

## New Porricondyliinae gall midges (Diptera: Cecidomyiidae) from the Seychelles archipelago

VOLDEMARS SPUNGIS

Faculty of Biology, University of Latvia, 4 Kronvalda Blvd., Riga, LV 1586, LATVIA,  
[adalia@lanet.lv]

**Abstract** - 25 species of Cecidomyiidae gall midges have been described from the Seychelles archipelago, all require revision. New material is reported here, with the first reporting of the presence of the subfamily Porricondyliinae from the islands. A new species *Asinapta northi* sp. n. is described.

**Key words** - Seychelles archipelago, Cecidomyiidae, fauna, new species.

### INTRODUCTION

Limited collection of gall midges has been done in the Seychelles archipelago islands. H. Scott collected some free-living gall midges from islands Silhouette and Mahé and Anonyme island. J.J.KIEFFER (1911) identified the material and described all taxa as new species: 24 new species and 4 new genera – *Chrysodiplosis*, *Lepidodiplosis*, *Planodiplosis*, and *Prowinnertzia*. Later KIEFFER (1912, 1913a) revised these descriptions and established eight new genera based on species recorded from the Seychelles islands – *Clinophaena*, *Lasiodiplosis*, *Lepidobremia*, *Nanodiplosis*, *Plagiodiplosis*, *Properrisia*, *Nanolauthia*, and *Sphaerolauthia*. Genera and species were only partly revised afterwards and many uncertainties over their status remain. H.F. BARNES (1939) described new genus and species *Megommata seychelli*, based on material collected by on Dennis Island, preying on the coccid *Pulvinaria* sp. associated with coffee trees.

K.M. HARRIS (1980) issued the Catalogue of the Diptera of the Afrotropical Region and mentioned 25 species from the Seychelles. Finally, R.J. GAGNÉ (2004) listed all species known from the Seychelles in the catalogue of the World Cecidomyiidae taking into account the latest advances in taxonomy of gall midges.

In addition to the 25 species currently recorded from Seychelles some of the numerous species described from East Africa by J.J. KIEFFER (1913b) may be found also in Seychelles after more thorough research there. Similarly, the new genus and nine new species of Porricondyliinae described from Somalia (MAMAEV & ZAITZEV 1997) may also occur in the archipelago. The present paper reports on recent collections from granitic and coral islands of the Seychelles group.

## METHODS

Gall midges were collected on D'Arros Island (15-17.09.2003, mixed forest, Malaise trap, leg. J.Gerlach), Denis Island (20-23.06.2003, open *Pisonia grandis*/*Casuarina equisetifolia* woodland, Malaise trap, leg. J.GERLACH), and North Island (30.07-15.08.2005, marsh edge, Malaise trap, leg. O'SHEA); Picard Island, Aldabra (22-29.09.2005, mixed scrub at sea level, Malaise trap, leg. O.MAUREL & K.MACH). Gall midges were dehydrated and mounted in Canada balsam on microscopic slides. Slides with gall midges are deposited in the Natural History Museum, London (BMNH).

## RESULTS

In total 234 individuals were collected during survey (Table 1). These are dominated by the Cecidomyiinae, which is the most diverse subfamily of gall midges, but currently cannot be identified. The Lestremiinae comprise only a small number of individuals which need to be analysed as part of a global revision. Porricondylinae are considered further here.

There has been little study of the subfamily Porricondylinae in the Afrotropical region and undescribed species are definitely present. The genera *Winnertzia* and *Camptomyia* are represented by females only and cannot be identified to species. There are two undescribed species; a species of *Asinapta* described as a new species below and a species of Dicerurini, which cannot be fully described due to the poor condition of the single specimen.

## DESCRIPTIONS OF NEW TAXA

### *Asinapta northi* sp. n.

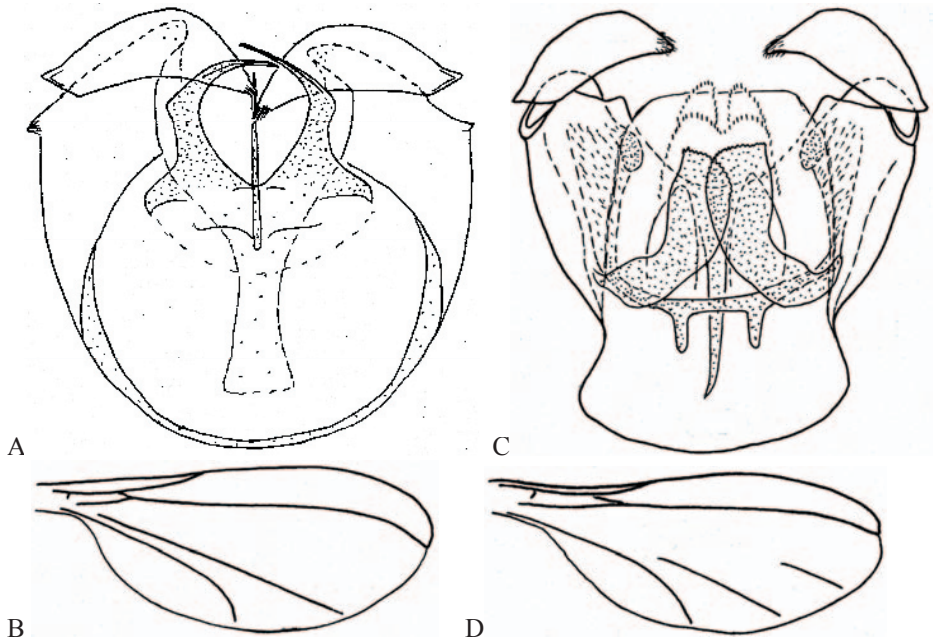
Fig. 1A, B.

**Holotype:** male on microscopic slide labelled as "No. S1, Seychelles, North Island, 30.07-15.08.2005, marsh edge, Malaise trap, leg. O'Shea". **Paratypes:** 4 males on microscopic slides No. S2, S3, S4, S5 labelled as for holotype; 2 females on microscopic slides No. S6, S7 labelled as for holotype. Type specimens deposited in the BMNH.

**Table 1.** Summary of gall midges collected in Seychelles in 2003-5

Taxon	Island and collection date			
	D'Arros 21.vi.2003.	Denis 16.vii.2003.	North 30.vii-15.viii.2005	Picard 22-29.ix.2005
Lestremiinae	2	8	6	-
Cecidomyiinae	35	28	123	7
Porricondylinae, total	7	-	17	1
<i>Asinapta northi</i> sp. n.	-	-	16	-
Dicerurini sp.	-	-	-	1
<i>Winnertzia</i> sp.	1	-	1	-
<i>Camptomyia</i> sp.	6	-	-	-

**Male.** Yellowish in colour, antennae slightly darker, thorax patchy with distinct darker dorsal stripes. Length of body 1.4-1.8 mm, length of wing 1.2-1.7 mm. Head round, eyes almost completely covering head. Antenna with 2+14-19 flagellomeres, scape with ventral widening and few setae, pedicel subcylindrical with 1 medial and 4 lateral setae, medial flagellomeres with oval node 1.1-1.3 times longer than width, stem 0.7-0.8 length node, terminal segment conical with short cylindrical projection, terminal two segments may be fused. Basal whorl of setae with about 20, medial – about 40, distal whorl – about 10 setae. Ring-shaped sensoria simple, wide, present on all flagellomeres. Palpi with 4 segments, longer than height of head, segments with relative length as 1:3:5:6 respectively. Eyes large, eye bridge 10-11 ommatidia wide. Thorax with numerous mesopleural and pteropleural seta. Halteres 2 times shorter than height of thorax. Wings wide, 2 times longer than width, Rm-m and Rs forming narrow angle with R, R joins C before middle of wing, R evenly bent and joining with C at wing apex,  $M_{1+2}$  indistinct,  $M_{3+4}$  distinct, nearly straight, evanescent at apex, Cu simple, evenly bent in distal part, evanescent at apex, joining with hind margin at narrow angle. Hind half of tergites swollen and covered with longer setae, sternites without distinct pattern. Legs relatively short, femur, tibia, tarsus, nearly the same length, tarsomeres<sub>1</sub> with pointed apical projection, tarsomeres with relative length as 1:8:4:2:1 respectively. Tarsal claws dark, with long basal teeth. Empodium as long as claws.



**Figure 1.** Hypopygium and wing: A and B - *Asinapta northi* sp. n., holotype; C and D – *Dicerurini* sp.

**Hypopyge.** Gonocoxites massive, widely fused, with setose elongated mediobasal lobe. Ventral plate indistinct. Gonostyles slightly curved, 3.5 times longer than width, moderately inflated at middle length, pointed to apex, with dark, short pectinate claw. Epandrium membranous, weakly distinct. Hypandrium and cerci of nearly equal in size, relatively small, bilobed. Parameres light brown, sclerotised, strongly curved, with lateral tooth and widened base. Genital rod simple, fine, weakly sclerotised. Gonocoxite roots fused, long, weakly sclerotised. Transverse bridge indistinct.

**Female.** Length of body 1.2-2.0 mm, length of wings 1.1-2.0 mm. Antennae with 2+13-21 segments, flagellomeres with node as long as wide, stem conical, 0.2 length of node. Medial whorl of seta consists of two groups of setae. Sensoria ring-shaped connected with 2 comisures, present on all flagellomeres. Ovipositor telescopic, about half of length of abdomen, terminal lamella elongate-oval. Other characters as in male.

**Larva and biology** unknown.

**Material examined:** types and 9 males from the type locality – North Island.

**Remarks.** New species is similar to *Asinapta mira* described from Somalia (Mamaev & Zaitzev 1997), but clearly differs in morphology of the hypopygium.

**Derivation of specific epithet:** from the type locality – North Island.

### **Dicerurini sp.**

Fig. 1C, D.

**Material examined:** male on microscopic slide labelled as “No. S8, Seychelles, Picard Island, Aldabra, 22-29.09.2005, mixed scrub at sea level. Malaise trap, leg. O.Maurel & K.Mach”.

**Male.** Yellowish, thorax brownish in colour. Antennae greyish. Length of body 1.3 mm, length of wings 1.6 mm. Antennae with broken segments, only 3 flagellomeres remained. Scape and pedicel longer than width. Scape with 7-8 setae, pedicel with 3-4 setae. Flagellomeres with cylindrical node 2 times longer than width, stem as long as node. Basal whorl of seta consists of 11-12 setae, medial – of 9-10 setae with enlarged sockets, distal – of 6-8 setae. Ring-shaped sensoria simple. Palpi secondarily (?) with 5 segments, as long as height of head, segments with relative length as 1:1:2:1:1 respectively. Eyes cover nearly all head surface, eye bridge very wide. Thorax with mesopleural and pteropleural seta. Haltere shorter than height of thorax. Wings wide, 2.5 times longer than width,  $R_{m-m}$  and  $R_s$  forming narrow angle with  $R$ ,  $R$  joins  $C$  before middle of wing,  $R$  situated close to  $C$  and joining with  $C$  before wing apex,  $M_{1+2}$  distinct in distal part,  $Cu_1$  and  $Cu_2$  independent,  $Cu_1$  weakly distinct at distal part, straight,  $Cu_2$  evenly bent in distal part, evanescent at apex, joining with hind margin at narrow angle. Abdomen with tergites and sternites without distinct pattern. Legs long, fine, tarsomeres with relative length as 1:8:4:2:1 respectively. Tarsal claws with basal teeth. Empodium rudimentary.

**Hypopyge.** Gonocoxites slender with medial sclerotized, smooth lobe. Ventral plate wide with wide emargination, having indistinct lateral lobes. Gonostyles two times longer

than width, slightly curved and inflated, apex pubescent with no claw. Epandrium wide. Hypandrium large, bilobed, cerci smaller, rounded, bilobed. Parameres extremely wide and flattened, strongly sclerotised, partly overlapping. Genital rod strongly sclerotised, widened to distal part. Transverse bridge well developed, strongly sclerotised with short, strongly sclerotised roots.

**Female, larva, biology** unknown.

#### ACKNOWLEDGEMENTS

I would like to thank to J.GERLACH for providing the material from the Seychelles and to M.JASCHHOF for comments on Lestremiinae.

#### REFERENCES

- BARNES H.F. 1939. Gall Midges (Cecidomyiidae) associated with Coffee. *Revue Zool. Bot. afr.* **32**(3-4): 324-336.
- EDWARDS F.M. 1938. On the British Lestremiinae, with notes on exotic species. – 6. (Diptera, Cecidomyiidae) *Proc. R. Ent. Soc. Lond.* (Ser. B) **7**(11): 229-243.
- GAGNÉ R.J. 1985. Descriptions of new Nearctic Cecidomyiidae (Diptera) that live in xylem vessels of fresh-cut wood, and a review of *Ledomyia* (s.str.). *Proc. Entomol. Soc. Wash.* **87**(1): 116-134.
2004. A catalog of the Cecidomyiidae (Diptera) of the World. *Mem. Entomol. Soc. Wash.* **25**: 1-408.
- HARRIS K.M. 1968. A systematic revision and biological review of the cecidomyiid predators (Diptera: Cecidomyiidae) on world Coccoidea (Hemiptera : Homoptera). *Trans. R. ent. Soc. Lond.* **119**(13): 401-494.
1980. 18. Family Cecidomyiidae. In: Crosskey R.W. (ed.). *Catalogue of the Diptera of the Afrotropical region*. London: 238-251.
- HUTSON A.M. 1981. A preliminary list of insects of Diego Garcia atoll, Chagos archipelago. *Atoll research bulletin* **243**: 27-57.
- JASCHHOF M. 1998. Revision der “Lestremiinae” (Diptera, Cecidomyiidae) der Holarktis. *Studia dipterologica*, Suppl. 4, 552 S.
- KIEFFER J.J. 1911. No. XIV.-Diptera, Cecidomyiidae, des Seychellen-Inseln aus der Sammlung von Ms. H. Scott. *Trans. Linn. Soc. Lond., Ser. Zool.* **2** **14**(3): 315-330.
1912. *Neue Gallmücken – Gattungen*. France, Bitch, 2 pp.
- 1913a. Diptera Fam. Cecidomyiidae. In: Wytsman, P. *Genera Insectorum*, 152 fasc., 346 p., 15 pl.
- 1913b. Cécidomyies de l’Afrique orientale. *Bull. Soc. Hist. Nat. Metz* **28**: 87-114.
- 1913c. Glanures diptérologiques. *Bull. Soc. hist. nat. Metz* **28**(3-4): 45-55.
- MAMAEV B.M., ZAITZEV A.I. 1997. New genus and species of free-developing gall midges of the subfamily Porricondyliinae from Somalia (Diptera, Cecidomyiidae). *J. Ukr. ent. Soc.* **3**(2): 5-13.
- SKUHRAVÁ M. 1973. *Monographie der Gallmückengattung Clinodiplosis Kieffer, 1894 (Cecidomyiidae, Diptera)*. 82 pp.