

## Largidae and Pyrrhocoridae (Heteroptera) of Meghalaya state, India

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STEHLÍK J. L. 2007: Largidae and Pyrrhocoridae (Heteroptera) of Meghalaya state, India. *Acta Musei Moraviae, Scientiae biologicae* (Brno) **92**: 115–129. – A collation of Pyrrhocoroidea of Meghalaya state (northern India) is given, including 29 species. *Ectatops dembickyi* sp.nov. is described, and *Euscopus fletcheri* Ahmad et Abbas, 1985, syn.nov., is placed as a junior synonym of *E. vittiventris* (Walker, 1872). The allometry of *Macrocheraia grandis* (Grey, 1832) and species of the genus *Physopelta* Amyot et Serville, 1843, as well as their sexual dimorphism, are described and discussed.

**Key words.** Pyrrhocoroidea, Largidae, Pyrrhocoridae, Heteroptera, Meghalaya, India, new species, new synonym, allometry, sexual dimorphism

### Introduction

In 1835, the colonial administration of the time incorporated the territory of Meghalaya state into the state of Assam. The autonomous state of Meghalaya was established on January 21, 1972. The Khási (or Khasia) and Garo (or Garró) mountain ranges there had already attracted some attention from collectors by the time of W. L. Distant, an author who recorded the occurrence of 15 species of Pyrrhocoroidea in the area in an extensive monograph (DISTANT 1903). After that time, for about 100 years, no species of this superfamily was mentioned from this area, apart from *Dysdercus cingulatus* (Fabricius, 1775), a species of economic importance (KAPUR & VAZIRANI 1960). The reason for this lack may be found in the fact that the region was restricted after World War II in the interests of security; only in recent years has the situation stabilised enough for it has be possible to conduct research there. Recently, several pyrrhocoroid species described as new for science (all with a somewhat wider range) have been reported from the area: *Iphita rubricata* Stehlík et Jindra, 2006, *Jindraia dimorphica* Stehlík, 2006, *Dindymus bifurcatus* Stehlík et Jindra, 2006, *Dindymus dembickyi* Stehlík, 2006, and *Dindymus multidentatus* Stehlík, 2005.

Given that the area has now been investigated more thoroughly, I assume it appropriate to review the older records, to collate the scattered data published so far and to publish them in the following overview, together with some additions. The present work records another 7 species previously not reported from this area, of which one is new for science. Twenty-nine species of Pyrrhocoroidea are known from this area to date.

### Material and Methods

The families and species herein are listed in alphabetical order. For each species, distribution is based on published records.

The following abbreviations are used in for distribution data: OR = Oriental Region, PA = Palearctic Region.

The following abbreviations are used for the collections in which the material is held:

BMNH ..... The Natural History Museum, London, United Kingdom  
ISNB ..... Institut royal des Sciences Naturelles de Belgique, Bruxelles, Belgium  
MMBC ..... Moravian Museum, Brno, Czech Republic  
NHMB ..... Naturhistorisches Museum, Basel, Switzerland  
PPUA ..... Czech University of Agriculture, Department of Plant Protection, Prague,  
Czech Republic  
ZJPC ..... The Z. Jindra collection, Prague, Czech Republic

## Results

### LARGIDAE

#### Physopeltinae: Physopeltini

##### *Iphita limbata* Stål, 1870

**Material examined:** 3 km E of Tura, 25°30' N, 90°14' E, 500–1150 m, 15.–22.v.1999, Z. Košťál leg., 1 ♂ (ZJPC); ditto, 15.–22.vi.2007 L. Dembický leg., 1 ♀ (macropterous), 1 ♀ (cryptobrachypterous) (MMBC).

**Published record.** DISTANT (1903): North Khási Hills.

**Distribution.** OR: India, Nepal, Bangladesh, Myanmar (Tenasserim), Thailand, Laos, Indonesia (Sumatra). PA: China.

**Note.** Cryptobrachyptery occurs in this species, in similar fashion to that in *I. varians* (Breddin, 1909), but less often. These specimens are smaller, with the lateral margins of the pronotum almost parallel. The female collected at the locality above is further characterized by a narrower membrane that reaches only the base of mesotergite VII.

##### *Iphita rubricata* Stehlík et Jindra, 2006

**Published record.** STEHLÍK & JINDRA (2006b): West Garo Hills, Bagrama, GPS 25°11.5' N, 90°38.5' E, alt. 100±50 m, 19.–21.v.1996, E. Jendek & O.Šauša leg., holotype: 1 ♀ (PPUA).

**Distribution.** OR: India (Meghalaya).

##### *Jindraia dimorphica* Stehlík, 2006

**Published record.** STEHLÍK (2006): 3 km of Tura, 26°30' N, 90°14' E, 500–1150 m, 15.–22.vii.1999, J. Rolčík leg., holotype: 1 ♂ (brachypterous) (PPUA).

**Distribution.** OR: India (Meghalaya, Sikkim)

***Physopelta cincticollis* Stål, 1863**

**Material examined:** SW of Cherrapunjee, 25°13–15' N, 91°40' E, 500–900 m, 11.–12.v.2004, L. Dembický leg., 2 ♂♂ 7 ♀♀ (MMBC); 3 km E of Tura, 25°30' N, 90°14' E, 500–1150 m, 15.–22.vi.2007, L. Dembický leg., 1 ♀ (MMBC).

**Distribution.** OR: Eastern India, Thailand, Northern Laos, Indonesia (Sumatra). PA: China, Taiwan, Korea, Japan. New for Meghalaya state.

***Physopelta gutta gutta* (Burmeister, 1834)**

**Material examined:** SW of Cherrapunjee, 25°13–15' N, 91°40' E, 500–900 m, 11.–12.v.2004, L. Dembický leg., 8 ♂♂ 7 ♀♀ (MMBC); ditto, 500–950 m, 29.iv.–22.v.2005, L. Dembický leg., 13 ♂♂ 23 ♀♀ (MMBC); West Garo Hills, Nokrek Nat. Park, GPS 28°29.6' N, 90°19.5' (WGS 84) 1100±150 m, 9.–17.v.1996, E. Jendek & O. Šauša leg., 1 ♀ (ZJPC); ditto, Nokrek Nat. Park, 3 km S of Daribookgiri, 25°27' N, 90°19' E, 1400 m, 26.iv.1999, Z. Košťál, 1 ♂ 1 ♀ (ZJPC); 3 km E of Tura, 25°30' N, 90°14' E, 500–1115 m, 1.–8.v.1999, Z. Košťál leg., 1 ♂ 1 ♀ (ZJPC); ditto, 6.–12.v.2002, M. Trýzna & P. Benda leg., 1 ♀ (ZJPC); ditto, 15.–22.vi.2007, L. Dembický & P. Pacholátko leg., 10 ♂♂ 12 ♀♀ (MMBC); 8 km N of Shillong, 25°38' N, 91°54' E, 1200 m, 7.–9.v.2004, L. Dembický leg., 6 ♂♂ 7 ♀♀ (MMBC).

**Published record.** DISTANT (1903): North Khási Hills.

**Distribution.** OR: Pakistan, India, Sri Lanka, Nepal, Myanmar, Thailand, Laos, Indonesia (Sumatra, Kalimantan, Sulawesi, Timor), Philippines. PA: Afghanistan, China, Taiwan, Korea, Japan. Extralimital subspecies: *Physopelta gutta famelica* Stål, 1863: New Guinea with adjacent islands, Sulawesi and Australia.

**Note.** KERZHNER (2001) gave the distribution of both subspecies – *P. gutta gutta* and *P. gutta famelica* – Correctly. In contrast, VOIGT (2006) claims that both subspecies have almost the same range, that is from Afghanistan to New Guinea and Australia. VOIGT (2006) overlooked the fact that HUSSEY (1929), as well as CASSIS & GROSS (2002), gave the overall range of *P. gutta* and not of nominotypical *P. gutta gutta*. Data on the distribution of *P. g. famelica* were given separately in these works. A subspecies (geographical race) has its own range and can be connected (in some cases) with the adjacent subspecies by a hybrid zone. If the two ranges were to overlap to this extent, it would indicate the existence of two sympatric species. However, this is not the case. The differences between the two races are minute. *Physopelta g. gutta* has an evenly rounded medial spot, whereas in *P. g. famelica* this spot has an irregular outline, but it can also be almost as round as in *P. g. gutta*. Both races also have the same coloration, which can vary somewhat. The present author had the opportunity to study dozens of specimens of both races from their entire area of distribution. He recorded the western-most finding of *P. g. famelica* on Sulawesi.

The use of the anterior disc (callar lobe) as a discrimination character of both subspecies by VOIGT (2006) is not appropriate. In all the studied species of *Physopelta* Amyot et Serville, 1843 occurring in the Oriental, Australian, and Palearctic Regions there is sexual dimorphism in the elevation of the callar lobe. In females this is slightly convex, but strongly convex in males. In males from these regions, sexual differences may be further accentuated by a certain type of allometry. This is evident in males in

a larger body, a more convex callar lobe, a substantially thicker profemur with a higher number of denticles on it, and sometimes also by a slight incurvation of the protibia in its basal part. In females the allometry is less apparent and only manifest in an increase in body size. Smaller (Fig. 1) males are more similar to females. This type of allometry may also be frequently encountered in some tribes of Rhyparochromidae, in Pyrrhocoridae (genus *Scantius* Stål, 1866) and in Larginae (genus *Fibrenus* Stål, 1861). In the last instance it is only manifested in the elevation of the callar lobe. As far as differences between the sexes are concerned, it has to be said that males have a row of small denticles on the ventral side of the protibia that is missing in females.

In conclusion, it seems appropriate to state that several types of allometry occur in Pentatomomorpha and the individual types are in general associated with some higher taxa. I am not aware of any more detailed study of this problem within Pentatomomorpha.

### Lohitini

#### *Macrocheraia grandis grandis* (Grey, 1832)

**Material examined:** West Garo Hills, Tura env., 25°31' N 90°14' E, 700 m, 5.–7.v. 1996, E. Jendek & O. Šauša leg., 2 ♀♀ (ZJPC); 3 km E of Tura, 25°30' N, 90°14' E, 500–1500, 15.–22.iv.1999, J. Rolčík & Z. Košťál leg., 5 ♂♂ 3 ♀♀ (ZJPC); ditto, 1150 m, 4.v.1999, L. Dembický & P. Pacholátka leg., 10 ♀♀ (MMBC).

**Published record.** DISTANT (1903): North Khási Hills.

**Distribution.** OR: India, Nepal, Bangladesh, Myanmar, Laos. PA: China. Extralimital subspecies: *Macrocheraia grandis sumatrana* Distant, 1882: Sumatra, Borneo, ?Philippines.

**Allometry.** The size differences between individual specimens are in general rather pronounced. Unfortunately, AHMAD & ABBAS (1985a) gave a single total body length measurement of 55.20 mm for the male and 32.20 mm for the female, although they had 4 males and 8 females at their disposal. The same applies to the measurements of individual body parts. However, it has to be pointed out that allometry in this species is one of the most developed among Heteroptera.

DISTANT (1903) reported rather substantial differences in total body size (males 40 to 54 mm, females 28 to 33 mm). In fact this range is even greater. Investigation of voucher specimens from Meghalaya revealed the following size differences: in males (n = 5) 28.5 to 62.5 mm, in females (n = 15) from 26 to 38 mm (Figs 2a, 2b).

In the given species, allometry is expressed in males as an increase in body size and prolongation (sometimes very substantial) of the abdomen and antennae. In females, allometry is less distinct and restricted to an increase in body size and prolongation of the antennae. Most females (at least on the Indian subcontinent) are submacropterous (membrane usually slightly exceeds mesotergite VII), only rarely macropterous (apparently the original state), although the macropterous morph might be more frequent in some populations. AHMAD & ABBAS (1985a) wrote: “*Abdomen never entirely covered*

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Male 36 mm		Male 59.5 mm		Factor
I	16.8	I	38	2.26×
II	13	II	28	2.15×
III	10.5	III	19.5	1.86×
IV	3.5	IV	4.7	1.27×

Female 27 mm		Female 38 mm		Factor
I	8.5	I	17.5	2.06×
II	8	II	14.5	1.81×
III	6.5	III	11	1.69×
IV	4	IV	4.5	1.12×

**Tab. 1.** Comparison of the lengths (mm) of individual antennal segments (I–IV) between a small (36 mm) and a large (59.5 mm) male specimen with the factor of increase from small to large given in the third column; the same for females (small 27 mm, large 38 mm).

by membrane". Small females are rare. With regard to the large body of material available to me from the Indian subcontinent, most males are large and these have a membrane that does not usually fully reach the apex of mesotergite IV. In small males, which are rarer, the membrane usually reaches halfway along mesotergite V. Some size variation in the larger males may be found, but only very few specimens intermediate between the large and small males have been collected.

This data demonstrates that the most pronounced allometry is found in the first antennal segment in males as well as females and differences between segment lengths decrease towards the last segment. The last antennal segment is least affected by this allometry; in some cases the length of this segment is the same in small and large specimens.

The morphological differences between the sexes can also be observed in nymphs (Fig. 2c) of instar V in regard to the development of antennae and legs (sex check based on developing genitalia). Younger nymphal stages are, unfortunately, not available.

## PYRRHOCORIDAE

### *Antilochus coquebertii* (Fabricius, 1803)

**Material examined:** Baropani, Old Road, 1000 m, 14.v.1976, W. Wittmer & Baroni U., 1 ♂ 1 ♀ (NHMB); 3 km E of Tura, 25°30' N, 90°14' E, 500–1150 m, 15.–22.vi.2007, L. Dembický leg., 1 ♀ (MMBC).

**Distribution.** OR: Kashmir, India, Andaman Isl., Nepal, Myanmar, Laos, Thailand, Vietnam, Malaysia (Malacca). PA: China, Taiwan, Japan. New for Meghalaya.

***Antilochus kubani* Stehlík, 2005**

**Published record.** STEHLÍK (2005): 3 km E Tura, 25°30' N, 90°14' E, 1500 m, 4.v.1999, L. Dembický & P. Pacholátko leg., paratypes: 3 ♂♂ 1 ♀ (MMBC).

**Distribution.** Nepal, India (Meghalaya), Laos.

***Antilochus russus* Stål, 1863**

**Published record.** DISTANT (1903): North Khasi Hills.

**Distribution.** OR: India (Assam, Sikkim), Nepal, Bhutan, Myanmar, Thailand. PA: China.

**Note.** I cannot exclude the possibility that the record by DISTANT (1903) might actually refer to the similar, recently described, *Antilochus kubani*, which has been found in Meghalaya state. The voucher specimen of *A. russus* was not found in BMNH (M. Webb, pers. comm.).

***Armatillus timarchulus* (Breddin, 1912)**

**Material examined.** 1 km of Tura, 25°30' N, 90°14' E, 500–600 m, 2.–5.v.2002, M. Trýzna & P. Benda leg., 2 ♀♀ (ZJPC).

**Distribution.** OR: India (Tamil Nadu, Meghalaya). New for Meghalaya state.

***Dindymus (Dindymus) bifurcatus* Stehlík et Jindra, 2006**

**Published record.** STEHLÍK & JINDRA (2006a): 1 km E of Tura, 25°30' N, 90°14' E, 500–600 m, 2.–5.v.2002, M. Trýzna & P. Benda leg., paratype: 1 ♀ (ZJPC).

**Distribution.** OR: India, Malaysia (Sabah).

***Dindymus (Dindymus) dembickyi* Stehlík, 2006**

**Material examined:** Khasi Hills, Mawsynram, 25°13' N, 91°21' E, 800–1000 m, 5.–9.vi.2006, L. Dembický leg., 1 ♀ (MMBC), 3 km E of Tura, 25°30' N, 90°14' E, 500–1150 m, 15.–22.vi.2007, L. Dembický leg., 2 ♂♂ 1 ♀ solitary and 2 ♂♂ 2 ♀♀ in copula (MMBC).

**Published records.** STEHLÍK (2006): 3 km E of Tura, 25°30' N, 90°14' E, 4.v.1999, 1500 m, L. Dembický & P. Pacholátko leg., paratypes: 3 ♂♂ 2 ♀♀ (MMBC); ditto, 500–1500 m, 15.–22.v.1999, Z. Košťál leg., paratypes: 2 ♀♀ (ZJPC); ditto, 1.viii.1999, J. Rolčík leg., paratype: 1 ♀ (ZJPC).

**Distribution.** OR: India (Sikkim, Nagaland, Meghalaya), Myanmar.

***Dindymus (Dindymus) lanius* Stål, 1863**

**Material examined.** Khasia Hills, 1 ♀ (ISNB); West Garo Hills, reg. Tura, GPS 25°30.7' N, 90°13.9' E, 5.–7.v.1996, E. Jendek & O. Šauša leg., 1 ♂ 2 ♀♀ (ZJPC); 3 km E of Tura, 25°30' N, 90°14' E, 500–1100 m,

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15.–22.v.1999, Z. Košťál leg., 2 ♂♂ 3 ♀♀ (ZJPC); ditto, 1150 m, 6.–12.v.2002, M. Trýzna & P. Benda leg., 1 ♂ 1 ♀ (ZJPC); Nokrek Nat. Park, 3 km of Daribookairi, 25°27' N, 90° 19' E, 1400m, 26.iv.1999, Z. Košťál leg., 1 ♀ (ZJPC).

**Published record.** DISTANT (1903): Khási Hills.

**Distribution.** OR: India (Meghalaya), Myanmar.

***Dindymus (Dindymus) multidentatus* Stehlík, 2005**

**Published record.** STEHLÍK (2005): “Khasia Hills”, paratype: 1 ♂ (BMNH); “N. Khasia”, paratype: 1 ♀ (BMNH); 3 km E of Tura, 25°30' N, 90°14' E, 15.–22.v.1999, Z. Košťál leg., paratype: 1 ♀ (ZJPC).

**Distribution.** OR: India (Assam, Meghalaya), Bhutan, Thailand. PA: S China (Guizhou).

***Dindymus (Dindymus) rubiginosus* (Fabricius, 1787)**

**Material examined:** SW of Cherrapunjee, 25°13–14' N, 91°40' E, 500 m, 29.iv.–22.v.2005, L. Dembický leg., 1 ♂ 1 ♀ (MMBC).

**Published record.** DISTANT (1903): North Khasi Hills.

**Distribution.** OR: India, Myanmar, Thailand, Laos, Indonesia (Sumatra, Java, Lombok, Sulawesi, Timor). PA: China, Taiwan.

***Dysdercus (Paradysdercus) cingulatus cingulatus* (Fabricius, 1775)**

**Material examined:** 3 km E of Tura, 25°30' N, 90°14' E, 500–1150 m, 15.–22.vi.2007, L. Dembický & P. Pacholátko leg., 8 ♂♂ 12 ♀♀ (MMBC).

**Published records.** DISTANT (1903): North Khási and Gáro Hills. KAPUR & VAZIRANI (1960): Shillong.

**Distribution.** OR: India, Nepal, Myanmar, Thailand, Laos, Vietnam, western and eastern Malaysia, Philippines, Indonesia (Sumatra, Java, Bali, Baggi, Balabac, Pulo Laut, Sulawesi, Talaud, Banda, Ternate, Obi, Seram, Ambon, Taninbar, Halmahera, Kei, Irian Jaya), Papua New Guinea (Papua, New Britain, New Ireland), Solomon Islands. Australia. PA: China, Taiwan, Japan.

***Dysdercus (Paradysdercus) evanescens* Distant, 1902**

**Material examined:** SW of Cherrapunjee, 25°13–15' N, 91°40' E, 500–950 m, 29.iv.–22.v.2005, L. Dembický leg., 1 ♀ (MMBC); 3 km E of Tura, 25°30' N, 90°14' E, 500–1,150 m, 15.–22.vi.2007, L. Dembický & Pacholátko 2 ♂♂ 2 ♀♀ (MMBC).

**Published record.** DISTANT (1903): Khási and Garo Hills.

**Distribution.** OR: India, Nepal, Myanmar, Thailand, Laos, Vietnam. PA: China.

*Ectatops dembickyi* sp.nov.

**Type material.** Holotype: ♂, India, Meghalaya, SW of Cherrapunjee, 25°13–15'N, 91°40' E, 500–900 m, 11.–12.v.2004, L. Dembický & P. Pacholátka leg. (MMBC).

Paratypes: Same data as holotype, 1 ♀ (MMBC); ditto, 500–950 m, 29.iv.–22.v.2005, L. Dembický leg., 4 ♂♂ (1 ♂ MMBC, 1 ♂ BMNH, 2 ♂♂ NHMB).

**Description.** Coloration. Head dorsally, antennal segment I narrowly at base, eye socket ventrally, antenniferous tubercle, pronotum, mesoscutellum, clavus, corium, hypocostal lamina and laterotergites (both dorsal and ventral), red. Head ventrally, labium, median furrow on pronotum, mesoscutum, and sternum (including epicoxal lobes), black. Membrane grey, with large, round, black central spot. Wider basal area of last antennal segment black, followed by light, rather wide annulus (which can be darker to the point of its disappearance in some specimens), distal part (almost half of the segment) black. Basic coloration of ventrites and genitalia in both sexes yellow. Extent of black coloration differs between sexes. In males, ventrites II–V black, ventrites IV and V medially with rounded yellow spot, ventrite VI medially and ventrite VII laterally with black luniform stripe on their bases. In females, only ventrites II and III black, ventrites IV–VI laterally with black luniform stripe both proximally and distally; distal stripes merge into one with proximal ones of following segment, on ventrite VII stripe present only proximally.

Structure. Body large, particularly at level of claval apex substantially widened. Head wide, its inclination *ca.* 45°. Eye socket rather long, markedly elevated. Head in front of eyes up to antenniferous tubercle not narrowing, rather conspicuously elongate. Antennal segment III slender at base, gradually widening. Callar lobe evenly and rather substantially arched, pronotal lobe gradually rising upwards. Lateral margin medially very sinuate. Mesoscutellum evenly arched, apex flat. Labium reaches midpoint of ventrite IV. Fore-femora with two denticles ventrally in apical part and in some cases with an additional small one.

Puncturation distinctly black. On proximal and distal margin of callar lobe very conspicuous, laterally less so. Pronotal lobe with regular puncturation (except proximal and distal margin); the same applies to distal half of mesoscutellum, clavus and corium. The three latter parts with punctures of same size as on pronotal lobe.

Pilosity. Body with sporadic (on ventrites somewhat denser), silvery pubescence. Head with small light hairs ventrally.

Male genitalia. Ventral wall of genital capsula with ventral rim rather conspicuously higher than remaining upper margin of genital capsule. Shape of ventral rim best visible from inner side of capsula, medially arched, but apically slightly sinuate, laterally on each side with one protuberance, the inner edge of which is almost perpendicular, the outer slightly inclined and then somewhat broken towards lateral rim. Ventral rim infolding falls almost vertically into genital chamber. Behind the border between ventral and lateral rim infolding a protuberance, its upper part pale and with bow-shaped depression. On inner side with elongate high keel with dark borders followed by elongate, low, light protuberance, above with depression. Lateral rim infolding at its third bent into genital chamber, remaining two-thirds almost horizontal. Parameres strong, wide, rather flat, broken from middle towards centre of capsula, in their last third again bent and apices



close to each other, parallel. From outer side somewhat hollow, upper rim stronger and very rounded with only a very feeble, blunt hook towards phallus. Ventral rim with dense, light hairs, structures therefore poorly visible.

Female genitalia. Indentation of ventrite VII for female genitalia large and markedly sinuate. Width of genitalia 2.32 mm, height 1.24 mm. Valvifer I large, convex, inner and upper rim rounded. Laterotergite VIII triangular, laterotergite IX reaches upper margin of valvifer I with a skewed longitudinal depression in the middle. All parts densely covered by light hairs, therefore even the structure of the visible part of valvifer II not clear.

Measurements (mm, given as means followed by ranges). Males. Body length 13.20 (12.47–13.72); head: width (including eyes): 3.01 (2.94–3.08), interocular width 1.76 (1.73–1.78); antennal segments: I 2.89 (2.75–3.13), II 2.46 (2.32–2.65), III 2.05 (2.00–2.11), IV 2.23 (2.13–2.32); pronotum: length 2.65 (2.59–2.75), width 4.20 (4.05–4.43); scutellum: length 1.70 (1.57–1.78), width 2.31 (2.27–2.38); corium: length 6.21 (5.94–6.37), width 2.61 (2.54–2.78). Female. Body length 15.98; head: width (including eyes): 3.40, interocular width 2.00; antennal segments: I 3.35, II 2.92, III 2.43, IV 2.67; pronotum: length 3.24, width 5.18; scutellum: length 2.11, width 2.92; corium: length 7.83, width 3.13.

**Derivatio nominis.** The species is named in honour of Luboš Dembický of the Moravian Museum in Brno, who collected this new species, as well as many other interesting species, on his expeditions to the Oriental Region.

**Differential diagnosis.** The new species is phylogenetically related to *E. indignus* (Walker, 1873), as both show a similar type of sexual dimorphism in the coloration of their ventrites. In both species the basic coloration of the ventrites is yellow. In the male of *E. indignus* ventrites I and III whole, ventrites IV and V only laterally black (in the new species ventrites IV and V only with a yellow, transversally oval spot. In *E. indignus* the black lateral bands on the proximal margins of ventrites VI and VII are narrower than in the new species. The female of *E. indignus* differs even more from the female of *E. dembickyi* sp.nov. Only ventrite II is black, the other ventrites are entirely yellow except the intersegmental sulci, which are narrowly black. The ventral and dorsal laterotergites are in *E. indignus* orange and not red, as in the new species, and antennal segment IV is all black (in the new species with a light, rather wide annulus). The new species has only been found with a red dorsal surface (except membrane), whereas in *E. indignus* about one half of the population has predominantly black dorsal coloration, only the pronotal margins and the costal margin of the corium are red in these specimens.

*Ectatops indignus* is more slender and substantially smaller. Therefore only the measurements of a single pair are given below for comparison. Measurements (mm). Male. Body length 11.07; head: width (including eyes): 2.70, interocular width 1.57; antennal segments: I 2.32, II 1.67, III 1.46, IV 1.94; pronotum: length 2.16, width 3.51; scutellum: length 1.46, width 1.89; corium: length 5.02, width 2.08. Female. Body length 14.15; head width (including eyes): 3.11, interocular width 1.94; antennal segments: I 2.65, II 1.89, III 1.73, IV 2.13; pronotum: length 2.89, width 4.48; scutellum: length 1.86, width 2.43; corium: length 7.07, width 2.78.

**Note.** DISTANT (1903) reported *Ectatops rubiacea* Amyot et Serville, 1843 from Meghalaya state (Shillong). This is only a coloration aberration of *E. ophthalmicus* (Burmeister, 1834). However, this species does not occur in India and therefore it is most probable that the specimens collected were *E. dembickyi* sp.nov. The voucher specimen was not found in the BMNH (M. Webb, pers. comm).

***Ectatops gelanor* Kirkaldy et Edwards, 1902**

**Material examined:** SW of Cherrapunjee, 25°13–14' N, 91°40' E, 500–950 m, 11.–12.v.2004, L. Dembický leg., 1 ♂ 2 ♀♀ (MMBC).

**Distribution.** OR: India (Meghalaya), Myanmar, Laos. New for India.

***Euscopus indecorus* (Walker, 1872)**

**Material examined:** 3 km E of Tura, 25°30' N, 90°14' E, 1150 m, 6.–12.v.2002, M. Trýzna & P. Benda leg., 5 ♀♀ (ZJPC).

**Published record.** DISTANT (1903): North Khasi Hills.

**Distribution.** OR: India (Nagaland, Meghalaya), Myanmar, Laos, Thailand.

***Euscopus rufipes* Stål, 1870**

**Material examined:** SW of Cherrapunjee, 25°13–15' N, 91°40' E, 500–900 m, 11.–12.v.2004, L. Dembický leg., 1 ♂ 1 ♀ (MMBC); 8 km N of Shillong, 25°38' N, 91°54' E, 1200 m, 7.–9.v.2004, L. Dembický 1 ♂ 1 ♀ (MMBC).

**Published record.** DISTANT (1903): North Khási Hills.

**Distribution:** OR: India (Assam, Nagaland, Meghalaya), Nepal, Myanmar, Laos, Thailand, Indonesia (Java, Sumatra, Pulo Laut I. near Kalimantan). PA: China, Taiwan.

***Euscopus vittiventris* (Walker, 1872)**

*Euscopus fletcheri* Ahmad et Abbas, 1985b **syn.nov.**

**Material examined:** SW of Cherrapunjee, 25°13–14' N, 91°40' E, 500–950 m, 29.iv.–22.v.2005, L. Dembický leg., 9 ♂♂ 13 ♀♀ (MMBC).

**Note.** AHMAD & ABBAS (1985b) described the new species *Euscopus fletcheri* based on two males found on an apple tree (*Malus pumilo* May, 1920) in the environs of Shillong. I am sorry to say that the picture of the entire animal corresponds neither with the description nor with reality. The authors have compared the new species to *E. rufipes*, not mentioning *E. vittiventris* at all, despite the fact that all characters given in their description correspond with this species (overall coloration, sanguineous middle portion of ventrites, and shape of genital capsule). The species *E. vittiventris* is abundant in the

area of Shillong, occurring mostly on dead trees. I have no doubts that the specimens described were actually *E. vittiventris*.

**Distribution:** OR: Northern India.

***Melamphaus faber* (Fabricius, 1787)**

**Published record.** DISTANT (1903): North Khási Hills.

**Distribution.** OR: India (Meghalaya, northern west Bengal), Myanmar, Laos, Southern Vietnam, Malaysia (Malacca), Indonesia (Sumatra, Komodo; Borneo – no detailed data), Philippines (Mindanao, Mindoro, Masbate, Basilan). PA: China, Japan (Ryukyu Islands), Taiwan (Laniu Isl.).

***Melamphaus rubrocinctus* (Stål, 1863)**

**Published record.** DISTANT (1903): Khási Hills.

**Distribution.** OR: India (Assam, Meghalaya, Nagaland), Nepal, Myanmar, Laos. PA: China.

***Probergrothius varicornis* (Fabricius, 1787)**

**Material examined:** 1 km E of Tura, 28°30' N, 90°14' E, 500–600 m, 10.–15.vi.2002, M. Trýzna & P. Benda leg., 1 ♀ (ZJPC).

**Distribution.** OR: India, Sri Lanka. New for Meghalaya.

***Pyrrhopeplus impictus* Hsiao, 1964**

**Material examined.** 3 km of Tura, 28°30' N, 90°14' E, 1150 m, 4.v.1999, L. Dembický & P. Pacholátko leg., 1 ♀ (MMBC); ditto, 15.–22.v.1999, Z. Košťál leg., 1 ♀ (ZJPC); ditto, 15.–22.vi.2007, L. Dembický leg., 1 ♀ (MMBC).

**Distribution.** OR: India (Meghalaya), Thailand, Laos. PA: China. New for India.

***Pyrrhopeplus posthumus* Horváth, 1892**

**Material examined.** Shillong, 1 ♀ (ISNB); 8 km N of Shillong, 25°38' N, 91°54' E, 1200 m, 7.–9.v.2004, L. Dembický leg., 1 ♂ (MMBC); SW of Cherrapunjee, 25°13–15' N, 91°40' E, 500–900 m, 11.–12.v.2004, L. Dembický leg., 1 ♂ (MMBC); ditto, 500–950 m, 29.iv.–22.v.2005, Dembický leg., 2 ♂♂ 1 ♀ (MMBC); West Garo Hills, Nokrek, GPS 25° 29.6' N, 90°19.5' E 1100 ± 150 m, 9.–17.v.1996, E. Jendek & Šauša leg., 1 ♀ (ZJPC); 3 km of Tura, 25°30' N, 90°14' E, 1150 m, 4.v.1999, L. Dembický & P. Pacholátko leg., 4 ♂♂ 2 ♀♀ (MMBC); ditto, 500–1,150 m, 15.–22.v.1999, Z. Košťál leg., 1 ♂ (ZJPC); ditto, 15.–22.vi.2007, L. Dembický & P. Pacholátko leg., 1 ♂ 1 ♀ (MMBC).

**Published record.** DISTANT (1903): Shillong.

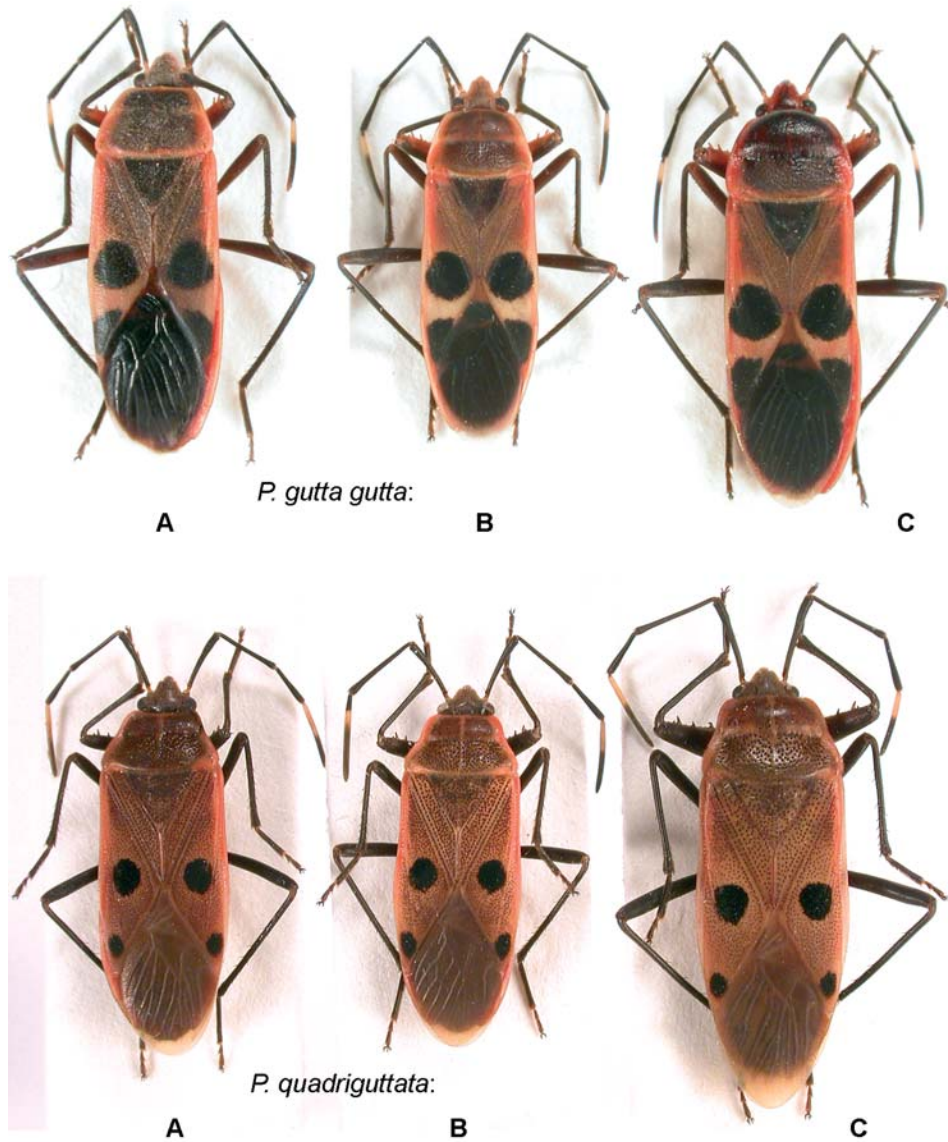
**Distribution.** OR: India (Sikkim, Meghalaya, Nagaland), Bangladesh (Sylhet), Nepal, Myanmar, Thailand, Laos, Vietnam. PA: China.

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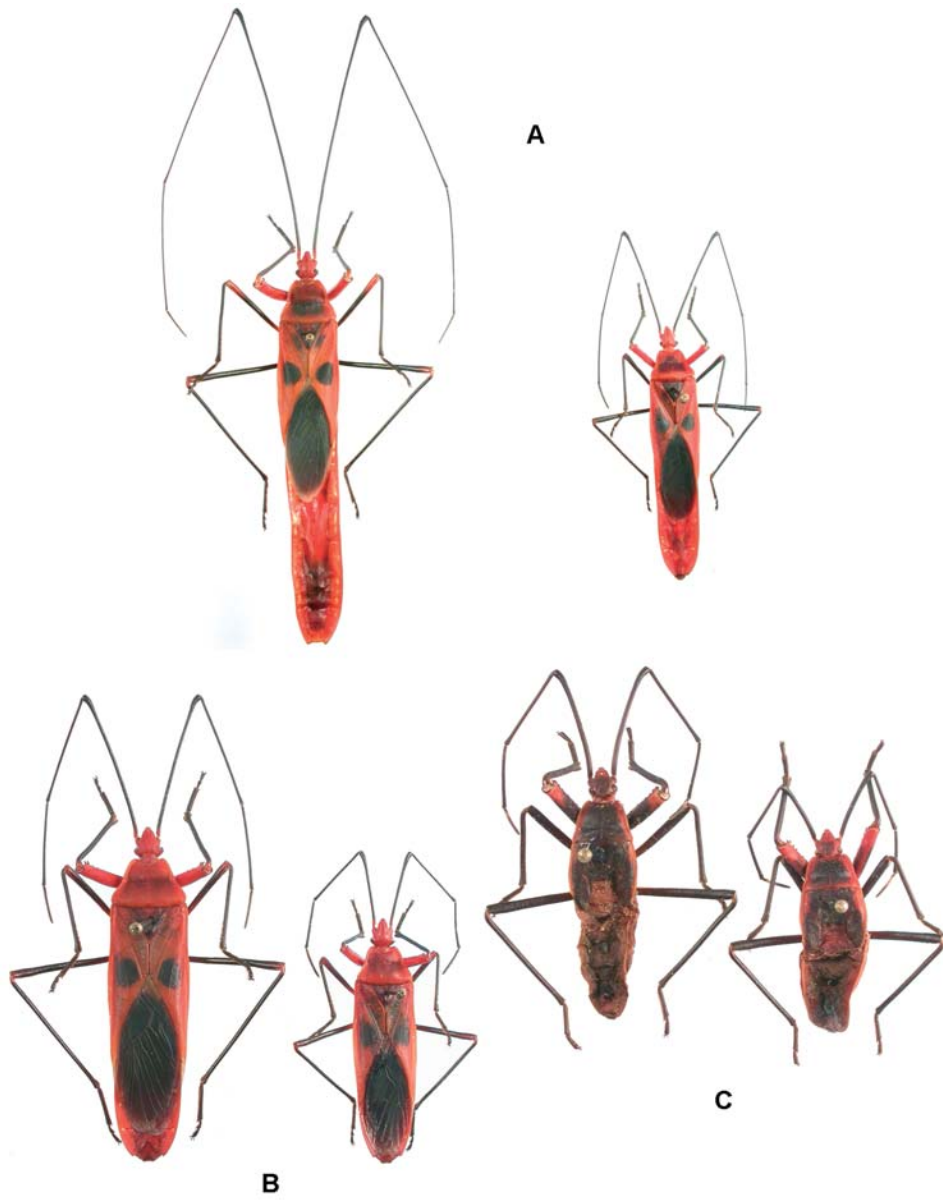
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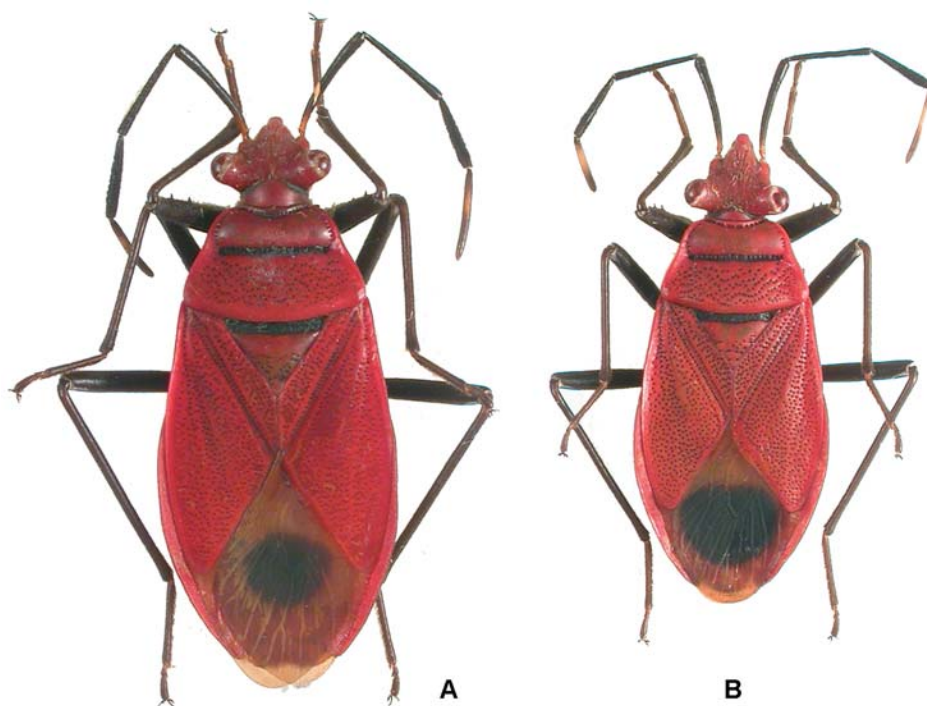
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**Fig. 1.** Sexual dimorphism and allometry in *Physopelta* spp.: Left (A) female; centre (B) small male (sexual dimorphism less distinct); right (C) large male (distinct sexual dimorphism). Above: *Physopelta gutta gutta* (Burm); below: *Physopelta quadriguttata* Bergroth.



**Fig. 2.** *Macrocheraia grandis grandis* (Grey), A – male, allometry; B – female; C – nymphs of V instar, left future male, right future female.



**Fig. 3.** A – *Ectatops dembickyi* sp.nov., holotype male; B – *Ectatops indignus* (Walker), male.