

ON THE HIGHER CLASSIFICATION OF CHELISOCHIDAE (INSECTA : DERMAPTERA) WITH A CHECK LIST OF SPECIES

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INTRODUCTION

Family Chelisochoidea is mainly characterised by the second tarsal segment narrowed apically, extending below the third approximately up to the middle.

Srivastava (1987) on the basis of the syntype Male of *Chelisoches doriae* Bormans, 1900, treated it as a synonym of *Lobophora superba* Dohrn, 1865. He pointed out that the costal fold is prominent but lacks costal carina. In the present paper, this species is placed under the genus *Chelisocheilla* Verhoeff, subfamily Chelisocheillinae Steinmann, 1975. *Chelisocheilla* is the type genus of Chelisocheillinae, and since it lacks costal carina of elytra, the Chelisocheillinae is treated as a synonym of Chelisochoidea. The genus *Chelisocheilla*, however, is retained in being distinct from others by having stout build, metallic sheen on body, elytra with humeral angles very prominent and hind tarsi not sulcate or deplanate at apex.

A new subfamily Kinellinae is proposed for the genus *Kinesis* Burr, 1907 which is characterised by the medium size (12.0 mm approx.), elytra abbreviated with a distinct ridge along the costal margin.

Amongst the genera included under Chelisochoidea, the *Adiathus* Burr, 1907 now includes only the type species viz., *Chelisoches shelfordi* Burr, 1901, from Borneo & Sikkim and is different from other species (now transferred to the genus *Adiathella* Brindle, 1970) in having punctate elytra and densely pubescent body.

Sizochelisoches Steinmann, 1987 and *Schizoproneus* Steinmann, 1987 are treated as synonym of *Chelisoches* and *Proneus*, respectively. The above two synonymised genera were erected by splitting above two genera, on the basis of male parameres having vertical cleft or indentation, recognised earlier on morphological characters alone. The shape of paramere, as whole, in Forficulidae is not of much significance except in certain cases for separating closely related species along with other external features.

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Key to the various taxa of *Chelisochidae*

- 1(2). Elytra along the costal margin with a raised ridge; wings concealed
 Kinellinae *subfam. n.*
 Kinesis Burr, 1907
- 2(1). Elytra along the costal margin without any ridge; wings normally well developed.....
 Chelisochinae Burr, 1907 (= *Chelisochellinae* Steinmann, 1975—**Syn. n.**)
- 3(6). Hind tibiae neither flattened nor sulcate at extreme apex
- 4(5). Build robust, glabrous; elytra and wings smooth, former with humeral angle prominent
 *Chelisochella* Verhoeff, 1902
- 5(4). Build not so robust, hairy; elytra and wings punctulate, former with humeral angles not
 prominent *Adiathetus* Burr, 1907
- 6(3). Hind tibiae flattened or sulcate at extreme apex or in apical $\frac{1}{4}$ to $\frac{1}{2}$
- 7(14). Hind tibiae flattened or sulcate at extreme apex
- 8(9). Elytra short, posterior margin obliquely truncate; wings absent; forceps, in males, undulate
 with three teeth internally, forceps, in females, with long, slender branches; Male parameres
 wide apically *Tauropygia* Brindle, 1970
- 9(8). Elytra longer, posterior margin not obliquely truncate; wings visible; male forceps not as
 above
- 10(11). Pronotum transverse; hind tarsi with segments stout, less compressed.....
 *Euenkrates* Rehn, 1927
- 11(10). Pronotum longer than broad; hind tarsi with segments slender, compressed
- 12(13). Male and females forceps similar in shape and length, former with teeth internally;
 pygidium, in both sexes, posteriorly excised medially but in females narrower
 *Gressittolabis* Brindle, 1970
- 13(12). Male and female forceps dissimilar in shape and length; pygidium in both sexes normally
 sexually diamorphic *Adiathella* Brindle, 1970
- 14(7). Hind tibiae sulcate in apical $\frac{1}{4}$ to $\frac{1}{2}$
- 15(16). Hind tibiae sulcate in apical $\frac{1}{4}$; 1st tarsal segment longer than 3rd segment
 *Exypuus* Burr, 1907
- 16(15). Hind tibia sulcate in apical $\frac{1}{3}$ to $\frac{1}{2}$
- 17(18). Long and slender build; elytra abbreviated, wings wanting *Solenosoma* Burr, 1907
- 18(17). Build stout; elytra wing well developed
- 19(20). Body strongly depressed; tibiae depressed *Laprophorella* Mzöberg, 1924
- 20(19). Body not strongly depressed; tibiae compressed

- 21(22). Elytra and wings punctured, pubescent; male papameres deplanate or projecting externally
 *Hamaxas* Burr, 1907
- 22(21). Elytra and wings smooth, glabrous; male parameres feebly dilated in middle or narrow
- 23(24). Distal segments of antennae long and slender, elytra with yellow markings, wings yellow
 *Proreus* Burr, 1907 (= *Schizoproreus* Steinmann, 1987-Syn. n)
- 24(23). Distal segments of antennae broad and short; elytra and wings unicolourous, dark
 *Chelisoches* Scudder, 1876 (= *Schizochelisoches* Steinmann, 1987-Syn. n)

CHECKLIST OF TAXA

FORFICULOIDEA

CHEISOCHIDAE

KINELLINAE Subfam. n.

Type genus : *Kinesis* Burr, 1907.

Kinesis Burr, 1907

Type species : *Chelisoches punctulatus* Burr, 1897.

List of species :

K. mounseyi Burr, 1916—Philippine Isls : Mindanao

K. punctulata (Bur, 1897)—Indonesia : Java & Celebes

K. significus Steinmann, 1993—Indonesia : Sulawesi Is.

K. wernerii Srivastava, 1978—Philippine Isls, Mindanao.

CHELISOCHINAE Burr, 1907

(= CHLISOCHELLINAE Steinmann, 1987—Syn. n.)

Type genus : *Chelisoches* Scudder, 1876.

Chelisochella Verhoeff, 1902

Type species : *Lobophora superba* Dohrn, 1865.

Known by the type species distributed in the Oriental Region.

Adiathetus Burr, 1907

Type species : *Chelisoches shelfordi* Burr, 1901.

Now this genus contains only the type species in having the body hairy; elytra and wings punctulate and hind tarsi hardly sulcate apically. All other species included under this genus earlier are transferred to *Adiathella* Brindle, 1970.

***Tauropygia* Brindle, 1970**

Type species : *Tauropygia tridentata* Brindle, 1970.

Only type species, distributed in Solomon Islands : Bougainville, is included. The taxonomic position of this genus is doubtful according to Steinmann (1989).

***Euenkrates* Rehn, 1927**

Type species : *Sphingolabis variegata* Kirby, 1891.

List of Species :

E. boesmani Steinmann, 1981—Sumatra

E. simplex Ramamurthi, 1967—Bismark Isl : New Ireland.

***Gressitolabis* Brindle, 1970**

Type species : *Gressitolabis delicatulus* Brindle, 1970.

List of species :

G. delicatulus Brindle, 1970—Solomon Isls : Bougainville

G. gurneyi Brindle, 1970—Solomon Isls : Bougainville.

***Adiathella* Brindle, 1970**

Type species : *Adiathella lingua* Brindle, 1970.

List of species :

A. dravidius (Burr, 1910)—India

A. elegans (Bormans, 1900)—Sumatra and Java

A. glaucopterus (Bormans, 1888)—India, Myanmar, China (Yunnan) and Vietnam

A. incisa Brindle, 1970—Solomon Isls : Guadalcanal

A. lingua Brindle, 1970—Solomon Isls : Guadalcanal

A. metallicus (Srivastava, 1985)—India (Arunachal Pradesh)

A. nigrocastaneous (Burr, 1910)—India (south) and Malay Peninsula

A. philippinensis Srivastava, 1976—Philippine Isls : Mindanao

A. phoenix (Steinmann, 1993)—India (South)

A. proreoides (Ramamurthi, 1967)—Bismarck Isls : New Britain

A. spinosa Brindle, 1970—Solomon Isls : New Georgia Group

A. tenebrator (Kirby, 1891)—India (South) and Borneo

***Exypnus* Burr, 1907**

Type species : *Chelisoches pulchripennis* Bormans, 1883.

*List of species :**E. chinensis* Steinmann, 1974—China*E. koorgensis* Hebard, 1923—India and Malaysia*E. pulchripennis* (Bormans, 1883)—Oriental Region and New Guinea*E. nathani* Srivastava—in press—India : Karnataka, Coimbatore, 1400 ft.***Solenosoma* Burr, 1907**Type species : *Auchenomus birmanus* Bormans, 1888.

This genus is known by its type species only, originally described from Myanmar and subsequently reported from India (India : Assam) and China (Yunnan).

***Laprophorella* Mzöberg, 1924**Type species : *Mecomera kervillei* Burr, 1905.

This genus is known by its type species only distributed in India (Assam and West Bengal) and Java.

***Hamaxas* Burr, 1907**Type species : *Chelisoche feae* Bormans, 1894.*List of species :**H. bidentatus* Ramamurthi, 1965—South India*H. crassus* Borelli, 1926—Philippine Isls : Mindoro*H. delicatulus* (Burr, 1911)—Sri Lanka*H. dohertyi* (Burr, 1899)—Celebes*H. feae* (Bormans, 1894)—Oriental Region, New Guinea & New Zealand*H. fuscus* (Borelli, 1927)—Sumatra*H. kempfi* (Burr, 1913)—India (Arunachal Pradesh)*H. kozlovi* Semenov & Bey-Bienko—Myanmar, China (Yunnan) and Mangolia*H. melanocephalus* (Dohrn, 1865)—India, Myanmar, Vietnam and Java*H. nigrorufus* (Burr, 1902)—Philippine Isls, New Guinea and Micronesia*H. pusillus* (Borelli, 1918)—Philippine Isls.*H. semiluteus* (Bormans, 1899)—Java*H. singhi* Kapoor, 1966—India*H. tenebrosus* Brindle, 1968—Philippine Isls : Siargao*H. varicornis* (Bormans, 1903)—Celebes*H. versicolor* Borelli, 1923—Philippine Isls : Luzon*H. chandrai* Srivastava, 2001—India : Andaman Isls.

Proreus Burr, 1907

(= *Schizoproreus* Steinmann, 1987—Syn. n.)

Type species : *Forficula simulans* Stål, 1860.

List of species :

- P. abdominalis* Ramamurthi, 1965—South India
P. biratnagarensis Kapoor, Malla & Shah, 1978—Nepal
P. chatterjeei Kapoor, Bharadwaj & Banerjee, 1978—India
P. coalescens (Borelli, 1927)—Philippine Isls and Sumatra
P. coloratus (Burr, 1906)—New Guinea
P. corporaali Boeseman, 1954—Sumatra
P. cunctator Burr, 1911—India
P. dentatus Srivastava, 1976—Philippine Isls.
P. duroides Hebard, 1933—Australia Queensland
P. fletcheri Hebard, 1923—India (NE)
P. fuscipennis (Haan, 1842)—Sumatra, Java, Malaysia and New Guinea
P. horsfieldi (Kirby, 1891)—Java
P. inermis Bey-Bienko, 1959—China : Yunnan
P. laetior (Dohrn, 1865)—Celebes, New Guinea, Bismarck Isls and Solomon Isls
P. ledyardi Srivastava, 1990—Philippine Isls Los Banos
P. longiforceps Ramamurthi, 1962—South India
P. ludekingi (Dohrn, 1865)—Oriental Region
P. minor (Caudell, 1904)—Philippine Isls : Luzon
P. orpheus Steinmann, 1993—Bismarck Isls : Chimbu
P. persuasus Steinmann, 1993—Borneo
P. ramamuarthii Kapoor, 1967—South India
P. ritsemae (Bormans, 1883)—Oriental Region
(= *P. shaffii* Bharadwaj and Kapoor, 1967)
P. simulans (Stål)—Oriental Region
P. sobrius (Bormans, 1985)—Sumatra and Borneo
P. tezpurensis (Srivastava, 1969)—India : Assam
P. torrevilasi Srivastava, 1976—Philippine Isls : Mindanao
P. unidentatus Bey-Bienko, 1970—China : Yunnan
P. variopictus (Bormans, 1900)—Oriental Region
P. weissi (Burr, 1904)—Philippine Isls : Mindanao, Vietnam, China and India (Arunachal Pradesh)

Chelisoches Scudder, 1876(= *Lobophora* Serville, 1839)(= *Enkrates* Burr, 1907)(= *Kleiduchus* Burr, 1911)(= *Schizochelisoches* Steinmann, 1987—Syn. n.)Type species : *Forficula morio* Fabricius, 1775.*List of species :**C. annulata* Burr, 1906—New Guinea and Celebes*C. ater* Bormans, 1879—North Australia*C. australicus* (Guillon, 1841)—New Guinea and North Australia*C. brevipennis* (Borelli, 1923)—Philippine Isls, Malaysia and Sumatra*C. calopteryx* Günther, 1929—New Guinea and Solomon Isls*C. cheesmanae* Hincks, 1952—New Hebrides*C. chopardi* Hincks, 1951—Madagascar*C. diadonatus* Ramamurthi, 1967—Bismarck Islands*C. flavipennis* (Fabricius, 1793)—West Africa*C. formosanus* (Burr, 1912)—Taiwan*C. handschini* Günther, 1934—North Australia*C. kimberleyensis* Mzöberg, 1913—Australia*C. malagachus* Bormans, 1903—Madagascar*C. morio* (Fabricius, 1775)—Oriental and Australian Regions*C. paravicinii* Günther, 1993—Solomon Isls*C. persimilis* Menozzi, 1938—Sumatra*C. semirufus* Borelli, 1926—Sumatra, Mentawai Isl, Java and Malaysia*C. variegatus* (Burr, 1917)—Vietnam**SUMMARY**

A taxonomic list of various taxa of Chelisochidae is provided besides giving a key to subfamilies and genera. Subfamily *Chelisocheinae* Steinmann, 1975 is synonymised under *Chelisochinae* Burr, 1907. A new subfamily *Kinellinae* with *Kinesis* Burr, 1907 as the type genus is proposed. *Chelisochea* Verhoeff, 1902, is transferred to *Chelisochinae*. The genus *Adiathetus* Burr, 1907 now contains only the type species and other species are transferred to *Adiathella* Brindle, 1970.

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