Revision of the Eurybrachidae (VIII)
The Oriental genera Klapperibrachys CONSTANT and Macrobrachys LALLEMAND (Hemiptera: Fulgoromorpha: Eurybrachidae)

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Abstract

The Oriental genus of Eurybrachidae (Hemiptera, Fulgoromorpha) Macrobrachys Lallemand, 1950 is described and reviewed and the genus Klapperibrachys Constant n. g. is described for one species, Thessitus cremeri Jacobi, 1944. The new combination Klapperibrachys cremeri (Jacobi, 1944) n. comb. is subsequently proposed. Guentheria formosa Lallemand, 1963 is proposed as synonym of Klapperibrachys cremeri (Jacobi, 1944). The name Guentheria Lallemand, 1963 is not available for the species cremeri as it is preoccupied by Guentheria Bleeker, 1862, a genus of fishes of the family Labridae. The male genitalia are illustrated and photos of habitus, distribution map and biological data are provided with the description of the species. Lectotypes and paralectotypes are designated for Macrobrachys tonkinensis Lallemand, 1950. Thessitus cremeri and Guentheria formosa. Both genera are placed in the Eurybrachinae, Loxocephalini.

Résumé


Keywords: Oriental region, Eurybrachidae, revision, Macrobrachys, Klapperibrachys, Guentheria.

Introduction

This paper is the eighth 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 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.

Historical review

Thessitus cremeri

In 1944, Jacobi described Thessitus cremeri for a series of specimens collected in South-Eastern China. The reason why the species was placed in Thessitus Walker, 1862 remains unclear as cremeri does not show the very typical bark-and-lichen-like aspect of the species of the genus that had been well represented in several papers (e.g. Hope, 1843; Walker, 1862; Distant, 1906 & 1916). Furthermore, cremeri is also very different in the shape of the frons that is less dilated laterally and in the venation with claval veins A1 and A2 fused.

Later in 1963, Lallemand created, for the same species, the genus Guentheria for one specimen from Southern China, and described the species as Guentheria formosa Lallemand, 1963. He described it in the second part of his revision of the family Fulgoridae dealing with the species from Asia and Australia and erroneously placed the genus in the subfamily Phenacinae of the Fulgoridae, giving as diagnostic features for the genus many characters of the family Eurybrachidae: (1) only one carina between frons and vertex, (2) frons broader than long, (3) frons angularly broadened at each side, (4) vertex broader than long. He apparently did not examine the hind tarsomeres and female genitalia and had been influenced by the large size and bright colour to place the genus in the Fulgoridae rather than in the Eurybrachidae. It seems interesting to mention that all species of Phenacinae are restricted to the New World.

In 1995, Liang moved Guentheria from the Fulgoridae to the Eurybrachidae.

Finally, in their catalogue of the Asian and Australian Fulgoridae, Nagai & Porion (1966) have erroneously left Guentheria in the Fulgoridae, illustrating G. formosa on the front cover of their work.

Macrobrachys

In 1950, Lallemand created the genus Macrobrachys for one new species from Vietnam, M. tonkinensis Lallemand, 1950. He erroneously stated that the clavus of the tegmen is closed, that the hind wings are broader than the tegmina and that the venation of the hind wings is...
similar to that of the genus *Thessitus* Walker, 1862. It seems obvious that *Lallemand* has never examined the hind wings of *Macrobrachys*: the only specimen that he has seen was pinned "at rest".

He also erroneously placed the genus in the tribe Platytachynini [main features of the Platytachynini: (1) clavus open, (2) infra-ocular spine absent].

In his catalogue of the family Eurybrachidae, Metcalf (1956) erroneously placed the genus in the subfamily Eurybrachynini, tribe Eurybrachini [main features of the Eurybrachini: (1) clavus open, (2) claval veins not fused], probably on the basis of *Lallemand*'s erroneous statement that the hind wings are broader than the tegmina with the venation similar to the one of *Thessitus* Walker, 1862 (*Thessitus* is placed in the Eurybrachini).

**Materials and methods**

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

The dissection of the genitalia is done after boiling the abdomen in glacial acetic acid for a few minutes. The pygofer is then separated from the abdomen and boiled for about one hour in a 10% solution of potassium hydroxide (KOH) with some drops of aqueous solution of chlorazol black. It is then placed in glycerin.

For routine identification, the genitalia have been examined on the specimen as the specific structures on the phallic complex are directly visible between the gonostylus in ventral view.


Lectotypes and paralectotypes have been designated. They bear a red manuscript label with the following data: [Lectotype/Paralectotype ♀♀ Genus species Author, date, J. Constant des.]. For the transcription of the labels of the types, each single label is limited by square brackets.

The species are redescribed and the male genitalia as well as other characters useful for identification are figured. A distribution map 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).

**Genus Klapperibrachys** Constant, 2006 n.g.

Type-species: *Thessitus cremeneri* Jacob, 1944, by original designation and monotypy.

*Guenterheria* Lallemand, 1963: 6 (nec Bleeker, 1862) nov. syn.

Type-species: *Guenterheria formosa* Lallemand, 1963, by original designation and monotypy.


The name *Klapperibrachys* is here proposed because *Guenterheria* is not available as it is preoccupied by *Guenterheria* Bleeker, 1862, a genus of fishes of the family Labridae (Perciformes: Labroidei), which is a junior synonym of *Halichoeres* Rüppel, 1835 (Parenti & Randall, 2000).

**Etymology:** *Klapperibrachys* is formed from the contraction of the name of the collector of the first specimens of the genus, J. Klapperich, and *brachys* (Greek word meaning "short") which is a common ending of the generic names among the family Eurybrachidae. Gender arbitrarily feminine, following the use in the family. - *Guenterheria* was dedicated by *Lallemand* to Dr. Kurt K. Günther (ZMHB).

**Diagnosis:** Differs from all other Oriental genera by the following combination of characters: large size; vertex less than 2 times broader than long; subocular spines present; clavus narrowly open with veins A1 and A2 fused; tegmina elongate and bright colour of tegmina and hind wings. Oriental region.

**Description:** General coloration: body yellow and black; tegmina and wings bright red spotted with black.
**Head:** narrower than thorax; vertex about 1.8 times broader than long, flat with margins carinate, fore margin strongly curved, hind margin curved; frons 1.3 times broader than long, slightly convex, slightly wrinkled on disc; clypeus elongate, reaching median coxa; labium about as long as clypeus, reaching hind coxa; last segment of labium longer than broad, narrower than penultimate segment; infra-ocular spine present, small; ocelli absent; antennae short, not surpassing lateral projection of frons, visible from above; scape very short, pedicel subglobular.

**Thorax:** about 1.4 times broader than length of pro- and mesonotum together; pronotum with fore margin carinate, one carina on each side of disc, parallel to fore margin, and 2 impressed points on middle of disc; mesonotum smooth or with 3 obsolete, longitudinal carinae.

**Tegmina:** flat, about 2.5 - 3 times longer than broad; maximal breadth near apex; costal and sutural margins slightly sinuate; apex round; clavus narrowly open.

**Hind wings:** well developed, broad; broader than tegmina; apex round; clavus narrowly open. Vein C visible on basal half of tegmen, very close to costal margin; veins Sc & R separated close to base; first fork of vein M beyond Sc+R separation; A₁ & A₂ fused at about half of clavus.

**Hind legs:** well developed, broad; broader than tegmina; apex round; nearly reaching apex of tegmina at rest; anal area well developed.

**Legs:** fore and median legs elongate, with femur and tibia dorso-ventrally flattened, slender; tibia III with 7 lateral spines; first hind tarsomere elongate; ventral face without pad of microsetae, bearing a group of 14 spines near apex.

**Genitalia:** pygofer higher than long in lateral view; anal tube with lateral lobe directed ventrad; gonostyli laterally flattened, with process on middle of dorsal margin.

**Sexual dimorphism:** males smaller than females.

**Size:** 22-27 mm

**Distribution:** Oriental region, reported from Southeastern China and Viet-Nam.

**Biology:** The single species seems to be associated with montanous habitat.

**Klapperibrachs cremeri** (Jacobi, 1944) n. comb.

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

**Thessitus cremeri** Jacobi, 1944: 10.

**Thessitus cremeri** Jacobi, 1944: Metcalf, 1956: 32


**Guentheria formosa** Lallemand, 1963: 6. nov. syn.

**Guentheria formosa** Lallemand, 1963: Liang, 1995: 163

**Guentheria formosa** Lallemand, 1963: Nagai & Porion, 1996: 13, 38, 40, pl. 1 fig. 2, pl. 2 fig. 35.

**Etymology:** cremeri: the species was dedicated by Jacobi to Dr. Cremer, the curator of the insect collections of the ZFMK at that time.

- formosa (adj., Latin) = beautiful. Name assumed to refer to the general aspect of the species.

**Types examined** (all bear a white manuscript identification label: [Klapperibrachs cremeri (Jacobi, 1944) ♀♀, Jérôme Constant det. 2006]):

- **Lectotype ♀ of Thessitus cremeri Jacobi, 1944 present designation:** labeled [Kuatan (2300m) 27.40n. Br.117.40o. L. J. Klapperich, 24.9.1938 (Fukien)] [27] [TYPUS] [Thessitus cremeri Jacobi Holotypus, Straßerberger det.] [Holotypus] [Museum Koenig, HOM 2000/651] - (ZFMK).

- **Paratypes (5 ♀♀, 7 ♂♂) of Thessitus cremeri Jacobi, 1944 present designation:** 1 ♀ (dissected, genitalia in glycerine) [Kuatan (2300m) 27.40n. Br.117.40o. L. J. Klapperich, 16.9.1938 (Fukien)] [Museum Koenig, HOM 2000/654] - (ZFMK); 1 ♀: [Kuatan (2300m) 27.40n. Br.117.40o. L. J. Klapperich, 18.9.1938 (Fukien)] [Museum Koenig, HOM 2000/652] - (ZFMK); 1 ♀: [Kuatan (2300m) 27.40n. Br.117.40o. L. J. Klapperich, 27.9.1938 (Fukien)] [Museum Koenig, HOM 2000/655] - (ZFMK); 1 ♀: [Kuatan (2300m) 27.40n. Br.117.40o. L. J. Klapperich, 15.9.1938 (Fukien)] [Museum Koenig, HOM 2000/653] - (ZFMK); 1 ♀: [Kuatan (2300m) 27.40n. Br.117.40o. L. J. Klapperich, 25.9.1938 (Fukien)] [Museum Koenig, HOM 2000/656] - (ZFMK); 1 ♀: [Kuatan (2300m) 27.40n. Br.117.40o. L. J. Klapperich, 18.9.1938 (Fukien)] - (SMTD); 2 ♀♂, 1 ♂: [Kuatan (2300m) 27.40n. Br.117.40o. L. J. Klapperich, 20.9.1938 (Fukien)] - (SMTD); 2 ♀♂, 1 ♂: [Kuatan (2300m) 27.40n. Br.117.40o. L. J. Klapperich, 25.9.1938 (Fukien)] - (SMTD); 1 ♀: [Kuatan (2300m) 27.40n. Br.117.40o. L. J. Klapperich, 30.6.1938 (Fukien)] - (SMTD); 1 ♂: [China Prov. Fukien J. Klapperich 1938] - (SMTD).

**Note:** all 11 first listed paratypes bear labels [Thessitus cremeri Jacobi/Jacobi, Paratypus, Straßerberger det.] and [Paratypoid]; all paratypes from SMTD bear a label [Staat!. Museum für Tierkunde Dresden]. Those labels by Straßerberger have no value under taxonomical rules. They have been placed under the specimens by Mr and Mrs Straßerberger during a work intended to allow a better understanding of what happened to the Homoptera material collected by J. Klapperich in China and on which was based the work of Jacobi (1944) (MANNHEIMS, 1965).


**Note:** the date of collection, written in Chinese, is recorded according to the traditional Chinese lunar calendar. As the year of collection is not known, it is not possible to find the corresponding date according to the Gregorian calendar (Ai-Ping Liang, pers. com.).

**Other material examined** (2 ♀♂): -CHINA: 1 ♀: Fukien, Shaowu: Tachulan, 1000 m, 09.IX.1943, T. Maa (BPBM); 1 ♀: idem, 02.IX.1943 (IRSNB).
Figs. 1 A-E — *Klapperibrachys cremeri*: genitalia ♂. A. pygofer, anal tube and gonostyli, left lateral view (An — anal tube; G — gonostyli; Py — pygofer). B. anal tube, dorsal view. C. pygofer and gonostyli, ventral view. D. phallic complex, left lateral view. E. phallic complex, dorsal view. Scale 1mm.

DIAGNOSIS: Immediately recognized among all Eurybrachidae by its large size and bright red colour of tegmina and hind wings.

DESCRIPTION: LT: ♀ (n = 5): 22.3 mm (22.0 to 22.7); ♂ (n = 10): 25.8 mm (24.6 to 27.0).
Head: entirely brownish yellow; ratio BY/LV = 1.7 - 1.8; BF/LF = 1.3.
Thorax: same colour as head with anterior half of pronotum and 4 points along hind margin of mesonotum black; often mesonotum infuscate behind middle of hind margin of pronotum; tegulae with dorsal half yellowish and ventral half blackish; ratio LP+LM/BP = 0.72 - 0.74.
Tegmina: red with about 40 (32 - 46) black spots on apical 1/2; spots weakly paler than ground colour on basal 2/3; ratio LTg/BTg = 2.63 - 2.73.
Hind wings: bright red with 13 - 18 black spots on apical 1/2; spots larger than ones of tegmina.
Legs: femora yellowish with apex black ventrally; femora I and II often infuscate dorsally at 2/3; tibiae I and II black with yellowish ring in middle; tibia III infuscate with base of spines yellowish; tarsi infuscate; first hind tarsomere yellowish.
Abdomen: brownish yellow.
Genitalia ♀: yellow with gonostyli little infuscate ventrally; see figs 1 A - E.
Genitalia ♂: anal tube elongate, laterally compressed, v-shaped in cross section after anus; strongly lanceolate ventrally; apex notched with sides rounded; length surpassing gonoplaes; gonoplaes longer than broad, with strong carina parallel to hind margin on side; gonapophysis IX large, directed postero-ventral; apical margin broadly rounded and furnished with numerous minute teeth; gonocoae VIII looking like inflated pouch with inner margin concave; gonapophysis VIII clearly visible between gonocoae VIII, subrectangular with outer margin concave; anterior vagina very small, positioned ventrally with spermatheca attached apically; posterior vagina small with transverse dorsal hump in middle; apex projecting dorsally; bursa copulatrix small, ovoid, larger than posterior vagina, with very weak ornamentation on walls.
Sexual dimorphism: females about 17 % larger than males.

BIOLOGY: The species is known from montaneous regions of South-Eastern China and Northern Viet-Nam at altitudes between 850 and 2300 m, and has been collected in June, July, September and October. Most of the specimens have been collected in September but more field observations should be conducted before concluding to any seasonality in the phenology of the species. No host-plant is known to date.

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**Genus Macrobrachys LALLEMAND, 1950**

Type-species: *Macrobrachys tonkinensis* LALLEMAND, 1950, by monotypy.

*Macrobrachys* LALLEMAND, 1950: 150

ETYMOLOGY: Name formed from *makros* (Greek) = large and *brachys* (Greek) = short, which is a common ending of the names of the genera among the family Eurybrachiidae. The name is assumed to refer to the large size of the specimens in the genus. Gender not given by LALLEMAND (1950); it is proposed to consider it arbitrarily feminine, following the use in the family.

DIAGNOSIS: Differs from all other Oriental genera by the following combination of characters: large size; largely rounded tegmina; clavus nearly closed with claval veins fused; hind wings narrower than tegmina and infra-ocular spines present. Oriental region.

DESCRIPTION: General coloration: yellowish and red.
Head: narrower than thorax; vertex about 3 times broader than long, with transverse furrow; fore and hind mar-
**Macrobrachys tonkinensis**

**Lallemand, 1950**

Fig. 2, plate 1 A-D.

**Macrobrachys tonkinensis** Lallemand, 1950: 150.


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

**Description:** LT: ♀ (n = 2): 29.3 mm (29.0 to 29.6).

*Head:* Brownish yellow, frons little paler; vertex bearing white waxy spots on posterior 1/2; ratio BV/LV = 3.05; BF/LF = 1.70.

*Thorax:* pro & mesonotum, metathorax and tegulae, brownish yellow; pro- & mesosternum red; ratio LP+LM/ BT = 0.65.

*Tegmina:* Brownish yellow with basal 3/8 reddish; underside with basal 3/8 bright red; veins concolorous or paler: yellow in reddish zone and greenish in yellow zone; white, waxy spot on disc at 2/3; costal margin somewhat infuscate near base; ratio LTg/BTg = 2.16.

**Hind wings:** white, slightly rosy on basal 1/3.

**Legs:** reddish yellow to greenish yellow with spines of legs III infuscate apically.

**Abdomen:** red.

**Genitalia:** ♀: anal tube elongate and narrow, v-shaped in cross section and angularly directed postero-ventrad beyond anus; anus at first 1/3; gonoplacs unilobous, sur­ passed posteriorly by anal tube; gonapophysis IX large, rounded, higher than long in lateral view; gonocoxae VIII looking like inflated pouch; gonapophysis VIII reduced; gonoplacs, gonapophysis IX and gonocoxae VIII covered with long hairs; sternite VII with hind margin modified, largely v-shaped with median rounded process directed caudad; all genitalia covered with white waxy filaments in fresh specimens.

**Biology:** The only available information about this species is that it has been collected in “Central Tonkin”.

**Discussion**

The large size and bright colour of *Klapperibrachys cremeri* have lead to the peculiar taxonomic history of the genus *Guenteria* but the shape of the frons with lateral projections, of female genitalia with large, lobous gonoplacs and the second hind tarsomere without apical spines leave no doubt that it must be placed in the family Eurybrachiidae.

The genus *Macrobrachys*, despite its large size, remains very scarce in collections: even after considerable inves­ tigation in collections worldwide, only 2 specimens have been found for this genus. As for many Eurybrachiidae, all about its biology is still to be discovered. Males are still unknown too and it is possible that, as in several other related genera, they will be smaller and darker than females.

Following the classification by Schmidt (1908) and Metcalf (1956), both genera are here provisionally placed in the Eurybrachiinae, Loxocephalini [main distinctive features of the Loxocephalini Schmidt (1908): (1) clavus open, (2) claval veins fused, (3) infra-ocular spine present].
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References


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