



Revision of the Eurybrachidae (XIII). The new Australian genus *Chewobrachys* (Hemiptera: Fulgoromorpha)

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Abstract

The new genus of Eurybrachidae *Chewobrachys* n. g. (Hemiptera, Fulgoromorpha) is described for two species from Eastern Australia, *Platybrachys sanguiflua* (Walker, 1858) and *Chewobrachys limbourgi* n. sp. The new combination *Chewobrachys sanguiflua* (Walker, 1858) n. comb. is proposed and *Platybrachys insignis* Distant, 1892 is proposed as a junior synonym of *C. sanguiflua*. The male and female genitalia are illustrated and photos of habitus, distribution maps and biological data are provided with the description of the species. A key to the species of *Chewobrachys* is given. Lectotypes are designated for *Eurybrachys sanguiflua* Walker, 1858 and *Platybrachys insignis* Distant, 1892. The new genus is provisionally placed in the tribe Platybrachyini Schmidt, 1908.

Key words: Platybrachyini, *Acacia*, *Platybrachys*

Introduction

This paper is the thirteenth of a series intended to revise the family Eurybrachidae. This study starts with the revision and (re)definition of each genus and will 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.

In this paper, *Chewobrachys* n. g. is created in the process of dismantling the heterogeneous Australian genus *Platybrachys* Stål, 1859 (Constant, 2006c). Walker (1858) described *Eurybrachys sanguiflua* from Moreton Bay (Queensland, Australia). Stål (1862) transferred the species into his genus *Platybrachys* Stål, 1859 which was defined by the following main features (Stål, 1861, 1862): (1) no infra-ocular spine, (2) clavus closed, (3) hind tibiae with 3 lateral spines, (4) combined length of pro- and mesonotum equal to breadth of thorax, (5) antennae short. The only other reference to the species was by Hacker (1924) in a list of the common species of *Platybrachys* occurring around Brisbane. Many specimens of *Platybrachys lanifera* (Stål, 1854), the type-species of the genus, and of several closely related species have been examined within this paper. It is evident that *P. sanguiflua* (Walker, 1858), as well as one closely related, undescribed species, cannot be placed in the same genus as *P. lanifera* because (1) the first hind tarsomere bears a distinct pad of microsetae ventrally in the *P. lanifera* group but such a pad is obsolete in *P. sanguiflua*, (2) the hind wings are always dark brown and unicolorous in the *P. lanifera* group but are marked with red basally and with white in *P. sanguiflua*, (3) the male genitalia have a very homogeneous shape in the *P. lanifera* group which is completely different from those of *P. sanguiflua*, (4) members of the *P. lanifera* group live on trees of the genus *Eucalyptus* (family Myrtaceae) while *P. sanguiflua* lives on *Acacia* (family Fabaceae). For these reasons *P. sanguiflua* is removed from *Platybrachys* and placed in the new genus *Chewobrachys* together with the new species *Chewobrachys limbourgi* n. sp. *Platybrachys insignis* Distant, 1892 is synonymised below with *P. sanguiflua*. Distant (1892) described *P. insignis* from Peak Downs, Queensland, and stated that the species can

be superficially recognized by the presence of two greyish white spots on the hind wings. Those spots are also visible in *P. sanguiflua* and male genitalia are similar. For those reasons, *P. insignis* is synonymized below with *P. sanguiflua*.

Kirkaldy (1906) mentioned both *P. sanguiflua* and *P. insignis* in a list of the species of *Platybrachys* described from Australia and wisely stated that the genus "*is badly in need of revision*".

Materials and methods

The genitalia are prepared for examination using the technique described by Constant (2005). The description of the female genitalia follows Bourgoin (1993) with some additions from the studies of Soulier-Perkins (1997) and Soulier-Perkins & Bourgoin (1998) on the family Lophopidae.

Most of the specimens examined have been remounted as many of them were mounted with wings spread, making LT impossible to measure, and pins were severely oxidised, damaging the specimens.

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.

If necessary, the correct name of the localities is mentioned in parentheses after the one transcribed from the label. Lectotypes have been designated when necessary, following the rules of the International Code of Zoological Nomenclature, in order to improve nomenclatural stability in the group. For the labels of the types, the wording on each single label is limited by square brackets. The type specimens of the new species here described bear a label of the following type: [Holotype / Paratype ♂ / ♀ *Genus species* n. sp. Jérôme Constant det. 2008]. The etymology of the scientific names is given whenever possible.

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 tegmina – 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 tegmina – 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). |
| ASCU | Agricultural Scientific Collections Unit, Orange Agricultural Institute, Orange, New South Wales, Australia (M.J. Fletcher). |
| BMNH | The Natural History Museum, London, United Kingdom (M. Webb). |
| OUMNH | Hope Entomological Collections, Oxford University Museum of Natural History, Oxford, United Kingdom (D. Mann & Z. Simons). |
| QDPI | Queensland Department of Primary Industries, Indooroopilly, Queensland, Australia (J. Donaldson). |
| QM | Queensland Museum, South Brisbane, Queensland, Australia (G. Monteith). |
| RBINS | Royal Belgian Institute of Natural Sciences, Brussels, Belgium (P. Grootaert). |
| 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). |

Taxonomy**Genus *Chewobrachys* Constant n. g.**

Figs. 1–5.

Type-species: *Eurybrachys sanguiflua* Walker, 1858 by original designation.

Etymology. The name is formed by the juxtaposition of Chew, in honour of Mr Peter Chew and his children Tony and Sandy, whom I wish to thank for their contribution to a better knowledge of the life history of several species of Eurybrachidae found around Brisbane (see also Constant 2005, 2006c), and *brachys* (Greek) = short, which is a common ending of generic names among the Eurybrachidae. Gender arbitrarily feminine following the use within the family.

Diagnosis. Medium sized (12–16 mm), brown, convex insects. Recognized by the following combination of characters: (1) frons slightly convex, 2 times broader than long (fig. 2), (2) infra-ocular spines on genae absent, (3) tegmina slightly convex (figs 24–28), (4) first fork of vein M beyond Sc-R separation (fig. 1), (5) clavus closed (fig. 1), (6) hind wings well developed, brown with base red and white markings apically (figs. 24–27), (7) abdomen and ventral face bright red (figs. 24–27), (8) ventral face of first hind tarsomere with obsolete pad of microsetae (fig. 4–5). Known only from Australia.

Description. *General coloration:* brown to grey-brown, often suffused with olivaceous, with white waxy markings, abdomen bright red.

Head: about as broad as thorax; vertex about 4 times broader than long, concave with fore and hind margins curved and carinate; frons twice broader than long (fig. 2), barely visible in dorsal view, convex, with dorsal margin slightly concave in normal view; disc longitudinally wrinkled; clypeus slightly surpassing fore coxae; labium surpassing median coxae but not reaching hind trochanters; apical segment longer than broad, acuminate, shorter and more slender than penultimate (fig. 3); no infra-ocular spine; small hump before ventral margin of eye; ocelli absent; antennae short, not visible from above, slightly surpassing lateral angle of frons but not eye; scape short, pedicel barrel-shaped.

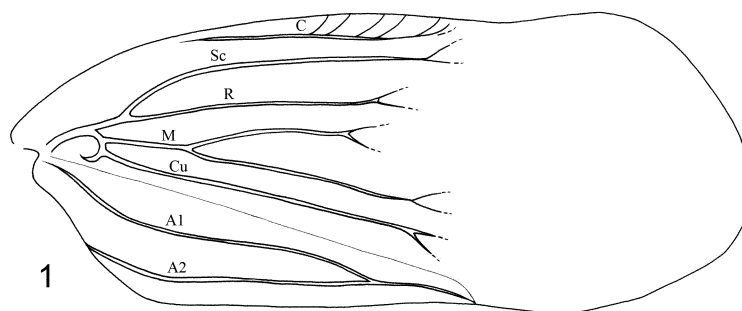


FIGURE 1. *Chewobrachys*, main veins of right tegmen. A1: anal vein 1; A2: anal vein 2, C: costal vein; Cu: cubital vein; M: median vein; R: radial vein; Sc: subcostal vein.

Thorax: about 1.1 times broader than length of pro- and mesonotum together; pronotum with fore margin carinate and carina close and parallel to fore margin, obsolete in middle; anterior part of disc excavate, posterior part humped; mesonotum smooth.

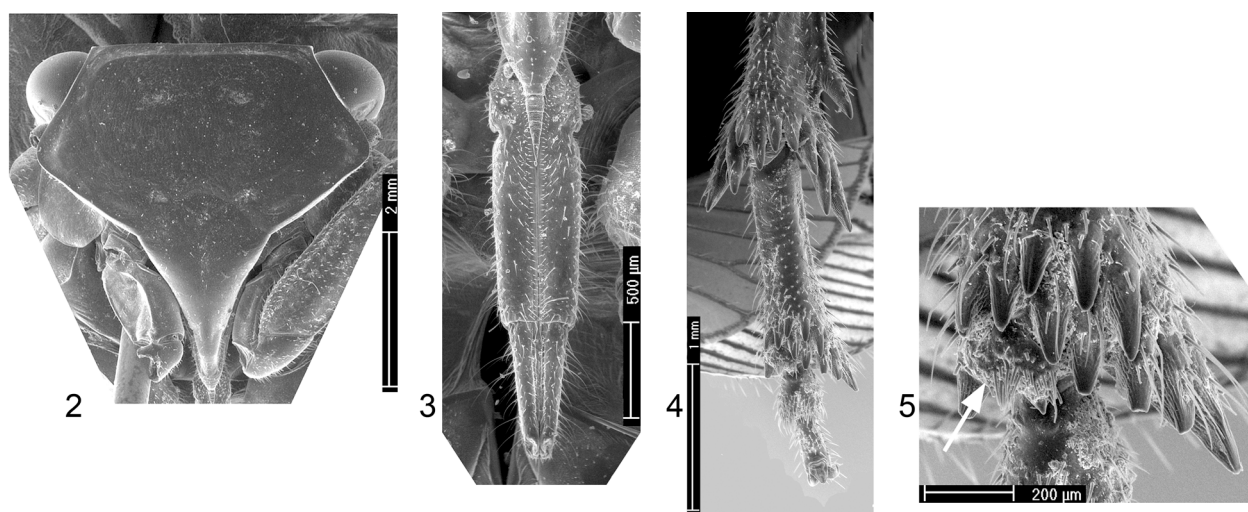
Tegmina: nearly flat with apex slightly folded ventrad beyond clavus, elongate, about 2.5 times longer than broad; costal margin sinuate to slightly curved; apex roundly cuneiform; sutural margin sinuate; clavus closed.

Venation (fig. 1): vein C obsolete on basal 1/3, distinct on middle 1/3; veins Sc and R separated close to base; first fork of vein M beyond Sc-R separation; veins A1 and A2 fused at about 2/3 of length of clavus.

Hind wings: well developed; anal area well developed; sutural margin slightly trilobed; brown with base

red and ante-apical whitish markings; apex rounded, not reaching apex of tegmen at rest.

Legs: fore and median femur and tibia dorso-ventrally flattened, slender; tibia III with 3 lateral and 9 apical spines (fig. 4); first hind tarsomere elongate, with ventral face bearing group of 12 spines near apex (fig. 4) and slight tubercle with obsolete pad of microsetae at interno-apical angle (fig. 5).



FIGURES 2–5. *Chewobrachys sanguiflua*. 2, frons, normal view. 3, labium, ventral view. 4, hind tarsus, ventral view. 5, first hind tarsomere, ventral view, detail of apex.

Genitalia ♂: pygofer short, slightly sinuate and narrower dorsally in lateral view (figs 6, 29); anal tube dorso-ventrally flattened, elongate, with anus at basal ¼ (figs 8, 31); gonostyli laterally flattened, convex and elongate, fused ventrally at base (figs 7, 30), with spirulate baso-dorsal process directed dorso-cephalad, dorsal margin strongly emarginate near apex, digitiform or pointed process at posterior 2/3 (figs 6, 29); perianthrium with elongate, sclerified process directed postero-dorsally on each side of median, mainly membranous part; aedeagus sclerified, bifid apically, surpassing processes of periandrium (figs 9, 10, 32, 33).

Genitalia ♀: anal tube elongate and narrow, curved postero-ventrad, slightly v-shaped in cross section beyond anus, lanceolate in dorsal view, laminate ventrally (figs 11, 14); gonoplags unilobed, projecting dorso-laterad, longer than high, not surpassing anal tube (fig 11); gonapophysis IX large, apically rounded and curved dorsad (fig. 11); gonocoxae VIII looking like inflated pouch (figs 11, 13); gonapophysis VIII large, dorso-ventrally flattened, fused together and with sternite VII, rounded at apex (figs. 11, 12); sternite VII produced caudad, bearing ventrally two subapical processes (figs. 11, 12); anterior vagina small, membranous (fig. 11); posterior vagina strongly sclerified, short and broad basally, subtriangular apically; five–six strong, longitudinal ridges on each side of apical constriction (figs 11, 12, 15); bursa copulatrix attached dorsally, near base, oval-shaped, produced ventrally at base before vaginal connection, much larger than posterior vagina; walls bearing weak ornamentation (fig. 11).

Sexual dimorphism: females larger than males and white spots of hind wings smaller in dimension (figs 24–27).

Size: 12–17 mm.

Distribution: Eastern Australia (New South Wales and Queensland).

Biology. Species of this genus appear to be associated with plants of the genus *Acacia* (Mimosaceae). All specimens for which the host-plant species is known with certainty have been collected on trees of the genus rather than on species that grow as shrubs. One specimen has also been collected at light, one in a house, two at interception traps and two in pitfall traps. The specimens examined have been collected from September to May.

Notes: (1) species of the Australian genus *Olonia* Stål, 1862 can show similarly coloured hind wings and

abdomen but have a pad of microsetae ventrally on the first hind tarsomere, and very different genitalia with the gonostyli spinose. The Australian species *Nirus corticeus* Jacobi, 1928 also has similarly coloured hind wings and abdomen but has concave frons, a more elongate clypeus, and very different male genitalia (see also Constant, 2006a); (2) the species in the genus *Chewobrachys* can only be surely identified on the basis of the male genitalia. Females are difficult to separate but the combination of some morphometrical and colour characters seems to give fairly reliable results.

The females listed hereunder show characters that do not allow reasonably reliable identification: **Queensland**: 1 ♀: Marsupial Creek, 94 km W of Georgetown (18°16'S 142°41'E), 200 m, 19.v-11.i.2000, pitfall, J. & P. Hasenpusch [QM]; 1 ♀: Mazeppa N.P. (22°16'S 147°17'E), 240 m, 27.iii.2001, pyrethrum gidgee trunks, site 3, G.B. Monteith [QM]; 1 ♀: Toowong (27°29'S 152°59'E), 3.iv.1920, S. Hainsworth [ANIC].

Identification key to the species of *Chewobrachys*

Note: males are easily identified by examination of genitalia. Females are difficult to separate but the combination of some morphometrical (table 1) and colour characters gives fairly reliable results.

1. males2
- females3
2. process of gonostyli placed laterally (figs. 29–30), ventral margin of aedeagus slightly concave apically and smooth (figs. 32–33) *Chewobrachys limbourgi*
- process of gonostyli placed ventrally (figs. 6–7), ventral margin of aedeagus strongly concave apically and showing small teeth (figs. 9–10)..... *Chewobrachys sanguiflua*
3. BTg maximum 40 % of LTg, costal margin of tegmina slightly sinuate, white spots on hind wings usually reduced (fig. 25)..... *Chewobrachys limbourgi*
- BTg minimum 42 % of LTg, costal margin of tegmina slightly rounded, white spots on hind wings usually well developed (fig. 27)..... *Chewobrachys sanguiflua*

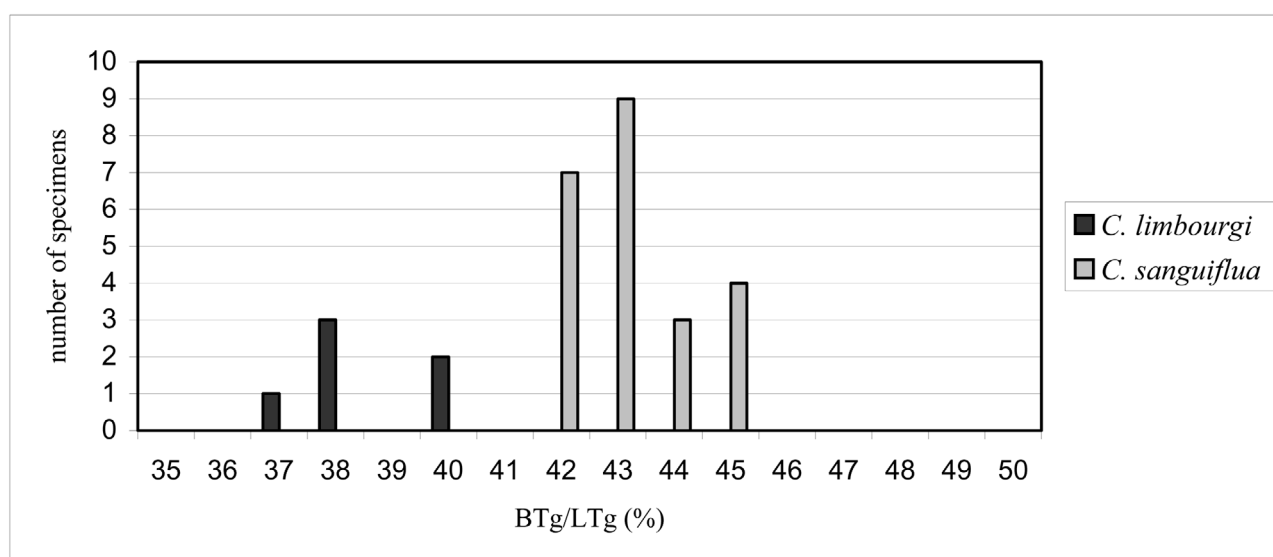


TABLE 1. comparison of the ratio BTg/LTg between females of *C. limbourgi* and *C. sanguiflua*.

***Chewobrachys sanguiflua* (Walker, 1858) n. comb.**

Figs. 2–23, 26–28.

Eurybrachys sanguiflua Walker, 1858: 330.*Platybrachys sanguiflua* (Walker, 1858): Stål, 1862: 488.*Platybrachys insignis* Distant, 1892: 282 **n. syn.***Platybrachys insignis* Distant, 1892: Kirkaldy, 1906: 444.*Platybrachys sanguiflua* (Walker, 1858): Kirkaldy, 1906: 444.*Platybrachys sanguiflua* (Walker, 1858): Hacker, 1924: 39.*Platybrachys insignis* Distant, 1892: Metcalf, 1956: 55.*Platybrachys sanguiflua* (Walker, 1858): Metcalf, 1956: 57.

Etymology. *sanguiflua* (Latin): from *sanguis*, blood and *flua*, derivated from *fluere*, to flow; means bleeding. The name is assumed to refer to the bright red colour of the body, legs and base of the hind wings.

- *insignis* (Latin), remarkable, conspicuous. The name is assumed to refer to the whitish apical spots of the hind wings.

Types examined

- Lectotype ♂ of *Eurybrachys sanguiflua* Walker, 1858, **present designation**: [Moreton Bay (*on the reverse*) 57, 130] [Type] [*Eurybrachys sanguiflua*.] *dissected, genitalia in glycerine* (BMNH). Coordinates of Moreton Bay: 27°15'S 153°15'E.

Note: the last label was cut from Walker's (1858) book.

- Paralectotype ♀ of *Eurybrachys sanguiflua* Walker, 1858: [Moreton Bay (*on the reverse*) 57, 130] (BMNH).

- Lectotype ♂ of *Platybrachys insignis* Distant, 1892, **present designation**: [Peak Downs] [Type] [*insignis* Dist.] [Distant Coll. 1911-383] *both fore legs missing, dissected, genitalia in glycerine* (BMNH). Coordinates of Peak Downs: 22°56'S 148°05'E.

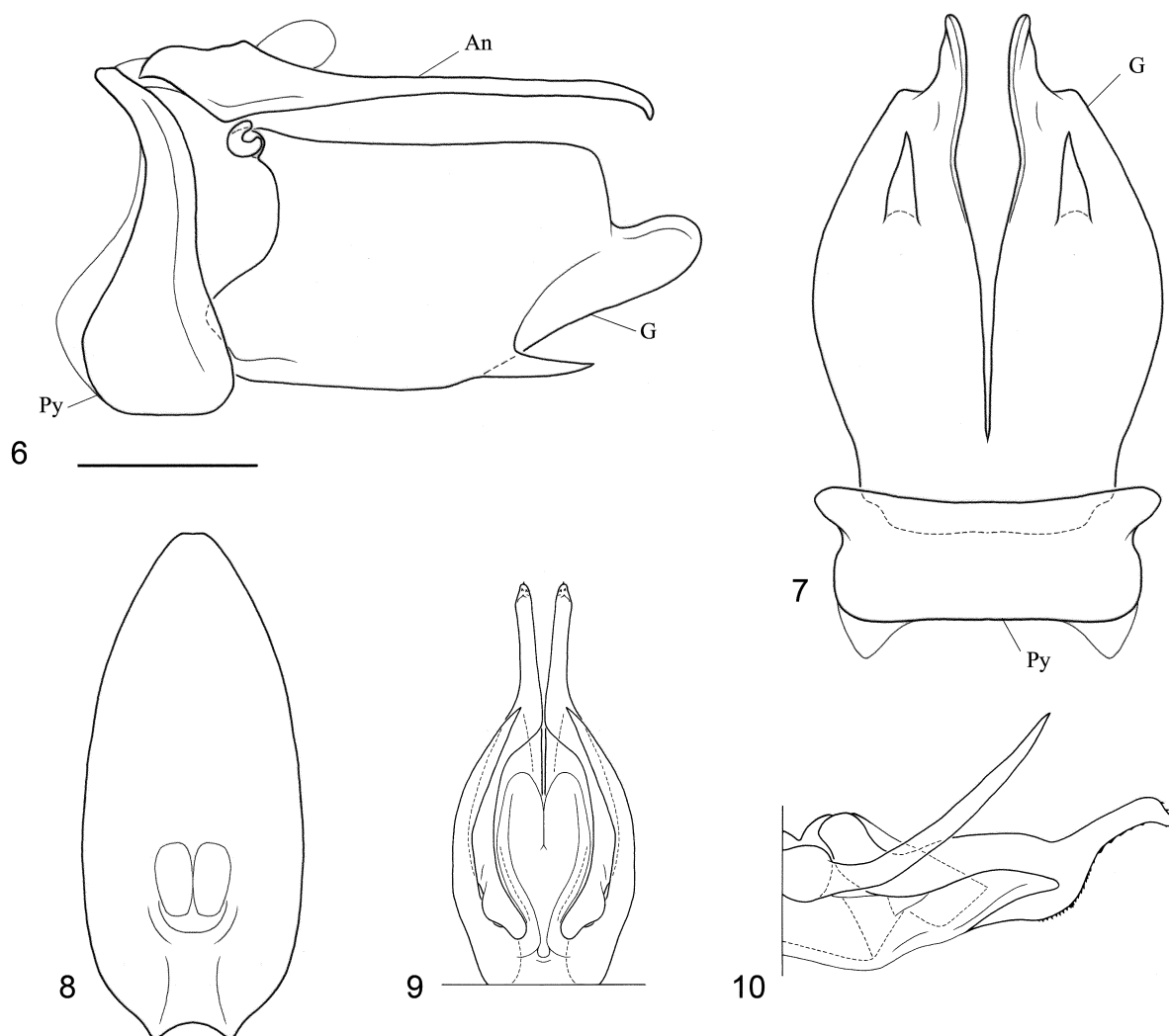
Note: four females from the same origin in the Distant's collection (BMNH) have been examined. One of them bears a label [*sanguiflua* Walk.] from Distant's handwriting and 2 of them have been identified as *C. limbourgi*. Distant (1892) does not mention the number of specimens he examined and only the hereabove listed male matches the size (expanded tegmina, 22 mm) mentioned in the description, females being much larger. For those reasons, none of those four females is here recognized as paralectotypes.

Other material examined (15 ♂, 33 ♀, 1 ex.). **Queensland**: 1 ♂, 3 ♀: no data, H. Hacker [USNM]; 1 ♀: Brisbane (27°30'S 153°01'E), A.M. Lea [SAM]; 3 ♀: idem, Illidge [AMS]; 2 ♂, 3 ♀: idem, H. Hacker [USNM]; 1 ♀: idem, 21.iii.1953, A.G. Barrie [UQIC]; 1 ♀: idem, 03.iii.1951, G. Saunders [UQIC]; 1 ♂: idem, 08.ii.1922, H. Hacker [USNM]; 1 ♀: idem, 08.iii.1926, H. Hacker [QM]; 2 ♀: idem, 26.xii.1924, H. Hacker [QM]; 2 ♂, 5 ♀: idem, 27.iv.1924, H. Hacker [QM]; 1 ♂, 1 ♀: QDPI; 1 ♂: idem, 27.iv.1924, H. Hacker [QM]; 1 ♂: idem, 15.iii.1956, H.J. Lavery [RBINS]; 1 ♀: idem, 15.iii.1956, J. Martin [RBINS]; 1 ♀: idem, 20.xii.1959, J. Martin [UQIC]; 1 ♂: idem, 20.iv.1940, V.B.D. Skerman [UQIC]; 2 ♀: Burleigh (= Burleigh Heads) (28°06'S 153°27'E), xi.1923 [SAM]; 1 ♂, 1 ♀: Burleigh Heads, C.P. Ledward [ANIC]; 1 ♂: Grovely (27°28'S 152°58'E), 28.ii.1966, J.H. Bassett, at light [QDPI]; 2 ♂, 3 ♀: Mt Cootha, Brisbane (27°29'S 152°58'E), 06.iv.1924, H. Hacker [QM]; 2 ♀: USNM; 2 ♀, 1 ex (only right wings left): idem, 11.v.1924, H. Hacker [USNM]; 1 ♂: idem, 16.iii.1924, H. Hacker [QDPI]; 1 ♂: idem, 23.iv.1924, H. Hacker [QM]; 1 ♂: Nudgee, Brisbane (27°22'S 153°05'E), 22.xi.1924, H. Hacker [QM]; 2 ♀: Peak Downs [BMNH]; 1 ♀: Stradbroke Island (27°35'S 153°28'E), 5.xii.1913, H. Hacker [BMNH].

The following females are attributed to *C. sanguiflua* on the basis of morphometrical and colour characters indicated in diagnosis: **New South Wales**: 1 ♀: 6 miles NE Bullawa Creek, E. Narrabri (30°19'S 149°50'E), 6.iv.1951, Key & Chinnick [ANIC]; 1 ♀: Glossodia (33°31'S 150°49'E), near Sydney, 12.i.1981, D. James [ASCU]; **Queensland**: 1 ♀: Cooloola N.P., near freshwater lake (26°12'S 153°03'E), 21.iv.1981, G.R. Brown [ASCU]; 1 ♀: Frenchville (DW16) (23°21'S 150°33'E), 100 m, 21.iii.1991, K. Williams & R.

Raven [QM]; 1 ♀: Isla Gorge N.P., NE cnr (25°10'S 150°01'E), 240m, 22.ix-15.xii.1997, Vine scrub, interception trap, Monteith & Cook [QM]; 1 ♀: Moranbah (22°02'S 148°03'E), 5 km S, 240 m, 20.xii.1997-26.iv.1998, pitfall trap, Bendee Scrub, G.B. Monteith [QM]; 1 ♀: Mt Bassett (26°25'S 148°55'E), 3,4 km NNE, 500 m, 5.iii.2002, Monteith, Cook & Wright [QM]; 1 ♀: Mt Tamborine (= Hendersons Knob) (27°55'S 153°10'E), 10.x.1979, J.F. Donaldson [QDPI]; 2 ♀: Rannes (24°07'S 150°07'E), 21.xi.1947, K.R. Norris [ANIC]; 1 ♀: Redland Bay (27°37'S 153°19'E), 3.ii.1941, A.F. Smith [UQIC]; 1 ♀: Sapphire (23°28'S 147°43'E), 7.x.1991, in house, L. Kempson [QDPI]; 1 ♀: Sunnybank (27°35'S 153°03'E), 10.ix.1947, J.W. Littler [UQIC]; 1 ♀: Virginia (27°23'S 153°04'E), 20.iii.1927, J.A. Beck [UQIC]; 5 ♀: Cunnamulla (28°04'S 145°41'E), x.1941, N. Geary [AMS]; 1 ♀: idem, 5.xi.1940 [RBINS]; 1 ♀: idem, 2.xi.1940 [AMS]; 1 ♀: Bringalily Creek, Inglewood (28°11'S 151°12'E), 20.iv.1910, H. Tryon [QDPI]; 1 ♀: near Dogwood R. crossing, 28km W of Condamine (26°56'S 150°08'E), 19.xii.1987, M.S. & B.J. Moulds [ASCU]; 1 ♀: Rockhampton (23°23'S 150°30'E), i.1923 [SAM].

Diagnosis. The males can be identified by examination of the genitalia. The females have tegmina broader (LTg/BTg less than 2.40), with costal margin slightly rounded and white spots of hind wings more developed than in *C. limbourgi*. Identification of females is always more sure when males have been captured together with them.



FIGURES 6–10. *Chewobrachys sanguiflua*, genitalia ♂. 6, pygofer, anal tube and gonostyli, left lateral view. 7, pygofer and gonostyli, ventral view. 8, anal tube, dorsal view. 9, phallic complex, dorsal view. 10, phallic complex, left lateral view. An: anal tube; G: gonostyli; Py: pygofer. Scale 1mm.

Description. LT: ♂ (n = 4): 13.1 mm (12.0–14.2); ♀ (n = 30): 13.6 mm (12.0–15.3).

Head: frons variegated, green (living females) (fig. 18), grey-olivaceous to brown-olivaceous (males and collection females); lateral sides of head paler; vertex dark brown with disc yellow-brown to olivaceous; clypeus and labium reddish brown; antennae brown; ratio BV/LV = 4.1–5.0; BF/LF = 2.0.

Thorax: tegulae, pro- and mesonotum dark brown; metanotum and ventral face bright red; ratio LP+LM/BT = 0.86; LM/LP = 2.6.

Tegmina: brown with irregular, whitish to pale greyish markings, sometimes suffused with pale greenish; markings forming postero-costal patch and transverse band on basal third of corium, sometimes extending to clavus; veins suffused with red basally, sometimes suffused with greenish on disc (figs. 26–28); ratio LTg/BTg = ♂: 2.5, ♀: 2.31 (2.22–2.38).

Hind wings: brown with base bright red; whitish spot apically at each angle; spots smaller in females, often fused in a sinuate band in males (figs 26–27).

Legs: bright red with tibiae and tarsi darker, brownish; spines of hind legs brown to blackish.

Abdomen: bright red with genitalia testaceous.

Genitalia ♂: lateral process of gonostyli pointed and placed basally in lateral view (fig. 6), placed ventrally in ventral view; gonostyli in ventral view with internal margins well separated on most of length and external margin strongly emarginate near apex (fig. 7); aedeagus with dorsal margin sinuate and ventral margin strongly concave apically in lateral view, showing small teeth apically and ventrally (figs. 9, 10).

Biology. The species has been observed by Mr. Peter Chew (*pers. com.*, 2008) on March 30th, 2008 on the trunk of *Acacia disparrima* M.W. Mc Donald & Maslin (Fabaceae) at Karawatha Forest near Brisbane. The specimens were hiding in cracks of the stringy bark of those trees (Fig. 22), where their colour gives them perfect camouflage (Figs. 16, 21). Females were at about 1 metre high, males at about 2 metres, all facing downwards (figs 16, 20, 21). When disturbed (Fig. 17), they quickly walked up towards the tree top (Fig. 18), and jumped only when touched. One nymph (Fig. 19) was observed on the same tree as the adults and is attributed to this species. As the distribution range of *Acacia disparrima* is limited to coastal Queensland, it is clear that *C. sanguiflua* feeds on more than one species of *Acacia*. *Acacia disparrima* is a member of the *Acacia aulacocarpa* group and further investigation would be interesting to know if *C. sanguiflua* lives only on species of that group. One specimen has also been caught at light trap. The species seems widely distributed in SE Queensland and quite common around Brisbane.

***Chewobrachys limbourgi* n. sp.**

Figs. 23–25, 29–33.

Etymology. Dedicated to my fat colleague and friend Pol Limbourg (RBINS).

Material examined. Holotype ♂: [6 W Gogango Q, 6 Apr 1957, E F Riek] - *dissected, genitalia in glycerine* (ANIC). Coordinates of Gogango: 23°40'S 150°02'E.

Paratypes (13 ♂, 7 ♀): 1 ♀: [Rton, Dec 1922] [UQIC Reg. # 42756] (UQIC), coordinates of Rockhampton: 23°23'S 150°30'E; 1 ♀: [Rton, Dec 1922] [UQIC Reg. # 42755] (RBINS); 1 ♂: [Rton, Dec 1922] [UQIC Reg. # 42757] (RBINS); 1 ♂: [Rton, Dec 1922] [UQIC Reg. # 42758] (UQIC); 1 ♂: [Rton, Dec 1922] [UQIC Reg. # 42759] (UQIC); 1 ♀: [Rton, Jan 1923] [UQIC Reg. # 42760] (UQIC); 1 ♂, 2 ♀: [R'ton, on wattle, L. Franzen] - 1 ♀ *dissected, genitalia in glycerine* (QM, 1 ♀: QDPI); 2 ♂: [R'ton, on wattle, L. Franzen] [Rockhampton, Queensland] (SAM, RBINS); 1 ♂: [R'ton, on wattle, L. Franzen] [Rockhampton, Queensland] [*Platybrachys sanguiflua* Walk. Id. by R. Harvey] (SAM); 1 ♀: [R'ton, on wattle, L. Franzen] [22] [Brit. Mus. 1923-313] (BMNH); 2 ♂, 1 ♀: [R'ton, Jan 1923] [Rockhampton, Queensland] (SAM); 1 ♀: [Rockhampton, Australia, Janson, 1870] (OUMNH); 1 ♂: [Queensland] (SAM); 1 ♂: [Taroom, Dec '29] (QDPI), coordinates of Taroom: 25°39'S 149°48'E; 1 ♂: [SEQ: 24°48'S x 149°47'E, Brigalow Res. Stn, site 4, 29 Oct-16 Dec 2000.

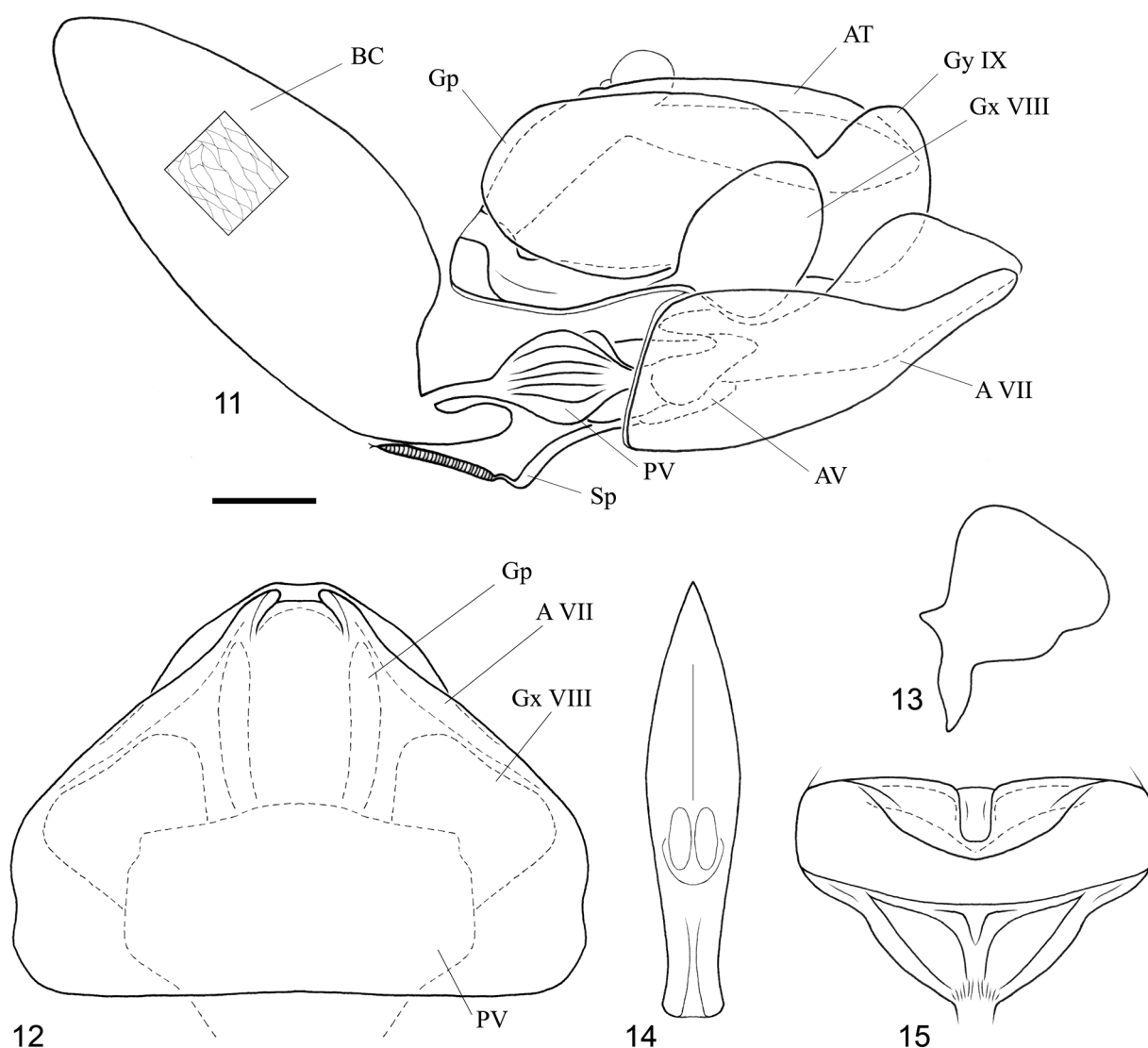
Cook & Monteith. FIT. brigalow. 170 m. 9815] (QM) coordinates of Brigalow Reserve Station: 24°48'S 149°47'E; 1 ♂: [Cunnumulla, Q., 12 Nov. '38, N. Geary], coordinates of Cunnamulla: 28°04'S 145°41'E - *dissected, genitalia in glycerine* (AMS).

Note: Seven females from Cunnumulla and one from Rockhampton are not listed as paratypes while one male has been captured at that place because following morphometrical and colour characters, they have been attributed to *C. sanguiflua*.

The following females are attributed to *C. limbourgi* on the basis of morphometrical and colour characters given in diagnosis: **Queensland:** 1 ♀: Biloela (24°25'S 150°30'E), 26.xi.1932 [QDPI]; 1 ♀, 1 ♀? (abdomen missing): Peak Downs (22°56'S 148°05'E) [BMNH].

Diagnosis. Males can be identified by examination of the genitalia. The females have tegmina more elongate (LTg/BTg more than 2.44), with costal margin slightly sinuate and white spots of hind wings less developed than in *C. sanguiflua*.

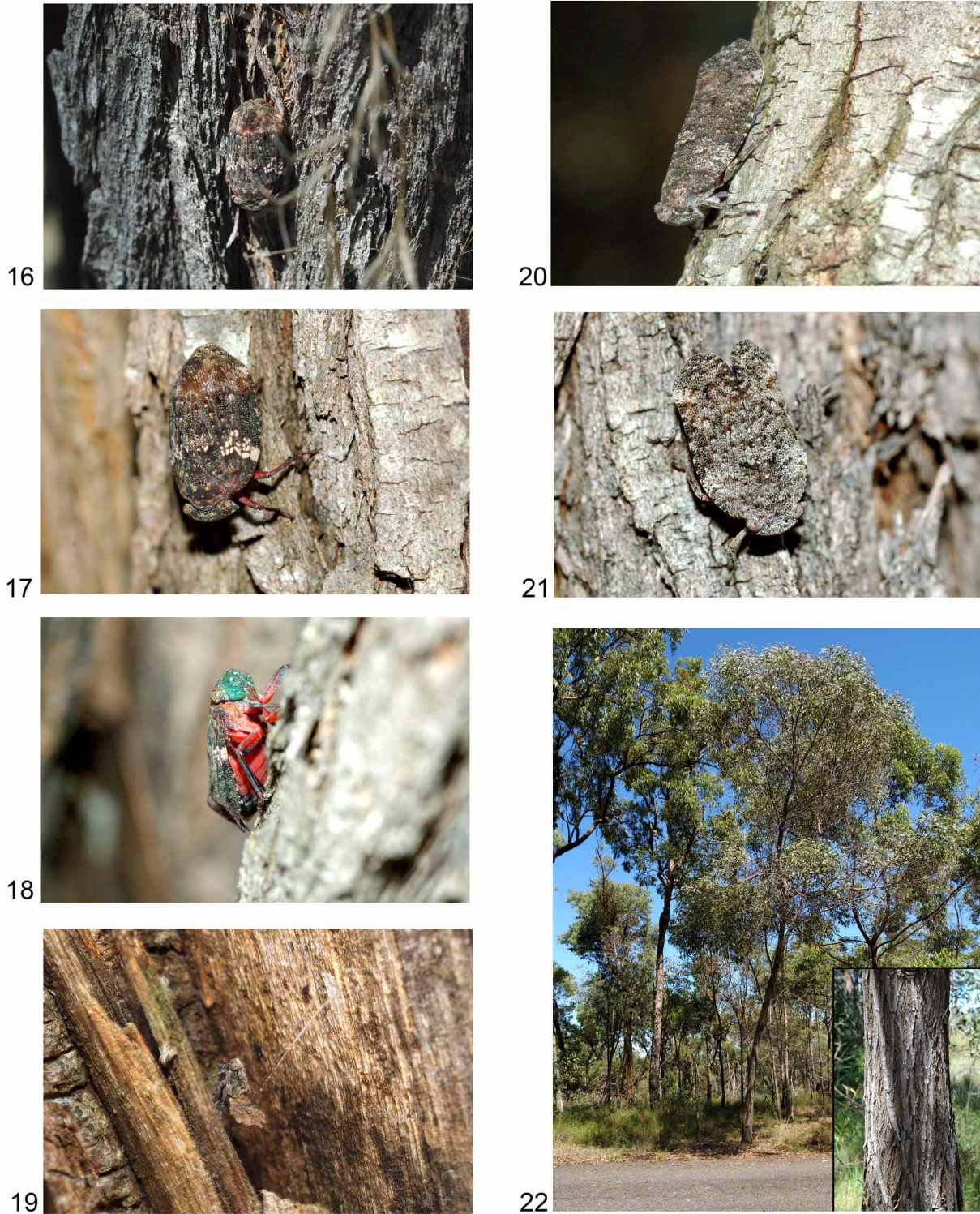
Description. LT: ♂ (n = 13): 13.3 mm (11.9–14.2); ♀ (n = 7): 14.8 mm (14.3–15.4).



FIGURES 11–15. *Chewobrachys sanguiflua*, genitalia ♀. 11, left lateral view. 12, ventral view (external). 13, gonocoxa VIII, dorsal view. 14, anal tube, dorsal view. 15, posterior vagina, dorsal view. A VII: abdominal segment VII; AT: anal tube; AV: anterior vagina; BC: bursa copulatrix; Gp: gonoplac; Gx VIII: gonocoxa VIII; Gy IX: gonapophysis IX; PV: posterior vagina; Sp: spermatheca. Scale 1 mm.

Head: variegated, grey-olivaceous to brown-olivaceous; sides of vertex darker; lateral sides of head paler; clypeus and labium reddish brown; antennae brown; frons with unprecise, transverse, paler markings; ratio $BV/LV = 3.5-4.5$; $BF/LF = 2.0$.

Thorax: pro- and mesonotum coloured same as head, often with two paler patches on posterior half of disc; metanotum and ventral face bright red; ratio $LP+LM/BT = 0.90$; $LM/LP = 2.6$.



FIGURES 16–22. *Chewobrachys sanguiflua* at Karawatha Forest (Brisbane). 16–18, female on *Acacia disparrima*. 19, nymph on *A. disparrima*. 20–21, male on *A. disparrima*. 22, biotope with detail of trunk of *A. disparrima*. (photos Peter Chew, Brisbane, Australia).

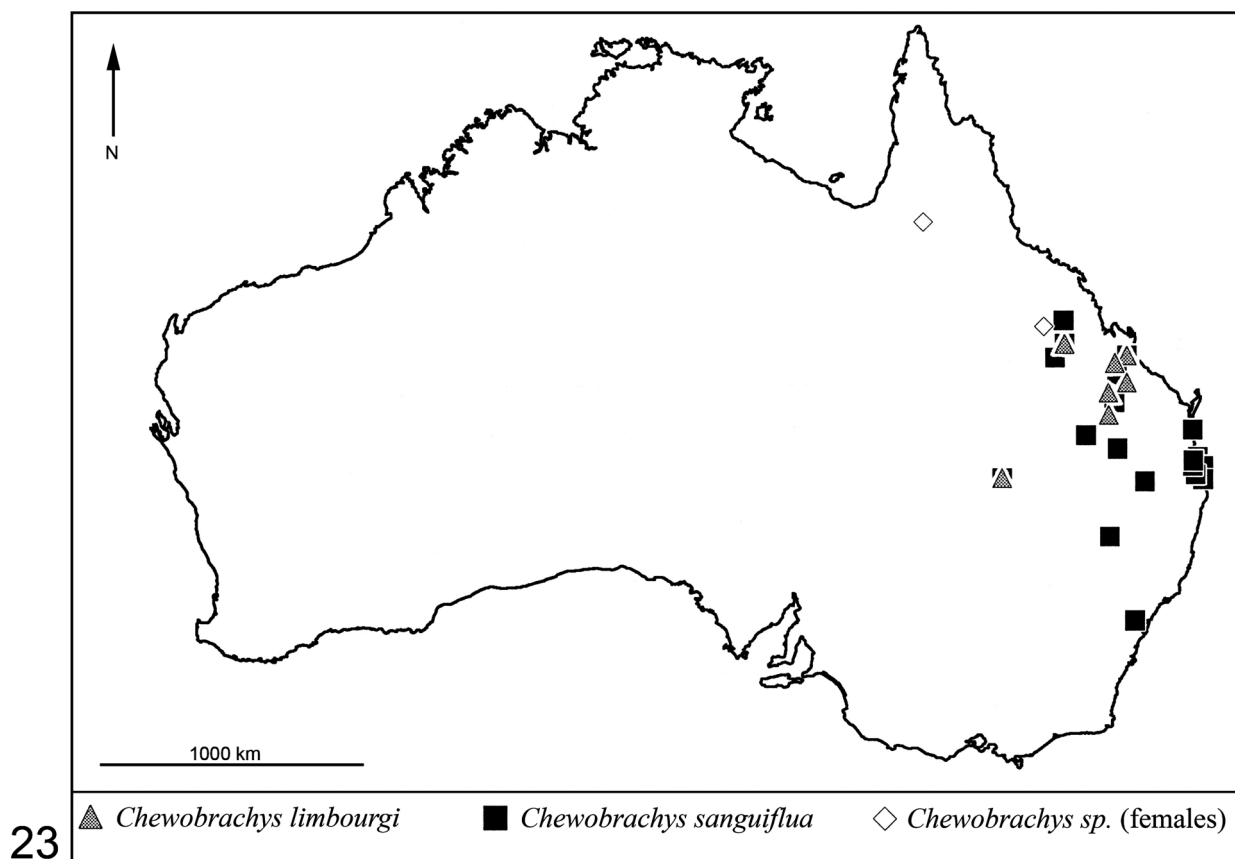
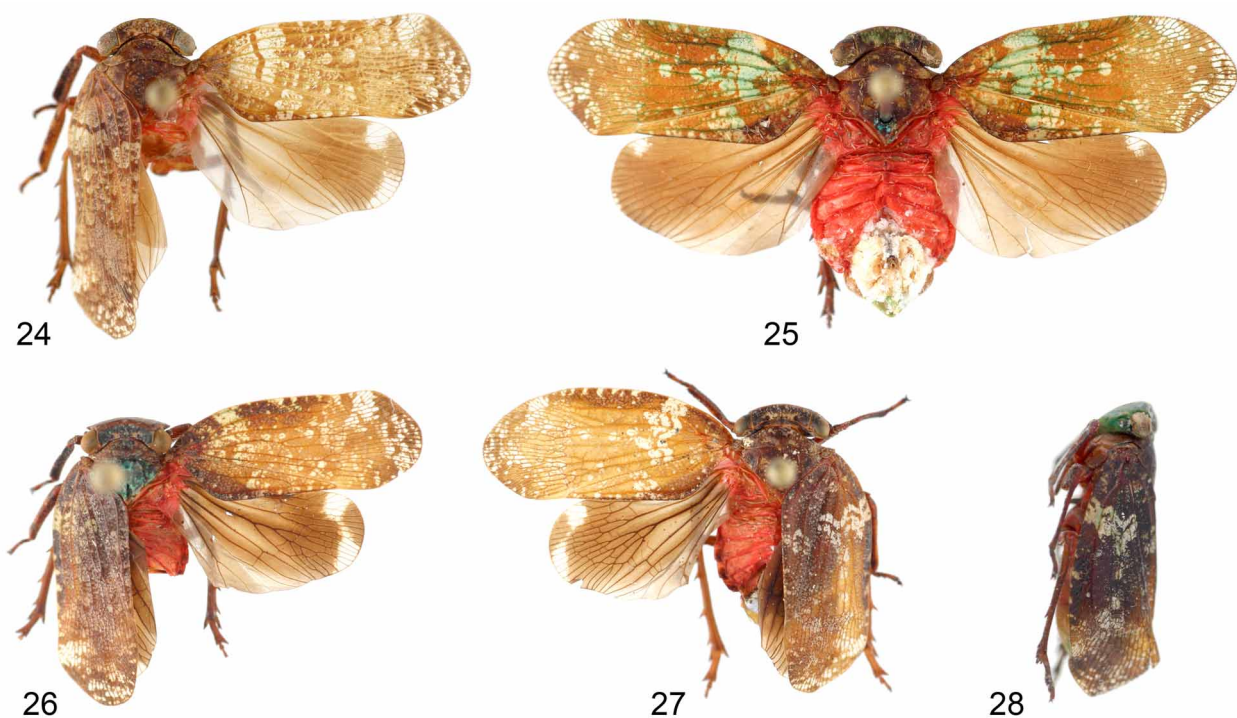
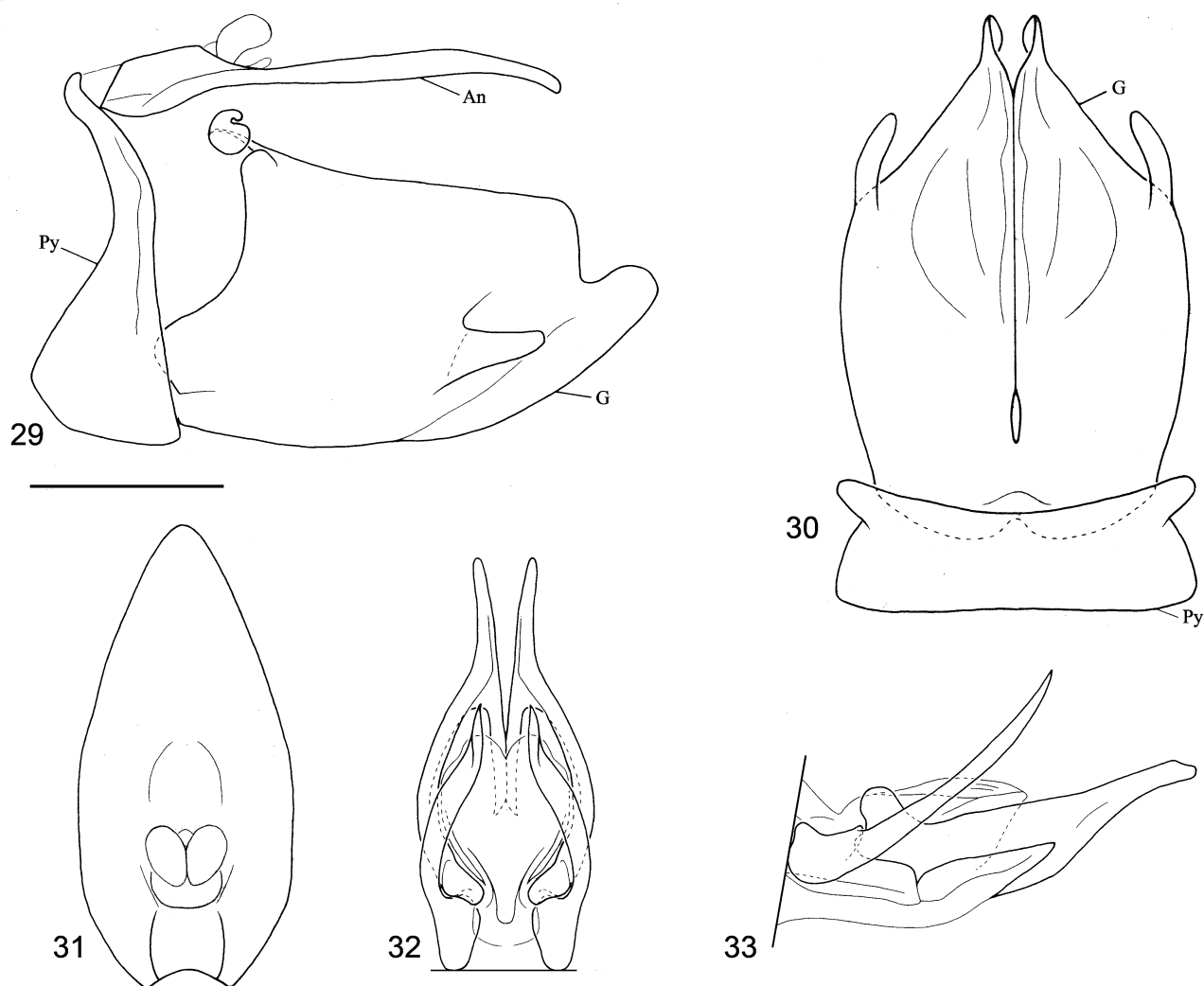


FIGURE 23. Distribution map. *Chewobrachys limbougi*, *C. sanguiflua* and unidentified females of *Chewobrachys* in Australia.



FIGURES 24–28. 24, *Chewobrachys limbougi* ♂, dorsal view. 25, *C. limbougi* ♀, dorsal view. 26, *C. sanguiflua* ♂, dorsal view. 27, *C. sanguiflua* ♀, dorsal view. 28, *C. sanguiflua* ♀, left lateral view.



FIGURES 29–33. *Chewobrachys limbourgi*, genitalia ♂. 29, pygofer, anal tube and gonostyli, left lateral view. 30, pygofer and gonostyli, ventral view. 31, anal tube, dorsal view. 32, phallic complex, dorsal view. 33, phallic complex, left lateral view. An: anal tube; G: gonostyli; Py: pygofer. Scale 1mm.

Tegmina: brown to dark brown with irregular paler, testaceous to green-olivaceous markings, covered with white waxy secretion in fresh specimens; larger transverse paler marking on corium close to base, showing a median brown stripe in males; clavus with median paler marking; paler marking at postero-costal angle and spots more numerous apically; veins suffused with green (figs 24–25); ratio LTg/BTg = ♂: 2.63, ♀: 2.56 (2.44–2.7).

Hind wings: brown with base bright red; pale white spot apically at each angle; females with spots smaller and postero-sutural spot often obsolete (figs 24–25).

Legs: bright red with tibiae and tarsi darker; spines of hind legs brown to black.

Abdomen: bright red with genitalia testaceous.

Genitalia ♂: lateral process of gonostyli digitiform, rounded apically, placed at basal third of height in lateral view (fig. 29), placed laterally in ventral view; gonostyli in ventral view with internal margins in contact on most of length and external margin slightly concave after process (fig. 30); aedeagus with dorsal margin nearly straight and ventral margin slightly concave apically in lateral view, not showing small teeth (figs. 32–33).

Biology. Six specimens of this species have been captured on wattle (*Acacia* sp., Fabaceae) in Rockhamp-

ton and one specimen has been taken at a flight interception trap. The current distribution of the species is limited to south-eastern Queensland.

Discussion

The genus *Chewobrachys* shows important affinities with a number of Australian genera (e.g. *Gelastopsis* Kirkaldy, 1906, *Euronotobrachys* Kirkaldy 1906, *Kirkaldybrachys* Constant, 2006b and *Hackerobrachys* Constant, 2006c) in the shape of the male and female genitalia, and in the association with species of *Acacia*. The known distribution of both species of *Chewobrachys* is far from comprehensive. As the species are sympatric in a number of places, it would be interesting to know if they feed on the same host-plants or if they are host-specific on different plant species.

If the present classification (Schmidt, 1908; Metcalf, 1956) is followed, the genus should be placed in the Platybrachyini [main features of the Platybrachyini as defined by Schmidt (1908): (1) clavus of the tegmina closed, (2) no infra-ocular spine] and this is provisionally followed here although it is clear that the suprageneric classification of Eurybrachidae requires revision.

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