

## Revision of the Eurybrachidae (VII).

### The Australian genera *Hackerobrachys* and *Fletcherobrachys* (Hemiptera: Fulgoromorpha: Eurybrachidae)

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#### Abstract

The Australian genera of Eurybrachidae (Hemiptera, Fulgoromorpha) *Hackerobrachys* CONSTANT n. g. and *Fletcherobrachys* CONSTANT n. g. are described respectively for *Olonia viridiventris* STÅL, 1863 and *Platybrachys stillata* BERGROTH, 1907. The new combinations *Hackerobrachys viridiventris* (STÅL, 1863) n. comb. and *Fletcherobrachys stillata* (BERGROTH, 1907) n. comb. are subsequently proposed. *Olonia nigroapicata* JACOBI, 1928 is proposed as synonym of *Fletcherobrachys stillata* (BERGROTH, 1907). The male genitalia are illustrated and photos of habitus, a distribution map and biological data are provided with the description of the species. The nymph of *H. viridiventris* is illustrated and unique case of sexual dimorphism in the shape of the median tibia is reported in *F. stillata*.

#### Résumé

Les genres australiens d'Eurybrachidae (Hemiptera, Fulgoromorpha) *Hackerobrachys* CONSTANT n. g. et *Fletcherobrachys* CONSTANT n. g. sont décrits respectivement pour *Olonia viridiventris* STÅL, 1863 et *Platybrachys stillata* BERGROTH, 1907. Les nouvelles combinaisons *Hackerobrachys viridiventris* (STÅL, 1863) n. comb. et *Fletcherobrachys stillata* (BERGROTH, 1907) n. comb. sont donc proposées. *Olonia nigroapicata* JACOBI, 1928 est proposé comme synonyme de *Fletcherobrachys stillata* (BERGROTH, 1907). Les genitalia mâles sont illustrés et des photos d'habitus, une carte de répartition ainsi que des renseignements sur la biologie accompagnent la description des espèces. La larve de *H. viridiventris* est illustrée et un exemple unique de dimorphisme sexuel affectant la forme du tibia médian est rapporté chez *F. stillata*.

**Keywords:** Australian region, Eurybrachidae, revision, *Hackerobrachys* n. g., *Fletcherobrachys* n. g.

#### Introduction

This paper is the seventh one of a series intended to revise the family Eurybrachidae.

This study starts with the one-by-one revision and redefinition of the genera and should result in a proposal of a more natural classification in the family. This will also allow tentative understanding of the phylogeny and zoogeography of the family.

#### Historical review

##### *Olonia viridiventris*

In 1863, STÅL described the species *viridiventris* from Moreton Bay (Queensland) and placed it in his genus *Olonia* which he had described in 1862 with the following distinctive features: (1) hind tibiae with 3 lateral spines, (2) frons transverse with sides angulate, (3) pro- and mesonotum together broader than long, (4) antennae short, not surpassing the eyes.

KIRKALDY (1906) mentioned the species in a paper on Australian Eurybrachidae in which he also erroneously stated that all Australian Eurybrachidae are probably *Eucalyptus* feeders.

In his very interesting note of 1924, HACKER stated that the species is rather local and feeds on *Acacia cunninghami* (Mimosaceae) but he had not been able to recognize the eggs and nymphs as 2 other species of Eurybrachidae, *Gelastopsis insignis* KIRKALDY 1906 (erroneously named *transversa* WALKER, 1858 in HACKER, 1924, see also CONSTANT, 2005) and *Dardus abbreviatus* (GUÉRIN-MÉNEVILLE, 1834) are found on the same host plant. He also stated that *viridiventris* looks more like a *Platybrachys* than like an *Olonia* in the shape of the tegmina but left the species in *Olonia* as the thorax is wider than the length of the pro- and mesonotum together.

##### *Platybrachys stillata*

In 1907, BERGROTH described *Platybrachys stillata* from central Australia. The reason of the placement of this species in the genus *Platybrachys* STÅL, 1859 remains unclear as the main distinctive feature given by STÅL for this genus is the pro- and mesonotum as broad as long taken together, while in *stillata* they are shorter than broad, which makes the species more likely to be placed in the genus *Olonia* STÅL, 1862.

Later in 1928, JACOBI described the same species under *Olonia nigroapicata* for one specimen collected in Kimberley district [Western Australia] by the Swedish Scientific Expedition of Dr. E. Mjöberg to Australia (1910-1913).

METCALF (1956) placed both taxa in the Platybrachyinae, Platybrachyini [main features of the Platybrachyini

as defined by SCHMIDT (1908): (1) clavus of the tegmina closed, (2) no infra-ocular spine].

The type of *Eurybrachys rubicunda* WALKER, 1851, the type-species of the genus *Olonia*, has been examined and it seems evident that *viridiventr*is and *stillata* cannot be placed in the same genus as *rubicunda*, e.g.: (1) tegmina are nearly flat in *stillata* and *viridiventr*is, convex in *rubicunda*, (2) first hind tarsomere bears a pad of microsetae in *rubicunda*, not in *stillata* and *viridiventr*is, (3) male genitalia are very different, with gonostyli strongly modified, spinose, and phallic complex reduced in *rubicunda* and closely related species... furthermore, no sexual dimorphism has been observed on tibia II of *rubicunda* and *viridiventr*is while it is present in *stillata*, and the frons is much more convex in *viridiventr*is than in *rubicunda* and *stillata*. For those reasons, both species are removed from their original genera and placed in genera of their own.

## Materials and methods

The available types have been studied and as much material as possible has been examined. The genitalia of all the males have been checked.

The genitalia are extracted after boiling the abdomen in glacial acetic acid for a few minutes. The pygofer is separated from the abdomen and placed for about one hour in a 10% solution of potassium hydroxide (KOH) at about 100°C, with some drops of saturated aqueous Chlorazol black solution. It is then placed in glycerin.

For routine identification, only the acetic acid boiling is necessary as the structures on the phallic complex are directly visible after moving aside the gonostyli. The genitalia are placed under the specimen, dry (in a gelatin capsule or glued on a cardboard label) or in glycerin.

The description of the female genitalia follows BOURGOIN (1993) with some additions from the study of SOULIER-PERKINS (1997) and SOULIER-PERKINS & BOURGOIN (1998) on the family Lophopidae.

Lectotypes and a neotype have been designated. For the labels of the types, each single label is limited by square brackets.

The species are redescribed and the genitalia as well as other characters useful for identification are figured. Distribution maps produced by the software *CFF* (BARBIER & RASMONT, 2000) and photos of habitus are also provided. The few indications about the biology of the species are given.

The following acronyms are used for the measurements (measurements are taken as in CONSTANT, 2004): BF, breadth of the frons – BT, breadth of the thorax – BTg, breadth of the tegmen – BV, breadth of the vertex – LF, length of the frons – LM, length of the mesonotum – LP, length of the pronotum – LT, total length – LTg, length of the tegmen – LV, length of the vertex.

Acronyms used for the collections (name of the curator in parentheses).

AMS: Australian Museum, Sydney, New South Wales, Australia (M. Moulds)

ANIC: Australian National Insect Collection, CSIRO, Canberra, Australian Capital Territory, Australia (T.A. Weir).

ASCT: Agricultural Scientific Collections Unit, Orange Agricultural Institute, Orange, New South Wales, Australia (M.J. Fletcher)

BMNH: British Museum of Natural History, London, United Kingdom (M. Webb)

BPBM: Bernice P. Bishop Museum, Honolulu, Hawaii, U.S.A. (A. Ramsdale)

INHS: Illinois Natural History Survey Insect Collection, Champaign, Illinois, U.S.A. (Chris Dietrich & Colin Favret)

IRSNB: Institut royal des Sciences naturelles de Belgique, Bruxelles, Belgium (P. Grootaert)

LBOB: Lois B. O'Brien private Collection, Tucson, Arizona, U.S.A.

MAMU: Macleay Museum, University of Sydney, Sydney, New South Wales, Australia (M. Humphrey)

MJFC: Murray J. Fletcher private collection, Orange, New South Wales, Australia

MVMA: Museum of Victoria, Melbourne, Victoria, Australia (K. Walker)

NHRS: Naturhistoriska Riksmuseet, Stockholm, Sweden (B. Viklund)

OSU: Ohio State University, Columbus, Ohio, U.S.A. (P.W. Kovarik)

QDPI: Queensland Department of Primary Industries, Indooroopilly, Queensland, Australia (J. Donaldson)

QM: Queensland Museum, South Brisbane, Queensland, Australia (G. Monteith)

SAM: South Australian Museum, Adelaide, South Australia, Australia (J. Forrest)

UQIC: University of Queensland, St Lucia, Queensland, Australia (G. Daniels)

USNM: National Museum of Natural History, Washington D.C., U.S.A. (S. McKamey)

WAMP: Western Australian Museum, Perth, Western Australia, Australia (T. Houston)

## Taxonomic part

### Description of the taxa

#### Genus *Hackerobrachys* CONSTANT, 2006 n. g.

Type-species: *Olonia viridiventr*is STÅL, 1863, by original designation and monotypy.

ETYMOLOGY: Name formed by the juxtaposition of the words Hacker, in memory of the late Henry Hacker who published his interesting field notes on Australian Eurybrachidae in 1924, and *brachys* (Greek word meaning

“short”) which is a common ending of the names of the genera among the family Eurybrachidae. Gender arbitrarily feminine, following the use in the family.

**DIAGNOSIS:** Medium sized, blackish brown coloured. Differs from all other Australian genera by the following combination of characters: strongly convex, twice as broad as long frons; legs slender; first hind tarsomere without pad of setae ventrally; tegmina flat; hind wings unicolorous, blackish brown; thorax broader than pro- and mesonotum together. Australia.

**DESCRIPTION:** *General coloration:* mainly blackish brown.

*Head:* as broad as thorax; vertex 3.5 - 5 times broader than long, shorter in middle than on sides, slightly concave with fore and hind margins curved and slightly carinate; frons around 2 times broader than long, strongly convex, with disc slightly wrinkled; clypeus short, carinate near apex, reaching fore trochanter; labium reaching median trochanter; last segment short, little longer than broad, narrower than penultimate; no infra-ocular spine; ocelli absent; antennae short, not surpassing lateral angle of frons; scape short, pedicel subglobular.

*Thorax:* about 1.3 times broader than length of pro- and mesonotum together; pronotum smooth with fore margin carinate and hind margin sinuate; mesonotum with longitudinal carina on each side of disc.

*Tegmina:* nearly flat, subrectangular, about 2.2 times longer than broad; clavus closed, truncate apically, reaching 3/4 of tegmen length.

*Venation:* *C* slightly distinct; *Sc* & *R* with short common stem; first fork of *M* little beyond *Sc-R* separation; first fork of *Cu* at level of *A1-A2* reunion; *A1* & *A2* fused at about 2/3 of clavus length.

*Hind wings:* well developed, about as broad as tegmina; apex truncate; anal area well developed; reaching apex of tegmina at rest; blackish without white marking.

*Legs:* fore and median femur and tibia dorso-ventrally flattened, elongate, not foliaceous; tibia III with 3 lateral and 9 apical spines; first hind tarsomere elongate; ventral face without pad of microsetae, bearing a group of 12 spines near apex.

*Genitalia* ♂: pygofer with large baso-lateral processes; anal tube dorso-ventrally compressed; gonostyli fused ventrally, bearing elongate, dorso-anterior process; phallic complex with elongate, sclerified process on each side of median, partly membranous part.

*Genitalia* ♀: anal tube elongate, curved dorso-posterad, narrow before, and lanceolate and v-shaped in cross-section after anus, laminate ventrally; gonoplags unilobous, longer than high, nearly surpassed by anal tube; gonapophysis IX large, projecting postero-dorsad up to anal tube, rounded apically; gonocoxae VIII like inflated, subcylindrical pouch; gonapophysis VIII large, dorso-ventrally flattened, rounded at apex; sternite VII strongly modified, prolonged posteriorly in a large lamina with strong, transversely oval emargination in middle of hind margin; gonapophysis VIII visible from under in emar-

gination, surpassed on each side by sternite VII; anterior vagina positioned ventrally, weakly sclerified, nearly as long as posterior vagina; spermatheca attached apically; posterior vagina subtriangular, concave ventrally, attenuated at apex, bearing 5 - 6 weak ridges on attenuated part; bursa copulatrix oval-shaped, larger than posterior vagina, with barely distinct ornamentation on walls.

*Sexual dimorphism:* no evident sexual dimorphism has been observed in the genus.

*Size:* about 9 - 11 mm

*Distribution:* Australia: Queensland and New South Wales.

**BIOLOGY:** The only known species of the genus seems to be associated with the tree genus *Acacia* (Mimosaceae).

***Hackerobrachys viridiventris* (STÅL, 1863) n. comb.**

Figs. 1 A-E, 2, plate 1 A-D, 2 A-D.

*Olonia viridiventris* STÅL, 1863: 250.

KIRKALDY, 1906: 445 - HACKER, 1924: 40 & Fig. 13 - METCALF, 1956: 66.

**ETYMOLOGY:** *viridiventris* (Latin), from *viridis* = green and *venter - ventris* = belly. The name is assumed to refer to the colour of the abdomen.

**TYPES EXAMINED:** - LECTOTYPE ♂ of *Olonia viridiventris* STÅL, 1863 **present designation:** [Moreton Bay] [Stevens] [n. sp. (*it has not been possible to decipher the rest of the label*)] [Lectotype ♂ *Olonia viridiventris* Stål, 1863, J. Constant des., 2006] [*Hackerobrachys viridiventris* (Stål, 1863) ♂, Dét. Jérôme Constant 2006] - *dissected, genitalia in glycerine; left tegmen missing* (NHRS).

**OTHER MATERIAL EXAMINED** (19 ♂, 22 ♀, 4 ex.) - AUSTRALIA: **NEW SOUTH WALES:** 1 ♀: Eastwood, 28.XI.1981, S. Martin [ASCT]; 1 ♂: Iluka, Clarence River, 25.II.1965, D.K. McAlpine [AMS]; 4 ♂, 2 ♀: Towler's Bay, W Pittwater, 27-29.I.1973, M.J. Fletcher [MJFC; 1 ♂, 1 ♀ IRSNB] - **QUEENSLAND:** 1 ♀: Biggenden, Bluff Range foothills, 01-07.I.1972, H. Frauca, [ANIC]; 1 ♀: Bribie Island, XI.1921 [SAM]; 1 ♀: Brisbane, 01.VIII.1949, R. Moller [UQIC]; 2 ♂, 2 ♀: Brisbane, 11.II.1922, H. Hacker [USNM]; 2 ♂, 2 ♀: idem, 14.II.1922 [USNM]; 1 ♂, 2 ♀, 1 ex.: idem [QM]; 1 ♂: idem [BMNH]; 1 ex.: idem, 20.IV.1922 [QM]; 1 ex.: idem, 23.III.1925 [QM]; 1 ♂: idem, 29.IV.1922 [BMNH]; 1 ♀: Brisbane, 14-26.II.1986, ex Malaise trap, J. Grimshaw & K. Sadler [QDPI]; 1 ♂: Brisbane, 24.I.1965, leg H.A. Rose [UQIC]; 1 ♀: Brisbane, 30.III.1922 [SAM]; 1 ♂: Brisbane, VII.1915 [USNM]; 2 ♀: Brisbane, Yeerongpilly DPI, 17.II-05.III.1984, B.K. Cantrell [QDPI]; 2 ♀: Gayndah, I.1935 [QDPI]; 1 ♀: Miva, V.1951, Lipsett [UQIC]; 1 ♂, 1 ex. (only right hind wing left): Mount Cootha, I.1925, H. Hacker [USNM]; 1 ♂: Mount Glorious, 15.I.1963, J. Bryan, [BPBM]; 1 ♀: Nambour, 26.VII.1959, H.G.G. [UQIC]; 1 ♂: Nudgee,

25.II.1922, H. Hacker [USNM]; 1 ♀: Palmwoods, 26.II.1926 [SAM]; 1 ♂: Southport, 26.IX.1926 [SAM]; 1 ♀: Yarraman, 20.IV.1957, S. Sekhon [UQIC] - *No LOCALITY DATA*: 1 ♂: 15.II.1899, Herbert Osborn Coll. [OSU].

*Note*: it seems interesting to mention that 24 out of the 45 specimens examined have been collected by Henry Hacker who had identified a host-plant of the species (HACKER, 1924).

**DIAGNOSIS**: Only species of the genus.

**DESCRIPTION**: LT: ♂ (n = 9): 9.6 mm (8.9 to 10.9); ♀ (n = 10): 10.0 mm (9.0 to 10.8).

*Head*: frons, vertex and basal 1/2 of clypeus greenish yellow to bright red; apical 1/2 of clypeus, labium and often posterior 1/2 of vertex brown; ratio BV/LV = 3.5 - 4.6; BF/LF = 2.1 - 2.2.

*Thorax*: brown; ratio LP+LM/BT = 0.78 - 0.80.

*Tegmina*: brown, darker on costal 1/3; short, transverse, white line at apico-costal angle; often short, transverse white line at apico-sutural angle, always narrower than apico-costal line; ratio LTg/BTg = 2.17 - 2.22.

*Hind wings*: uniformly blackish brown.

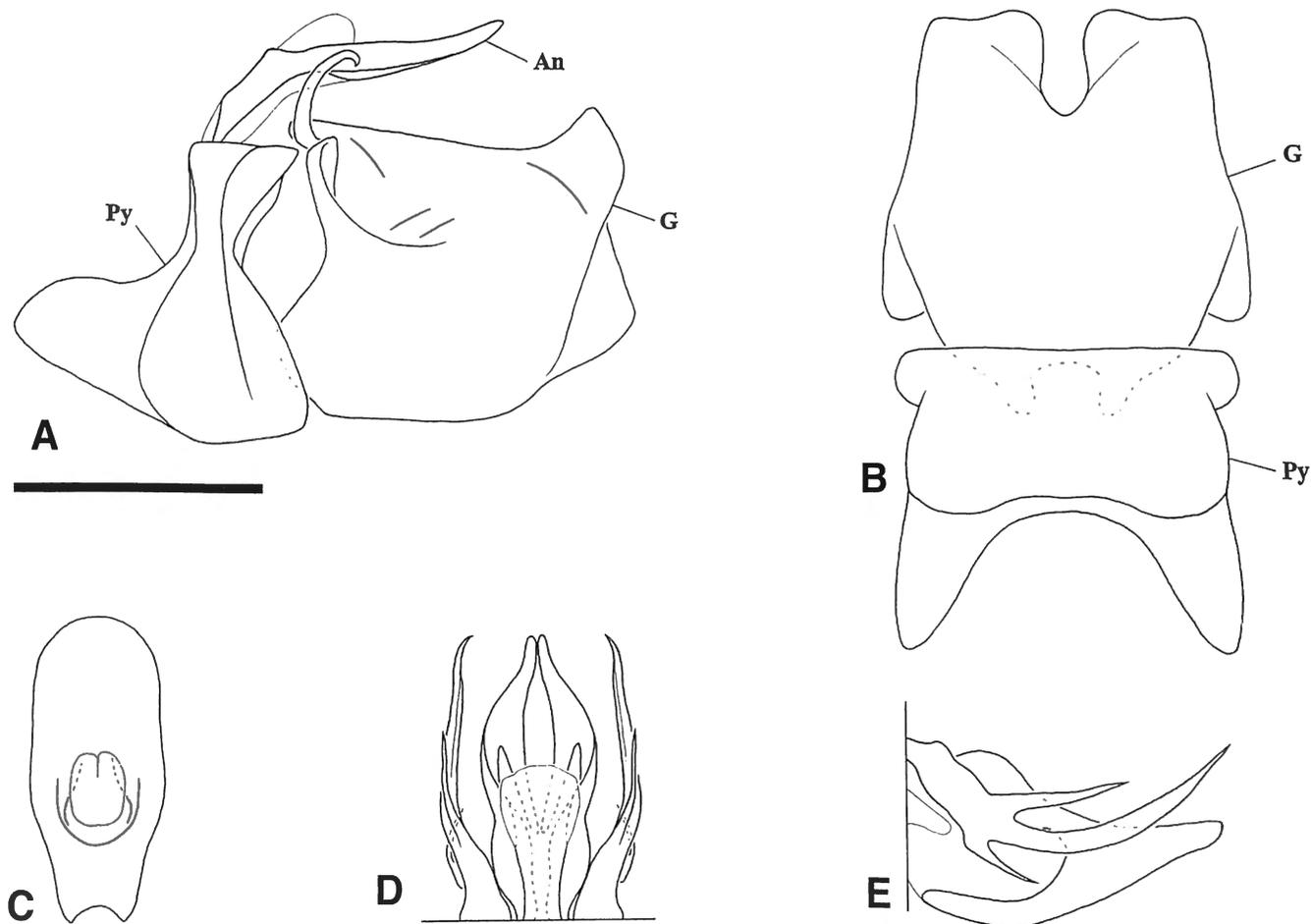
*Legs*: all legs brown; tibiae I and II roundly truncate apically.

*Abdomen*: bluish green dorsally, yellowish ventrally.

*Genitalia* ♂: pygofer about as high as long basally, constricted in middle in lateral view; gonostyli fused ventrally on basal 2/3, convex, produced dorsally at apex, with strong, dorso-anterior impression and curved process at dorso-anterior angle; anal tube dorso-ventrally flattened, elongate, rounded apically, lateral margins subparallel on apical 2/3; phallic complex: see Figs 1 D & E.

*Notes*: - fresh specimens are covered with greyish brown, dusty secretion.

- abdomen is orangish in some collection specimens. It is possibly artifact due to mode of collect and conservation (e.g. in ethanol).



Figs. 1 A-E — *Hackerobrachys viridiventris*. Genitalia ♂. **A.** pygofer, anal tube and gonostyli, left lateral view (An – anal tube; G – gonostyli; Py – pygofer). **B.** pygofer and gonostyli, ventral view. **C.** anal tube, dorsal view. **D.** phallic complex, dorsal view. **E.** phallic complex, left lateral view. Scale 1mm.

**BIOLOGY:** The species seems to be restricted to the Eastern part of Australia, with a distribution East of the Great Dividing Range, from the level of Fraser Island southwards nearly to Sydney.

It seems to be associated with trees of the genus *Acacia* (Mimosaceae): it has been collected on *Acacia cunninghami* HOOK (HACKER, 1924). It has also been collected with interception traps in Brisbane.

According to the observations of Peter, Sandy and Tony Chew around Brisbane (Karawatha Park) from December 2004, the species is not scarce and can be found on its host-plants: *Acacia leiocalyx* (DOMIN) PEDLEY subsp.

*leiocalyx* PEDLEY and *Acacia fimbriata* A. CUNN. ex G. DON at that place, in a mixed forest of diverse species of *Eucalyptus* and *Acacia*.

The species seems to be present all year round, while 33/45 (73 %) of the specimens examined have been collected in January and February. It is anyway not formally concluded that the species would be more abundant in those months as most of those specimens are from series collected by H. Hacker, who had identified one host-plant and it is not known if Hacker had tried to collect the species at other periods.



Plate 1 A-D — *Hackerobrachys viridiventris*. A-B. adult on a branch of *Acacia* sp. C-D. nymphs on twig of *Acacia* sp. (Photos Peter Chew, Brisbane, Australia).

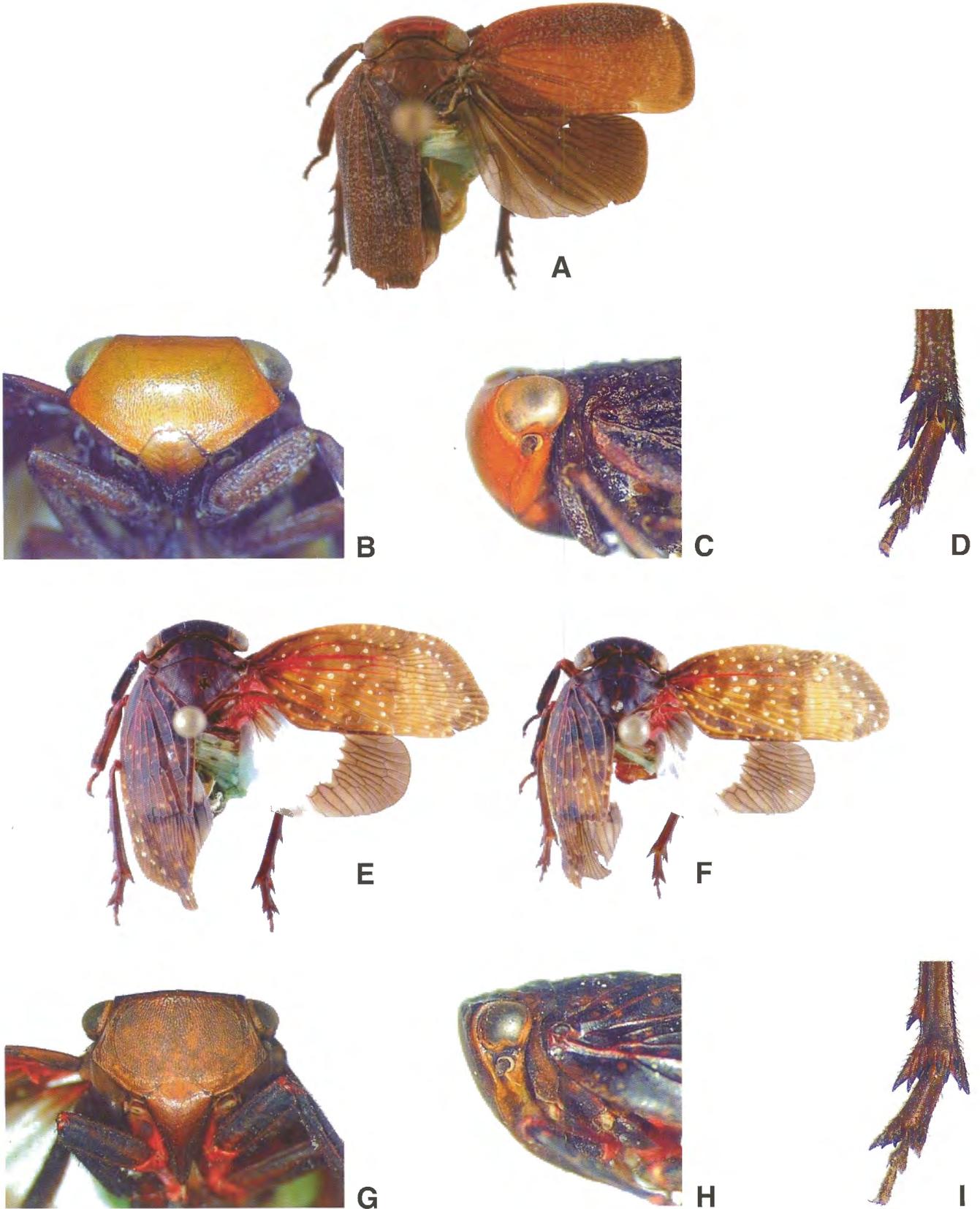


Plate 2 A-I — A-D. *Hackerobrachys viridiventris*. A. habitus ♀, dorsal view (LT = 10 mm). B. frons, normal view. C. head, lateral view. D. right hind tarsus, ventral view. E-I. *Fletcherobrachys stillata*. E-F. habitus, dorsal view. E. male (LT = 11 mm). F. female (LT = 13 mm). G. frons, normal view. H. head, lateral view. I. right hind tarsus, ventral view.



- *Fletcherobrachys stillata* (Bergroth)  
 ▲ *Hackerobrachys viridiventris* (Stal)

Fig. 2 — Distribution of *Hackerobrachys viridiventris* and *Fletcherobrachys stillata*.

#### Genus *Fletcherobrachys* CONSTANT, 2006 n. g.

Type-species: *Platybrachys stillata* BERGROTH, 1907, by original designation and monotypy.

ETYMOLOGY: Name formed by the juxtaposition of the words Fletcher, in honour of Dr. Murray J. Fletcher (ASCT), the Homoptera specialist whose great help is here acknowledged, and *brachys* (Greek word meaning “short”) which is a common ending of the names of the genera among the family Eurybrachidae. Gender arbitrarily feminine, following the use in the family.

DIAGNOSIS: Medium sized, dark coloured. Differs from all other Australian genera by the following combination of characters: vertex more than 4 times broader than long; clavus closed; hind wings partly white; apical process on median tibiae of females. Australia.

DESCRIPTION: *General coloration*: brownish black and red; hind wings partly white.

*Head*: about as broad as thorax; vertex 4.5-4.8 times broader than long, slightly concave with fore and hind margins curved and carinate; frons twice broader than

long, convex; disc longitudinally wrinkled; dorsal margin nearly straight in normal view; clypeus reaching fore trochanters; labium reaching hind trochanters, with last segment longer than broad, slender and acuminate, narrower and shorter than penultimate; small hump between ventral margin of eye and frons; no infra-ocular spine; ocelli absent; antennae short, slightly surpassing lateral projection of frons but not eyes, not visible in dorsal view.

*Thorax*: about 1.2 times broader than length of pro- and mesonotum together; pronotum with fore margin carinate and second carina just behind, parallel to fore margin; group of obsolete tubercles on each side of disc; mesonotum without carina; pro- and mesonotum wrinkled.

*Tegmina*: nearly flat, about 2.3 times longer than broad; costal margin sinuate, sutural margin nearly straight; apex roundly sub-cuneiform; clavus closed, truncate apically.

*Venation*: *C* obsolete; *Sc* & *R* separated close to base, with short common stem; first fork of *M* at level of or little beyond *Sc-R* separation; *A1* & *A2* fused at about 3/4 of clavus.

*Hind wings*: well developed; apex rounded; anal area well developed; maximal breadth near base; black and white.

*Legs*: fore and median femur and tibia slender, dorso-ventrally flattened; tibia II with external margin apically

truncate in males, showing process directed postero-ventrad in females; tibia III with 3 lateral and 9 apical spines; first hind tarsomere elongate; ventral face without pad of microsetae, bearing group of 10 - 12 spines near apex.

**Genitalia** ♂: pygofer higher than long; anal tube dorso-ventrally flattened; gonostyli fused ventrally, bearing baso-dorsal process directed cephalad; phallic complex with elongate, externo-ventral, sclerified process on each side of median, mainly membranous part that is sclerified externally.

**Sexual dimorphism:** males very slightly smaller than females and bearing normal median tibiae; median tibiae of females prolonged externally by apically rounded process directed postero-ventrad.

**Size:** ♂: 11 - 12 mm; ♀: 11 - 13 mm.

**Distribution:** Australia.

**BIOLOGY:** The only known species seems to be associated with arid and semi-arid biotopes.

***Fletcherobrachys stillata* (BERGROTH, 1907) n. comb.**

Figs. 2, 3 A-E, 4 A-B, plate 2 E-I.

*Platybrachys stillatus* BERGROTH, 1907: 289.

*Platybrachys stillatus* BERGROTH, 1907: METCALF, 1956: 59.

*Olonia nigroapicata* JACOBI, 1928: 5 n. syn.

*Olonia nigroapicata* JACOBI, 1928: METCALF, 1956: 65.

**ETYMOLOGY:** *stillatus* (Latin, adj.), from *stillare* = to drip. The name is assumed to refer to the small spots on the tegmina.

– *nigroapicata*: from *niger*, *gra*, *grum* (Latin, adj.) = black and *apex*, *icis* (Latin) = apex, tip. The name is assumed to refer to the colour of the hind wings.

**TYPES EXAMINED:** - **Neotype** ♂ of *Platybrachys stillata* BERGROTH, 1907 **present designation:** [23 km. WSW. of Barradale, WA. 22.56S 114.45E 30 Mar. 1971 E.F. Riek] [Neotype ♂ *Platybrachys stillata* Bergroth, 1907, J. Constant des., 2006] [*Fletcherobrachys stillata* (Bergroth, 1907), Dét. Jérôme Constant 2006] – *dissected*, *genitalia in glycerine* (ANIC).

**Note:** the type of *P. stillata* has not been found in the Bergroth's collection at the Zoological Museum of the University of Helsinki (Finland) (Jaakko Kullberg, *com. pers.*). Despite considerable investigation, it has also not been possible to locate it in any other institution and it is here considered as lost. A neotype that well matches BERGROTH's description is designated hereabove in order to stabilize nomenclature in the group.

- **Lectotype** ♀ of *Olonia nigroapicata* JACOBI, 1928 **present designation:** [Kimberley district] [N. V. Austr. Mjöberg] [nov.] [Typus] [Typus] [*Olonia nigroapicata* Jac. A. Jacobi determ.] [Lectotype ♀ *Olonia nigroapicata* Jacobi, 1928, J. Constant des., 2006] [*Fletcherobrachys*

*stillata* (Bergroth, 1907), Dét. Jérôme Constant 2006] (NHRS).

**OTHER MATERIAL EXAMINED:** (5 ♂, 11 ♀) – **Australia:** **NORTHERN TERRITORY:** 1 ♀: Simpson's Gap, 17.V.1954, Geel Coll. Exp. [MVMA]; 1 ♀: 180m N of Camp N<sup>o</sup>4 - Barclay Exp., 04.VII.1911, G.F. Hill [collecting place was probably around MacDonnell Ranges, near Alice Springs, at about 23°42'S 132°30'E (Ken Walker, *com. pers.*)] [MVMA]; **SOUTH AUSTRALIA:** 1 ♀: Everard Ranges (SA) to Warburton Range (WA), A. Brumby [SAM]; **WESTERN AUSTRALIA:** 2 ♂: 10,5 km SE of Banjarn HS, 22-28.II.1980, on foliage of tree *Grevillea*, T.F. Houston & al. [WAMP, IRSNB]; 1 ♀: 7,5 km SE of Banjarn HS, WAMP dept of biological survey site BW Camp, 22-28.II.1980, at light at night, T.F. Houston & al. [WAMP]; 1 ♀: 18,5 km ENE of Yuinmery HS, WAMP dept of biological survey site YYR7, 11-19.II.1980, T.F. Houston & al. [WAMP]; 1 ♂, 3 ♀: 23 km WSW of Barradale, 30.III.1971, E.F. Riek [ANIC, 1 ♀: IRSNB]; 1 ♀: Crossing Pool, Chichester Range NP, 25.XI.1988, R.R. Snelling & J. Grey [LBOB]; 1 ♀: Cue, A. Douglas [WAMP]; 1 ♂: N.W. Australia [MAMU]; 1 ♀: 12 km S Meekatharra, 17-18.IX.1983, Malaise trap dry wash with white-barked Eucalyptus, E.I. Schlinger & M.E. Irwin [INHS].

**DIAGNOSIS:** Only species of the genus, immediately recognized among all Australian Eurybrachidae by the colour of hind wings (base red, rest white bordered with black) and of the tegmina (blackish covered with small paler spots).

**DESCRIPTION:** LT: ♂ (n = 5): 11.3 mm (10.9 to 12.1); ♀ (n = 8): 12.1 mm (10.8 to 13.0).

**Head:** vertex black with margins brownish; frons, clypeus and labium brown; sides of clypeus blackish; carina of clypeus often reddish; ratio BV/LV = 4.5 - 4.8; BF/LF = 2.0.

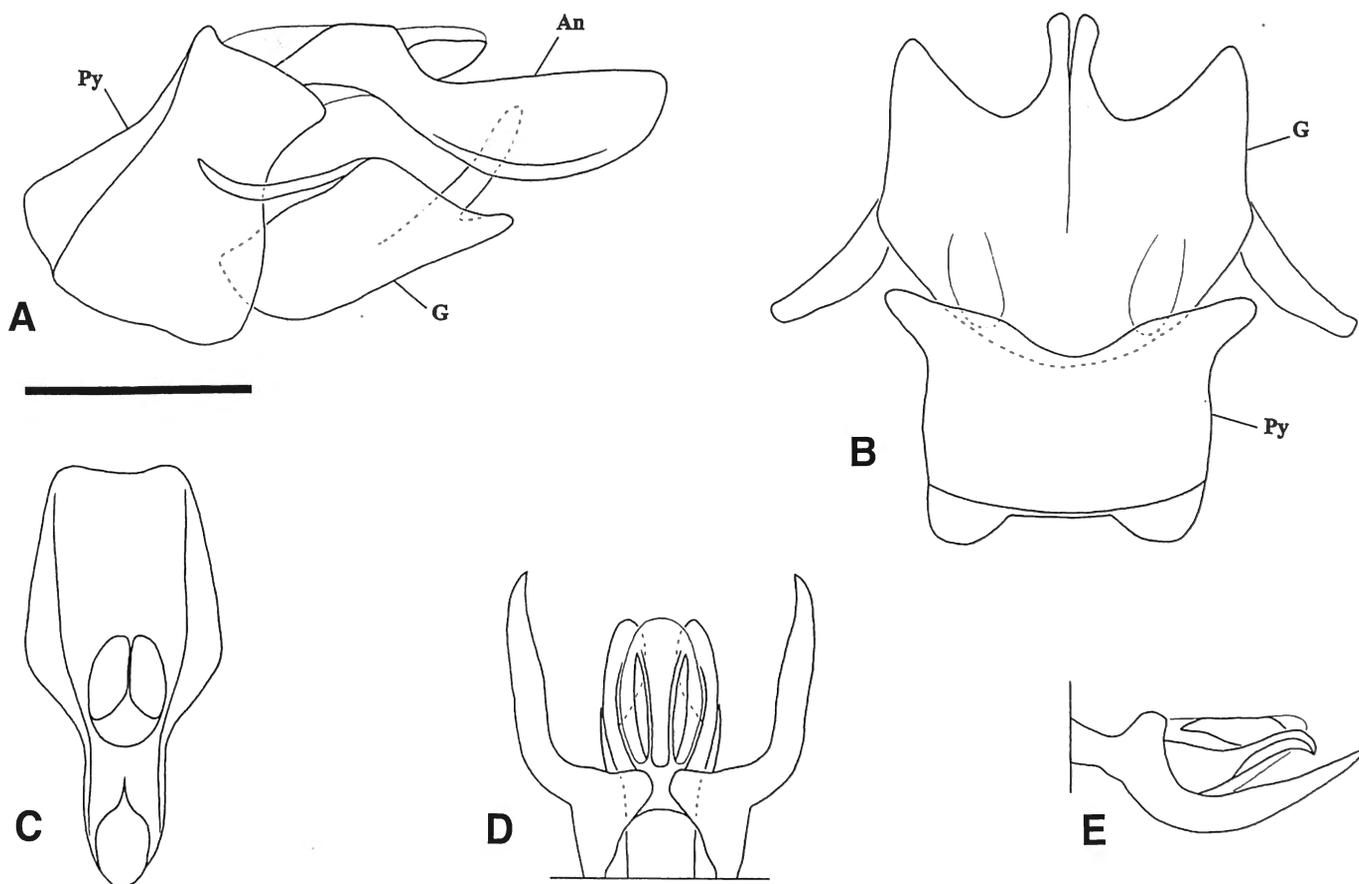
**Thorax:** blackish with carina, tubercles and median line on pronotum, 3 longitudinal lines on disc of mesonotum and scutellum, dark reddish brown; meso- and metasternum red; ratio LP+LM/BT = 0.81 - 0.84.

**Tegmina:** black to blackish brown, sometimes apical 1/3 paler; veins more or less suffused with red on basal 2/3; white patch at apico-costal angle, often absent; numerous, irregularly distributed, round spots all over tegmina, small to medium-sized, white to yellow, orange or red; membrane between tegmina and mesothorax red; ratio LTg/BTg = 2.3.

**Hind wings:** base red, then black to first 1/4; white oblique band to about 3/5; rest and costal cell black.

**Legs:** all coxae and trochanter III blackish and red; trochanter I and II red; femora I and II blackish with median line and margins dark red; tibiae I and II blackish with carinae, base and apex dark red; femur and tibia III reddish black with tibio-femoral joint red and base of spines and tarsi paler.

**Abdomen:** bluish green to orange with genital segments black.

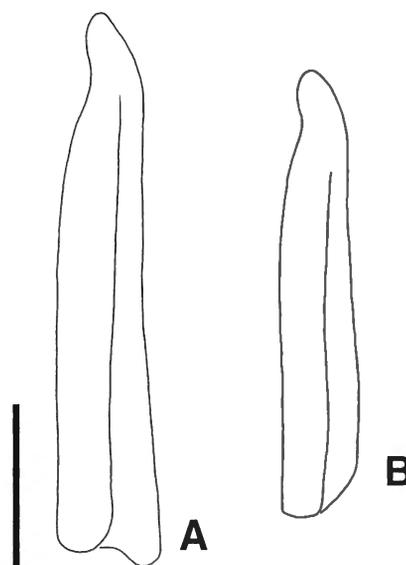


Figs. 3 A-E — *Fletcherobrachys stillata*. Genitalia ♂. **A.** pygofer, anal tube and gonostyli, left lateral view (An – anal tube; G – gonostyli; Py – pygofer). **B.** pygofer and gonostyli, ventral view. **C.** anal tube, dorsal view. **D.** phallic complex, dorsal view. **E.** phallic complex, left lateral view. Scale 1 mm.

*Genitalia* ♂: pygofer higher than long, with hind margin sinuate; gonostyli fused ventrally, bearing, at inner apical angle, elongate, curved process projecting dorso-caudad and at medio dorsal angle, elongate, curved process projecting dorso-cephalad; anal tube with lateral margins curved ventrad and apex concavely truncate in dorsal view; phallic complex: see figs 3 D & E.

*Genitalia* ♀: anal tube elongate, narrow, curved, directed postero-ventrad apically; v-shaped in cross section and laminate ventrally beyond anus; anus at basal 1/3; gonoplacs large, unilobous, oval, longer than high, not surpassing anal tube in length; gonapophysis IX large, scimitar shaped, elongate, pointing postero-dorsad at apex; gonocoxae VIII like inflated pouch with latero-dorsal hump; gonapophysis VIII fused in large, dorso-ventrally compressed lamina with lateral margins inflated, not surpassing gonocoxae IX; anterior vagina small, positioned ventrally; spermatheca attached apically, with *diverticulum ductus* dilated; posterior vagina large, about as broad as long, bearing longitudinal ridges dorsally; bursa copulatrix smaller than posterior vagina, attached apically, with distinct ornamentation.

*Notes*: - fresh specimens seem to be covered with reddish brown, dusty secretion, with spots of tegmina and 4 spots on mesonotum (2 along fore margin and 2 along hind margin) covered with white, waxy secretion.



Figs. 4 A-B — *Fletcherobrachys stillata*. Right median tibia, dorsal view. **A.** female. **B.** male. Scale 1 mm.

- it is not impossible that natural colour of abdomen is bluish green and that orange colour in collection specimens is artifact due to mode of collect and/or conservation (e.g. in ethanol), as it has also been observed in *Hackerobrachys viridiventris*.

**BIOLOGY:** The species is reported from the arid regions of Western and Central Australia.

It has been trapped once at light, in a site with following habitat: *Casuarina* L., *Eucalyptus camaldulensis* DEHNH. and *Acacia* MILL. woodland (BW Camp, T. Houston, *com. pers.*); 2 specimens have been caught on the foliage of trees of the genus *Grevillea* R. BR. ex KNIGHT (Proteaceae) and one specimen has been collected in a site described as "broad valley, with mulga (*Acacia aneura* F. MUELL. ex BENTH., Mimosaceae) tall shrubland" (YJR7, T. Houston, *com. pers.*). It seems to be present all year long and not to be scarce at least locally as series of several specimens have been collected in short time at 2 places.

## Discussion

The genus *Hackerobrachys* is one of the *Acacia*-feeder Eurybrachidae genera living in Australia. According to its host-plants and to the shape of the male phallic complex, it seems close to some other Australian genera, e.g. *Gelastopsis* KIRKALDY 1906, *Dardus* STÅL 1859... (CONSTANT, 2005).

*Fletcherobrachys* is the only genus of Eurybrachidae that shows sexual dimorphism in the shape of the median tibia.

## References

- BARBIER, Y. & RASMONT, P., 2000. *Carto Fauna-Flora 2.0. Guide d'utilisation*. Université de Mons Hainaut, Mons, Belgique, 59 pp.
- BERGROTH, E., 1907. Zwei neue Fulgoriden. *Wiener Entomologische Zeitung*, **26**: 289-291.
- BOURGOIN, T., 1993. Female genitalia in Hemiptera Fulgoromorpha, morphological and phylogenetic data. *Annales de la Société Entomologique de France*, **29**: 225-244.
- CONSTANT, J., 2004. Révision des Eurybrachidae (I). Le genre *Amychodes* Karsch, 1895 (Homoptera: Fulgoromorpha: Eurybrachidae). *Bulletin de l'Institut royal des Sciences naturelles de Belgique*, **74**: 11-28.
- CONSTANT, J., 2005. Revision of the Eurybrachidae (IV). The Australian genus *Gelastopsis* Kirkaldy, 1906 (Hemiptera Fulgoromorpha: Eurybrachidae). *Bulletin de l'Institut royal des Sciences naturelles de Belgique*, **75**: 57-69.
- FENNAH, R.G., 1964. Three new genera of Eurybrachidae (Homoptera: Fulgoroidea) from West Africa and Australia. *Proceedings of the entomological Society of London*. (B), **33** (9-10): 157-162.
- HACKER, H., 1924. Field notes on *Platybrachys*, & c. (Homoptera). *Memoirs of the Queensland Museum*, **8**: 37-42, Pl. V-VIII.
- JACOBI, A., 1928. Results of Dr E. Mjöberg's Swedish Scientific Expeditions to Australia 1910-1913. Rhynchota Homoptera. 1. Fulgoridae und Cercopidae. *Arkiv för Zoologi*, **19A** (28): 1-50.
- KIRKALDY, G.W., 1906. Leafhoppers and their natural enemies. *Bulletin of the Hawaiian Sugar Planter's Association Division of Entomology*, **1**(9): 271-479.
- The signification of this modification in female tibiae is not known but it is not impossible that it is related to the laying of eggs as Eurybrachidae cover their egg clutches with waxy secretion. According to the shape of the male genitalia, the genus seems to be a member of the same group as *Hackerobrachys*, *Gelastopsis* etc. It will be interesting to know the host-plant(s) of *Fletcherobrachys stillata*, as the other hereabove listed genera seem to be associated with *Acacia* species (Mimosaceae). If the present classification (SCHMIDT, 1908; METCALF, 1956) is followed, the genera should be placed in the Platybrachyini and this is provisionally followed here although it is clear that the suprageneric classification of Eurybrachidae will have to be reviewed.

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METCALF, Z.P., 1956. *General Catalogue of the Homoptera. Fascicle IV Fulgoroidea. Part 18 Eurybrachidae and Gengidae*. Raleigh (U.S.A.) North Carolina State College, 81p.

SCHMIDT, E., 1908. Beitrag zur Kenntnis der Eurybrachinen (Hemiptera – Homoptera). *Zoologischer Anzeiger*, **33**: 241-247.

SOULIER-PERKINS, A., 1997. Systématique phylogénétique et test d'hypothèses biogéographiques chez les Lophopidae (Homoptera, Fulgoromorpha). Thèse, MNHN, Paris : 128 pp.

SOULIER-PERKINS, A. & BOURGOIN T., 1998. Copulatory mechanisms and sexual selection in the Lophopidae (Hemiptera: Fulgoromorpha). *Annales de la Société Entomologique de France (N.S.)*, **34**(2): 149-162.

STÅL, C., 1859. *Hemiptera. Species novas descripsit*. Fregatten Eugenies Resa, **4**: 219-298; pls. 3-4

STÅL, C., 1862. Synonymiska och systematiska anteckningar öfver Hemiptera. *Ofv. Svenska Vet. Akad. Förh.* - **19**: 479-504.

STÅL, C., 1863. Beitrag zur Kenntniss der Fulgoriden. *Stettiner Entomologische Zeitung*, **24**: 230-251.

WALKER, F., 1851. *List of the Homopterous insects in the collections of the British Museum*. London, **2**: 261-636, pls 3-4.

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