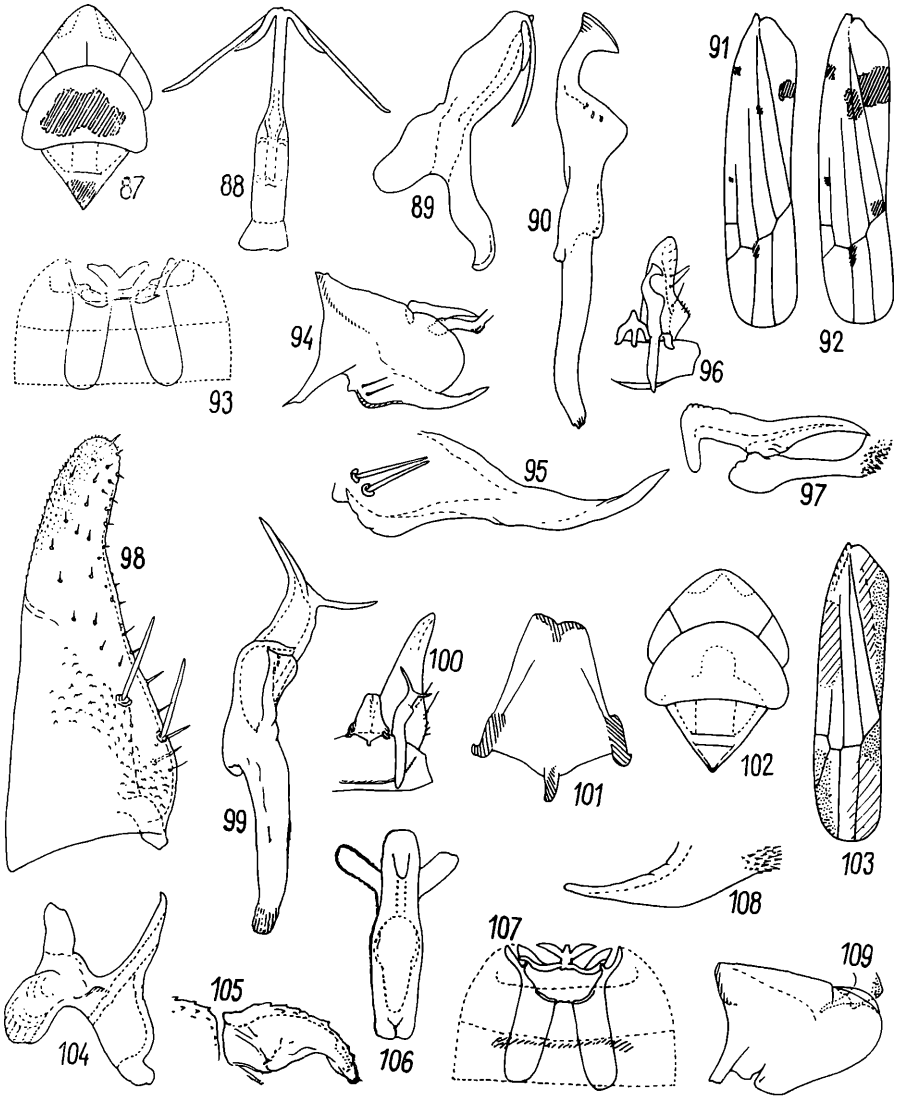
Figs. 64–86.
Tautoneura alba (AHMED), after AHMED 1971c: 64, 65. – *T albida* (DWOR.) 66–68. – *T. ahmedi* sp. n. 69–76. – *T misrai* sp. n. 77–86.

In male genital apparatus the most characteristical is apex of paramere terminated quite sharply (Fig. 81) and short penis stem situated on comparatively long manubrium (Figs. 79, 80) Abdominal apodemes enormously large (Fig. 82).

Length. ♂ 2.3 mm.

Holotype male Dehra Dun, FRI campus, 25 Dec.; paratype ♂ Asarori Range, between Dehra Dun and Mohand, Milletia auriculata BAKER, 26 Dec. (ISEZ, FRI)

The new species has been named in honour of Mr. R. M. MISRA (Research Officer).



Figs. 87–109.
Tautoneura panti sp. n. 87–97 – *Frutioidia smuga* sp. 98–109.

Tautoneura panti sp. n. (Figs. 87–97)

Ground yellowish-white. Vertex produced in the middle (Fig. 87). Colouring pattern consists of dark red patches on thorax and fore wing (Figs. 87, 91, 92). Vertex in fully coloured specimens yellow, in some of such exemplars there is a small reddish patch in its centre. A patch on pronotum can be divided into two or more smaller patches and some of red patches on fore wing can disappear.

The most characteristical feature in male genital apparatus is penis stem compressed laterally and provided with two pairs of long appendages at apex (Figs. 88, 89). Anal tube process lobate (Figs. 94, 97).

Length: ♂ 2.3 mm, ♀ 2.3–2.5 mm.

Holotype male, and paratypes 1 ♂, 9 ♀♀ Dehra Dun, FRI campus, not recognized shrub with big broad leaves, 25 Dec. (ISEZ, FRI, D, BM, MM, USNM)

The new species is named after Mr. S. C. PANT, FRI Library assistant.

Frutioidia ZACHVATKIN 1946b

Frutioidia smuga sp. n. (Figs. 98–109)

Ground yellow above, yellowish-white beneath There is a small fuscous mark at tip of scutellum (Fig. 102) and brownish patches along hind margin of fore wing and inside 3rd and 4th apical cells (Fig. 103)

Anal tube process rudimentary (Figs. 108, 109), what, however is maybe an aberrative feature of the only specimen. Upper appendage at pygophore side (Figs. 105, 109) short, arcuate, ornamented with blunt tubercles. Paramere (Figs. 99, 100) with two pointed processes at apex. Connective (Figs. 100, 101) almost lamellate. Subgenital plate typical for the genus, „basal group" consists of several long and thin setae (Fig. 98). Penis stem very short (Figs. 104, 106) without processes. Abdominal apodemes (Fig. 107) quite long. Hind margin of 7th abdominal sternite of female produced in the middle.

Length: ♂ 2.6 mm, ♀ 2.4 mm.

Holotype male, and paratypes 1 ♂, 2 ♀♀ Asarori Range, sal forest between Dehra Dun and Mohand, Mallotus philippiensis MUELL., 26 Dec. (ISEZ, MM)

Helionidia ZACHVATKIN, 1946a

Helionidia karachiensis AHMED, 1971a (Figs. 110–117)

Helionidia chlorotica AHMED, 1971a **syn. n.**
Helionidia krishnachurae AHMED, 1971b **syn. n.**
Zygina bipunctata RAMAKRISHNAN et MENON, 1974 **syn. n.** (primary homonym), nec *Zygina bipunctata* MELICHAR, 1896 (DWORAKOWSKA 1971)

9 ♂♂, 20 ♀♀, Dehra Dun, FRI campus, Poinciana regia BOJ., 26 Dec.

All figures at descriptions of species treated here as younger synonyms of *H. karachiensis* AHMED show intraspecific variability and this is the base of synonymy

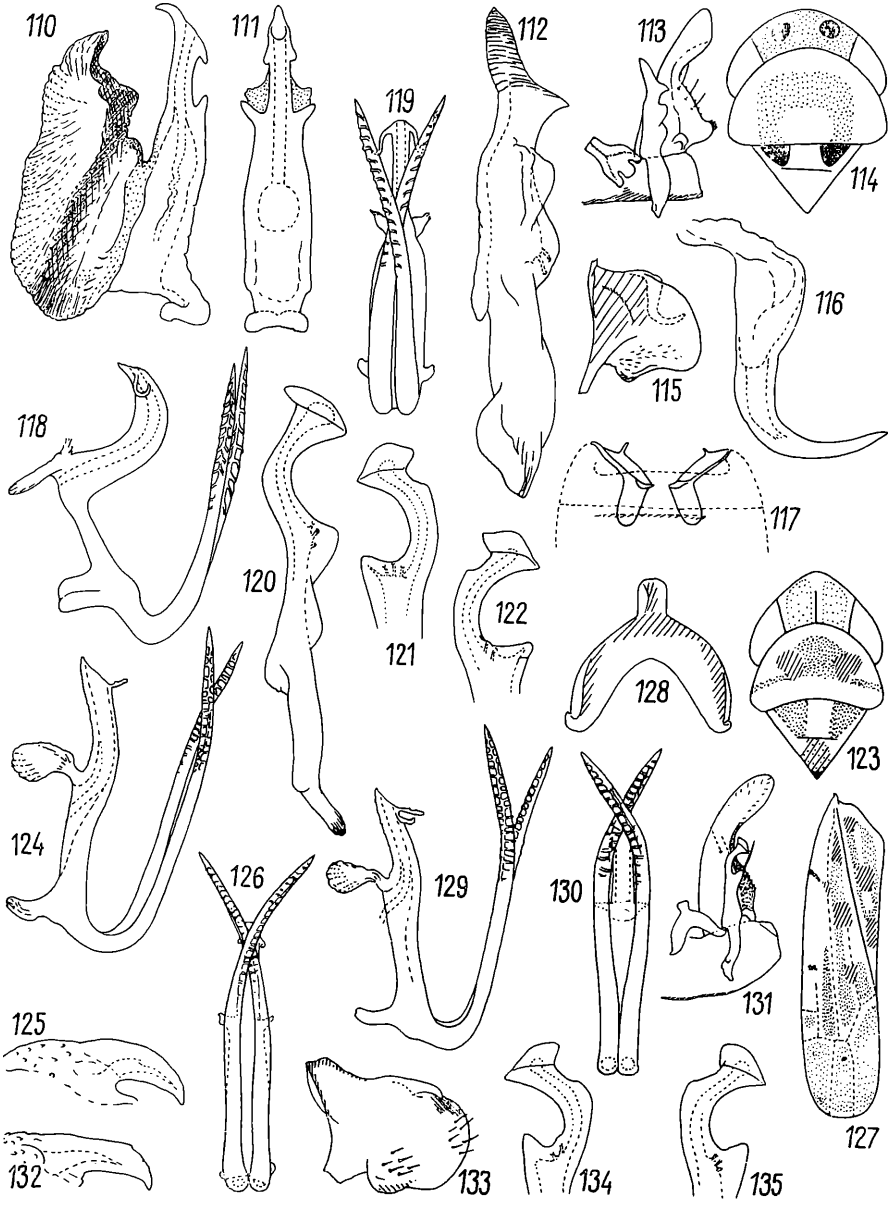
Quadria MAHMOOD, 1967

Spatulostylus RAMAKRISHNAN et MENON, 1973 **syn. n.**

Quadria pakistanica (AHMED, 1969) **comb. n.** (Figs. 121–135)

Zygina pakistanica AHMED, 1969
Spatulostylus variegatus RAMAKRISHNAN et MENON, 1973 **syn. n.**

1 ♀, Dehra Dun, FRI campus, 25 Dec.; 1 ♂, same locality, Poinciana regia BOJ., 26 Dec. The type-series of *Spatulostylus variegatus* RAM. et MENON has been studied.



Figs. 110–135.

Helionidia karachiensis AHMED 110–117 – *Quadria rubronotata* (DIST.) 118–120. – *Q. pakistanica* (AHMED) 121–135, 128–135 specimens of the same sample as the type-series of *Spatulostylus variegatus* RAM. et MENON.

Quadria rubronotata (DISTANT, 1918) (Figs. 118–120)

Empoasca rubronotata DISTANT, 1918

The holotype of *Empoasca rubronotata* DIST. has been studied. I have seen also the type-series of *Spatulostylus palniensis* RAM. et MENON, being apparently a member of the genus *Quadria* MAHM. and almost identical with *Q. rubronotata* (DIST.). However the male abdomen of *Spatulostylus palniensis* RAM. et MENON mounted in slide is seriously deformated and there was not allowed to dissect the holotype.

Ratburella RAMAKRISHNAN et MENON, 1973

Ratburella ornata sp. n. (Figs. 136–148)

Vertex produced in the middle (Fig. 145), ochre-yellow, ivory at anterior margin. Base of coronal suture infuscated. Pronotum yellowish, sometimes testaceous in the centre. Scutum and scutellum light. Face whitish.

Fore wing whitish, semitransparent. Wax-field, hind part of clavus, 1st and a half of 2nd apical cell (stripped in Fig. 141), bright yellow The patches at both ends of wax-field (spotted in Fig. 141) brown, these at hind margin smoked.

Appendage of upper margin of pygophore side short, ornamented with sculpture (Fig. 144). Anal tube appendage quite massive (Fig. 136). Paramere (Figs. 139, 143) bluntly terminated, with long apical process. Connective (Figs. 138, 143) crest-shaped, well pigmented. Penis stem (Figs. 146, 147) very short. Hind margin of the 7th abdominal sternite of female strongly produced in the middle.

Length ♂ 2.3 mm, ♀ 2.5 mm.

Holotype male, and paratypes 7 ♀♀ Asarori Range, between Dehra Dun and Mohand, some of females collected on Mallotus philippiensis MUELL., 26 Dec.; 1 ♀, Dehra Dun, FRI campus, 25 Dec. (ISEZ, FRI)

I have studied the type-species of the genus *Ratburella* RAM. et MENON but the slide in Canada Balsam shows incomplete and deformated structures. The generic classification of the newly described species is based chiefly on its outward appearance, abdominal apodemes, paramere and setosity of pygophore side.

Watara gen. n.

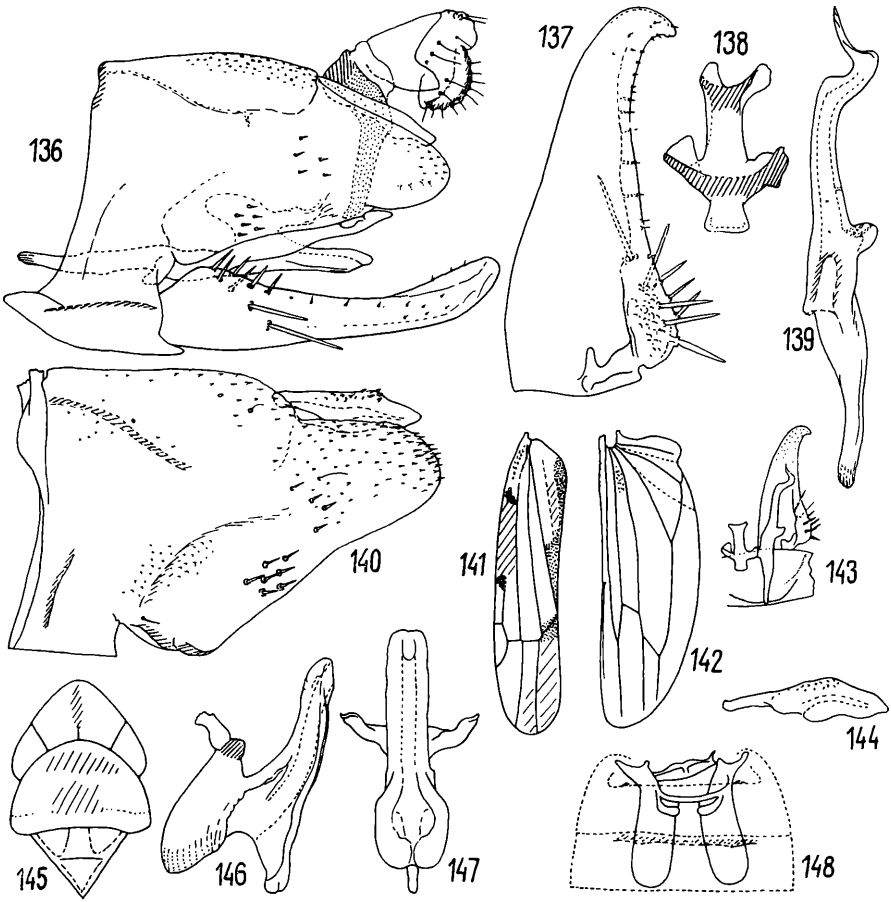
Type-species: *Typhlocyba sudra* DISTANT, 1908

Body shape resembles that of *Seriana* DWOR. but pronotum and face slightly shorter (Figs. 159, 162, 164) Anteclypeus and lorae quite broad. Lateral frontal sutures strongly incised (Fig. 159).

Fore wing (Fig. 157) quite broad, claval vein distinct, 1st apical cell large, the 4th one minute.

Hind wing (Fig. 158) narrowing before apex, venation much resembling that of *Zyginoides* MATS. Veins infuscated.

Genital capsule cylindrical, not flattened (Fig. 149) moderately sclerotized. Anal tube quite narrow, without processes. Subgenital plate protruding beyond pygophore side.

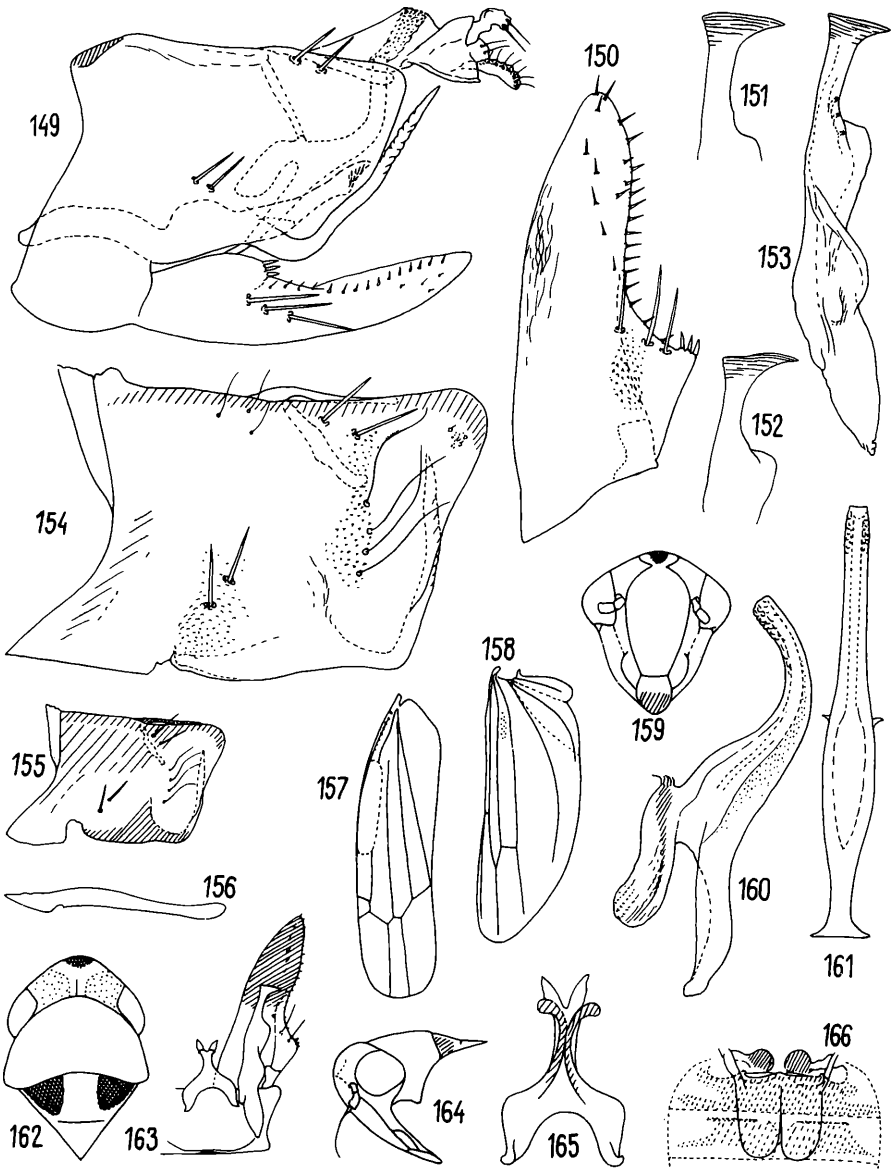


Figs. 136–148. *Ratburella ornata* sp. n.

Pygophore side provided with lower lobe terminated on a process (Fig. 154) and with upper appendage which is articulated (Figs. 154–156). The setosity well developed and highly specialized; it consists of several (in the only known species the most frequently two in each place) macrosetae situated either at connection with the anal tube or at basal lower angle, and not numerous long hair-like microsetae arranged in a row parallel to the hind margin.

Subgenital plate (Fig. 163) with a broad protruding which bears a „basal group" The setosity (Fig. 150) slightly resembles that of *Empoascanara* DIST Sculpture indistinct, apex of plate pigmented. Ninth abdominal sternite of male almost parallel-sided with a narrow ledge at its anterior margin (Fig. 163).

Paramere (Figs. 151–153) massive in basal part. Praeapical lobe quite short. Sensory structures in a form of sensory pits situated at base of praeapical lobe and above.



Figs. 149–166. *Watara sudra* (DIST.)

Connective solid, Y-shaped (Figs. 163, 165).

Penis (Figs. 160, 161) with long and narrow praeatrium. The stem tubular, gonopore apical. Abdominal apodemes well developed (Fig. 166).

Hind margin of 7th abdominal sternite of female slightly produced in the middle.

Watara sudra (DISTANT, 1908) **comb. n.** (Figs. 149–166)

Typhlocyba sudra DISTANT, 1908
Empoascanara binotata DISTANT, 1918 **syn. n.**
Zygina binotata: AHMED, 1971b
Platytettix sudra: RAMAKRISHNAN et MENON, 1974

Material studied. The female lectotype of *Typhlocyba sudra* DIST. labelled „Calcutta N. A. 27 VIII 07' „Coll 1911 – 383" other specimens of the type-series 1 ♀, „Zoological garden Calcutta 21. VII. 07" 1 ♂, some labels, 3 Aug. 1907 The type-series of *Empoascanara binotata* DIST. (3 specimens), the male selected as lectotype. 10 ♂♂, 13 ♀♀, Asarori Range, between Dehra Dun and Mohand, Bauhinia sp., 26 Dec.

Empoascanara DISTANT, 1918

Ratbura MAHMOOD, 1967 **syn. n.**

The type-species of both genera have been studied.

Empoascanara nagpurensis (DISTANT, 1918) **comb. n.** (Figs. 173–178)

Empoasca nagpurensis DISTANT, 1918

The type-series of *Empoasca nagpurensis* DIST (3 ♂♂, 7 ♀♀, among which one female belongs to *Balcluthini*) was studied, a male collected in Nagpur on wheat has been selected as lectotype.

Empoascanara serrata (SINGH, 1969) **comb. n.** (Figs. 167–172)

Zygina serrata SINGH, 1969
Erythroneura nagpurensis: AHMED, 1970a
Zyginidia serrata: SOHI, 1976

5 ♂♂, 9 ♀♀, Dehra Dun, FRI campus, grasses, 25 Dec.

This species is closely related to *E. nagpurensis* (DIST.) differing chiefly by shape of upper pygophore appendage (Fig. 170) and by form of hind margin of female 7th abdominal sternite.

Empoascanara lutea sp. n. (Figs. 179–185)

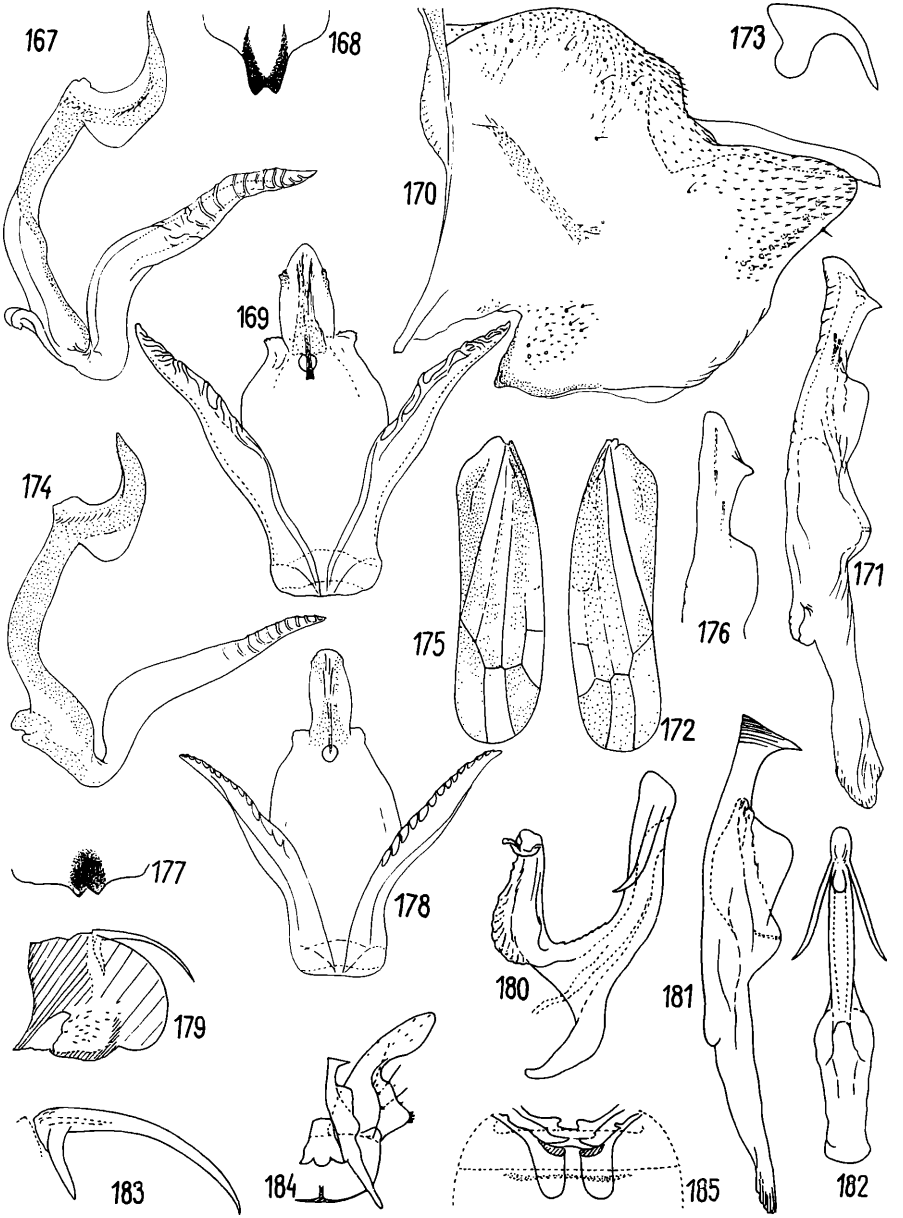
Vertex slightly produced in the middle, ochre-yellowish, darker at tip; anteclypeus brownish. Eyes blackish. Upper side of thorax yellowish. Pronotum dark grey in the centre and yellowish-grey along hind margin.

Fore wing ochre-yellow on clavus and basal of corium; apical cells smoked, apical veins infuscated.

The most characteristical features of male genital apparatus are short pygophore side (Fig. 179), narrow base of upper pygophore appendage (Fig. 183) and well developed abdominal apodemes (Fig. 185).

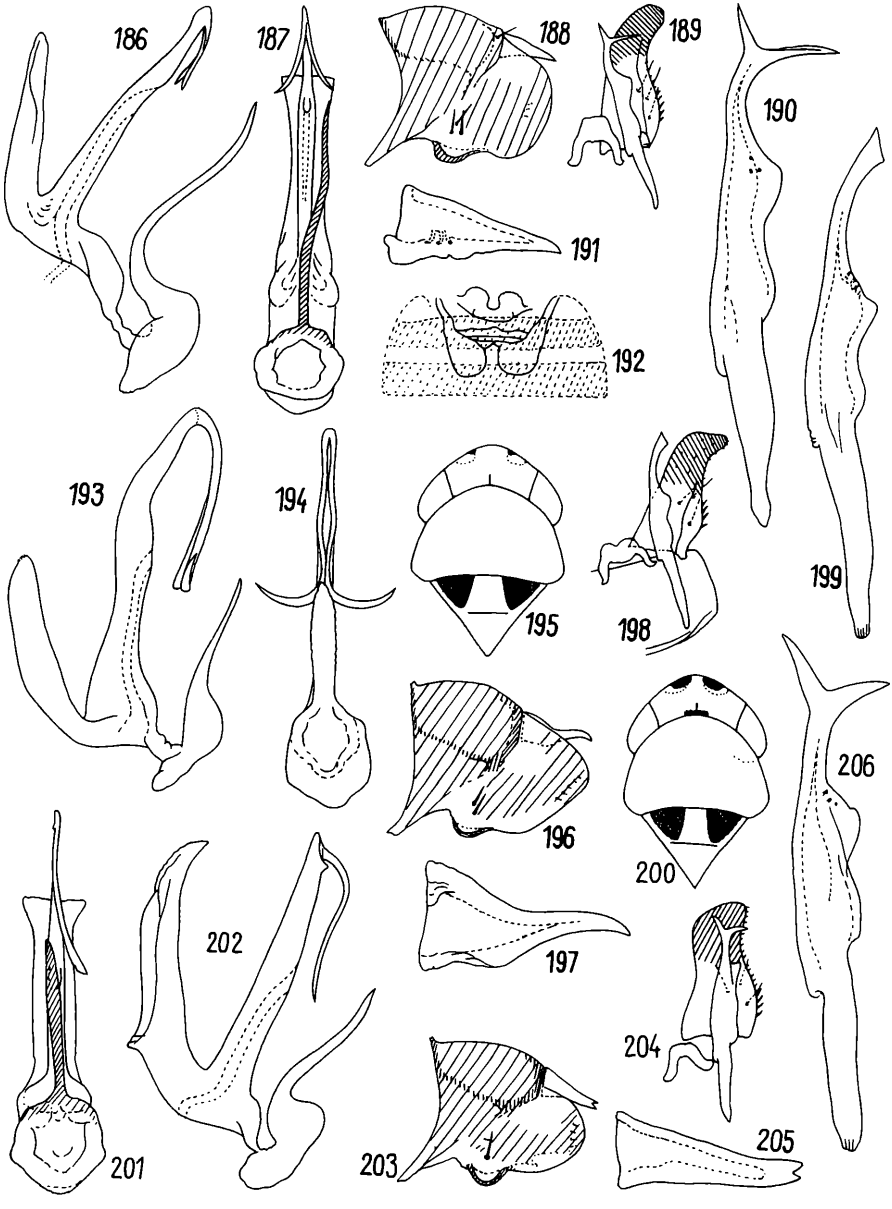
Length: ♂ 2.5 mm.

Holotype male Asarori Range, mixed wood between Dehra Dun and Mohand, 26 Dec. (ISEZ)



Figs. 167–185.

Empoascanara serrata (SINGH): 167–172, 168: hind part of 7th abdominal sternite of female. – *E. nagpurensis* (DIST.) 173–178. – *E. lutea* sp. n. 179–185.



Figs. 186–206.

Anufrievia zelta sp. n. 186–192. – *A. cervena* sp. n. 193–199. – *A. maculosa* sp. n. 200–206 (in Fig. 202 one appendage of the penis stem missing).

Anufrievia DWORAKOWSKA, 1970b

Anufrievia zelta sp. n. (Figs. 186–192)

Face, vertex and anterior part of pronotum yellowish, sides of head lighter. Centre and a stripe just before hind margin of pronotum as well as basal triangles, brownish. Hind margin of pronotum greyish. Scutum and scutellum brownish-ochre, sometimes with a reddish tint. Eyes blackish.

Fore wing brownish-grey, lighter at costal margin.

Length: ♂ 3.1 mm, ♀ 2.8–3.1 mm.

Holotype male, and paratypes 5 ♂♂, 23 ♀♀ Dehra Dun, FRI campus, Lantana camara L. var. aculeata MOLDENKE, 25 Dec. (ISEZ, FRI, D, BM, MM)

Anufrievia cervena sp. n. (Figs. 193–199)

Ground of vertex and thorax orange-brown with reddish tint. Face ochre-testaceous in the centre, whitish at sides. There are two small blackish patches at anterior margin of vertex (Fig. 195) accompanied with larger whitish patches. Eyes and basal triangles black.

Fore wing semitransparent, testaceous; brown on clavus and wax-field. Apical cells light.

Length: ♂ 2.9–3.1 mm, ♀ 2.8–3.1 mm.

Holotype male, and paratypes 3 ♂♂, 4 ♀♀ Dehra Dun, FRI campus, Lantana camara L. var. aculeata MOLDENKE, 25 Dec. (ISEZ, FRI, D, BM)

Anufrievia maculosa sp. n. (Figs. 200–206)

Vertex and anterior part of pronotum ochre-yellowish. Remaining parts of pronotum, scutum and scutellum ochre-brownish. Face ochre-testaceous in the centre, whitish at sides. Two blackish patches at anterior margin of vertex arounded with whitish. A transverse mark at base of vertex (Fig. 200), eyes and basal triangles, black.

Fore wing grey with olivaceous tint, apical veins darker.

Length: ♂ 3.0 mm, ♀ 3.2 mm.

Holotype, male, and paratypes 2 ♀♀ Dehra Dun, FRI campus, Lantana camara L. var. aculeata MOLDENKE, 25 Dec. (ISEZ, FRI)

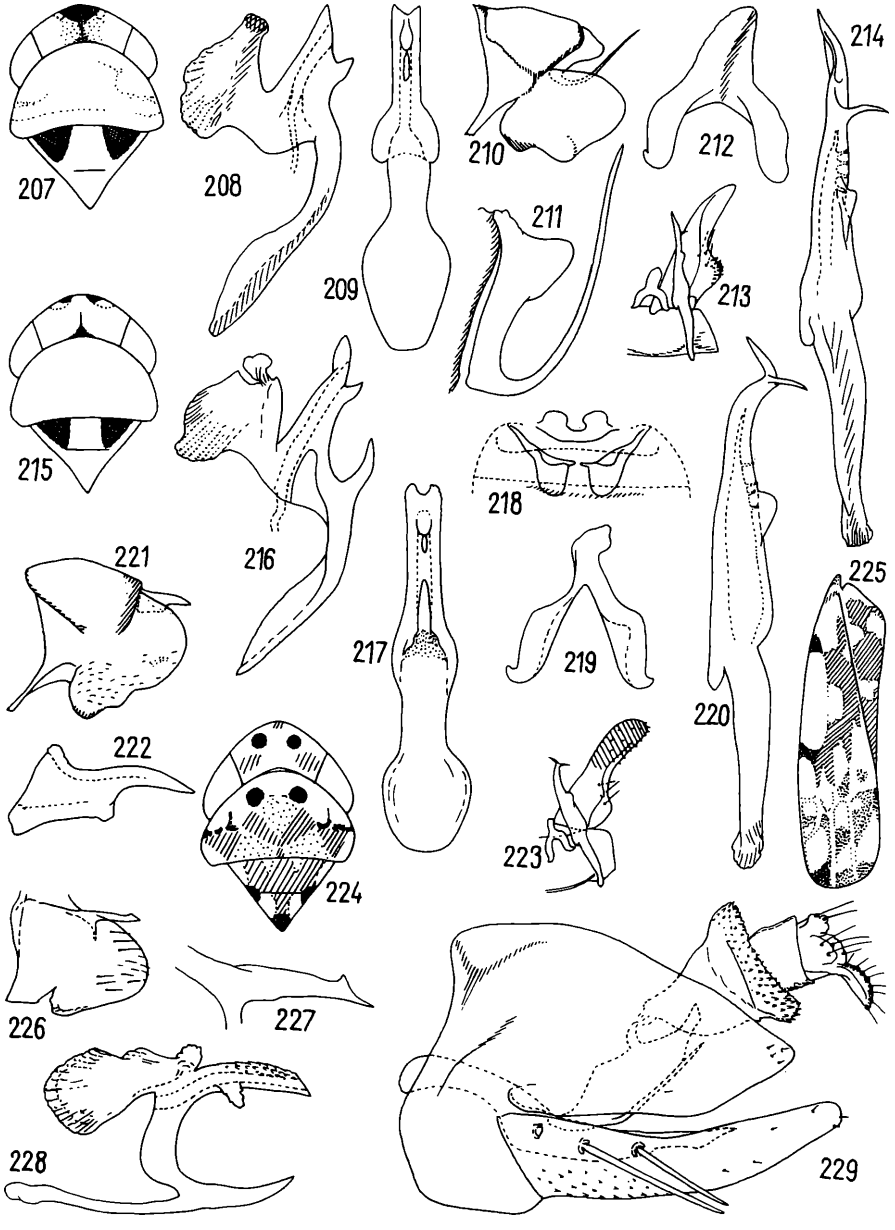
Arboridia ZACHVATKIN, 1946b

Arboridia cerna sp. n. (Figs. 207–214)

Vertex at sides, anterior part of pronotum and areas just above antennae on face, yellowish-orange. Centre of vertex, centre of pronotum and lower part of face dirty brown. Hind part of pronotum, scutum and scutellum reddish-orange. Basal triangles (Fig. 207), a large patch on tip of vertex (passing on frons), anteclypeus and eyes, black. There are two small whitish patches situated laterad of central spot on vertex.

Fore wing dark brown, clavus and wax-field darker, base suffused with reddish.

In male genital apparatus the most characteristical is very long upper pygophore appendage (Figs. 210, 211), connective Y-shaped (Fig. 212) and paramere with two sharply pointed extensions (Figs. 213, 214)



Figs. 207–229.
Arboridia cerna sp. n. 207–214. – *A. soror* sp. n. 215–223. – *Zyginoides taiwanus* (SHIRAKI) 224–228. – *Kamaza reducta* sp. n. 229.

Length: ♂ 3.6 mm.

Holotype male Dehra Dun, FRI campus, Cassia sp., 26 Dec. (ISEZ)

Arboridia soror sp. n. (Figs. 215–223)

Ground of body brownish-yellow with an ochre tint. Two patches near tip of vertex, an infuscation at base of coronal suture (Fig. 215), basal triangles and eyes, black. There are two small whitish patches laterad of black spots on vertex. Face yellowish-testaceous.

Fore wing olivaceous-yellow, apical cells slightly smoked.

Length ♂ 3.3 and 3.4 mm.

Holotype male, and paratype, ♂ Asarori Range, nr. Dehra Dun, Bauhinia sp., 26 Dec. (ISEZ, FRI)

Zyginoides MATSUMURA, 1932

Zyginoides taiwanus (SHIRAKI, 1912) (Figs. 224–228)

Pakeasta notata AHMED, 1971b **syn. n.**

1 ♂, Dehra Dun, FRI campus, Poinciana regia BOJ., 26 Dec.; 1 ♂, 4 ♀♀, Asarori Range, between Dehra Dun and Mohand, Grewia tiliaefolia VAHL, 26 Dec.

The above mentioned synonymy is based on comparison of my exemplar with the drawings of an exemplar of the type-series of *Pakeasta notata* AHMED.

Kamaza gen. n.

Type-species *Kamaza reducta* sp. n.

Body flattened, poorely pigmented and only just a little sclerotized.

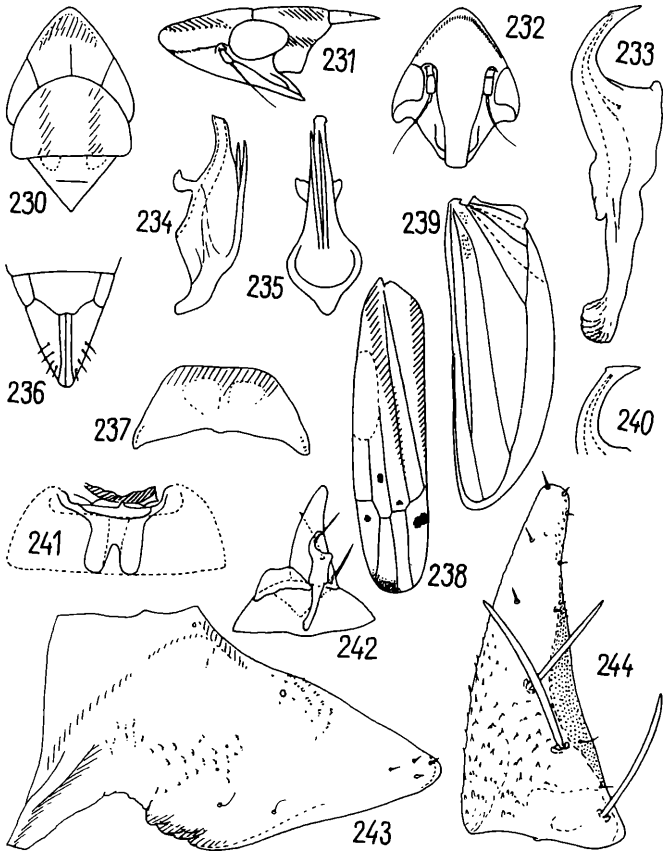
Head with eyes slightly broader than pronotum. Vertex almost equally long as pronotum, scutum with scutellum shorter (Fig. 230). Coronal suture long, distinct. Transition of vertex to face quite sharp (Fig. 231). Face almost flat. There are only lateral sutures of frontoclypeus, lateral sutures of anteclypeus and the sutures of lower parts of lorae (Fig. 232). Antennae situated in front of eyes. Ocelli absent. No sexual dimorphismus in body proportions.

Fore wing narrow, veins distinct (Fig. 238). Claval vein not visible. Corial and apical cells of almost equal breadth. Length of all apical cells also almost not differentiated.

Hind wing venation (Fig. 239) slightly resembling that of *Kunzeana* OMAN but with the absence of veins m_{3+4} and $m\text{-}cu_1$.

Genital structure of male very simple. Anal block (Fig. 229) cylindrical. Anal tube and subgenital plate slightly protruding beyond pygophore side. Both lobes of pygophore side connected with each other on a long distance dorsally. Anal tube without processes.

Pygophore side lobate, no sclerotizations. The setosity consists of several rigid microsetae on outer side at hind margin (Fig. 243) and some slender microsetae dispersed along upper and lower margins.



Figs. 230–244. *Kamaza reducta* sp. n. – 236 end of female abdomen, ventral view

Subgenital plate flat, triangular, covered with very distinct teeth sculpture (Fig. 244). The setosity contains several big macrosetae in basal part, not numerous slender microsetae along outer margin at base and small more rigid microsetae in distal part of plate.

Paramere (Figs. 233, 240, 242) with the shortest apical part and large but not distinctly separated praeapical lobe. Sensory pits situated subapically and at the base of praeapical lobe.

Connective (Fig. 237) lamellate.

Penis stem tubular, gonopore apical (Figs. 234, 235). Praeatrium deep and narrow. Atrial rim broad. Atrial processes present.

Abdominal apodemes (Fig. 241) small, well developed.

Coleostron short (Fig. 236).

The systematic position of this genus require further studies in respect of unique hind wing venation and very simple genital apparatus.

Kamaza reducta sp. n. (Figs. 229–244)

Living specimens white. Eyes blackish. Dried exemplars often grey on vertex and face and testaceous-yellow on upper side of thorax. Transition vertex to face often ivory A yellow patch touches this stripe in front of vertex and a yellow or orange-yellow narrow fascia borders it on face (colouring pattern is marked with stripes in Figs. 230–232). Anterior margin of pronotum often whitish. There are two indistinct longitudinal yellow streaks on pronotum often confluent with yellowish-grey patch situated in its centre. A bright yellow horizontal streak on side of pronotum (Fig. 231).

Fore wing semitransparent, slightly yellowish apically and at costal margin, veins light. Brownish-black patches seen in Fig. 238 vary in number but these inside 1st and at tip of 3rd apical cells always present. Hind margin of clavus broadly bordered with a yellow streak. There is also an oblique bright yellow streak on corium (stripped in Fig. 238).

Hind margin of 7th abdominal sternite of female slightly produced caudad, truncate and incised at midline (Fig. 236).

Length: ♂ 2.0–2.3 mm, ♀ 2.0–2.4 mm.

Holotype male, and paratypes, 31 ♂♂, 38 ♀♀ Asarori Range, sal forest between Dehra Dun and Mohand, Milletia auriculata BAKER, 26 Dec.; 3 ♂♂, same locality and date, on Mallotus philippiensis MUELL.; 13 ♂♂, 10 ♀♀, Dehra Dun, forest plantations, Milletia auriculata BAKER, 25 Dec. (ISEZ, FRI, BM, D, MM, USNM)

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Address of the author
Dr. I. Dworakowska, 00–849 Warszawa, ul. Pereca 2 m. 1512, Poland.