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# A review of the Liturgusidae of Borneo (Insecta: Mantodea)

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**Abstract.** Liturgusidae is a small family of praying mantids that is represented by four species in Borneo. Keys to the Bornean taxa are provided with illustrations of the distinguishing features. Distribution maps and illustrations are provided for all the Bornean species; illustrations are also provided for all non-Bornean species of *Majangella* and *Theopompa*. *Majangella moultoni* Giglio-Tos 1915 is recorded from Thailand for the first time. *Theopompa opthalmica* (Olivier 1792) is recorded from Peninsular Malaysia for the first time.

**Keywords:** Borneo, *Humbertiella*, Liturgusidae, *Majangella*, Mantodea, Peninsular Malaysia, Thailand, *Theopompa*

## INTRODUCTION

The mantis family Liturgusidae has a single subfamily that contains 17 genera, and 65 species worldwide (Ehrmann 2002). The Bornean fauna comprises four species in three genera. All are bark mimics, excellently camouflaged and very difficult to find; however, males are often attracted to lights. A key is provided to distinguish the Bornean taxa, and keys to all the species in the two smaller genera. Data is provided for 61 specimens from Borneo and for a few specimens from elsewhere. Most of the specimens recorded here are in my own collection or in the Natural History Museum, London.

Distribution maps are given for the Bornean species, these include published data in addition to the examined material. A variety of methods were used to find the latitude and longitude for each collection site (in Table 1). Since 2001 I have used a hand-held GPS unit to find latitude and longitude for my own collecting. Coordinates for the other sites are taken from published maps or are coordinates that were provided by other people. I have been unable to locate two sites: Ratu Miri logging camp (Kalimantan), and Labu River (Brunei); these two sites are plotted at coordinates that represent my best estimate.

Of the four Bornean species, only *Humbertiella ocularis* has been named and illustrated previously, *Theopompa tosta* has been illustrated but was not identified. Illustrations are provided for all species of *Theopompa* and *Majangella*, including those that are not recorded from Borneo, and both sexes of *H. ocularis*. The male genitalia of three species of *Theopompa* were removed and mounted in Euparal (for method see Bragg 2008: 193); the genitalia of the two Bornean species are illustrated for the first time. Scale lines on illustrations are 1 cm for whole insects, and 1 mm for genitalia.

Specimens in my own collection are given individual accession numbers and prefixed PEB-M; those in the Natural History Museum, London (BMNH) are prefixed BM for specimens accessioned from about 1920, prior to that there is no prefix to the number. Specimens collected by Ling Kai Lin are in the Institute for Tropical Biology and Conservation at University of Malaysia, Sabah (BORN). Species synonyms are listed, based on those given by Ehrmann (2002).

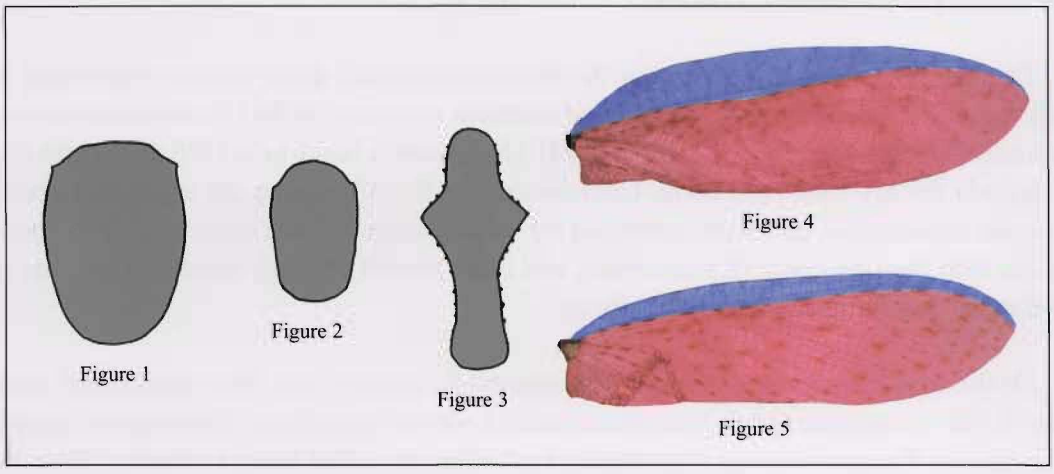
## DIAGNOSIS OF LITURGUSIDAE

Body and tegmina predominantly brown or green, usually bark mimics. Proximal external spine of anterior femur not significantly larger than the others. Ventrolateral (external) spines of anterior tibia straight, erect or only slightly angled, more or less separated from one another with the tip of the spine not obviously overlapping the base of the following spine. Anterior femora with deep pit between first and second external spines, into which the largest external tibial claw fits. Prothorax clearly longer than broad. Eyes markedly bulging: with the dorsal edges reaching at least as far, and often beyond, the crown of the vertex.

### Key to Bornean genera of Liturgusidae

1. Pronotum broad: a smooth oval or shield-shaped (Figures 1 & 2).....2
- Pronotum narrow: with edges parallel but clearly dilated over the leg joints (Figure 3).....*Majangella*

2. Costal area of elytra about half as wide as the discoidal region (Figure 4).....*Theopompa*
- Costal area of elytra much narrower, less than one third as wide as the discoidal region (Figure 5).....*Humbertiella*




**Figures 1-5.** Key features of Liturgusidae.1-3. Shape of the pronotum in: 1. *Theopompa*, 2. *Humbertiella*, 3. *Majangella.* 4-5. Fore wings coloured to show costal region (blue) and discoidal region (red) of 4. *Theopompa* and 5. *Humbertiella.*

## *Humbertiella* Saussure 1869

There are ten species in the genus, most are from the Asian mainland: India, China, Myanmar, Vietnam and from Sri Lanka. *Humbertiella ocularis* Saussure 1872 is the only species to occur in Borneo; it is also the most widespread species in the genus.

***Humbertiella ocularis* Saussure 1872** (Figures 2, 5, 16, 17 & 35)
*Humbertiella ocularis* Saussure 1872: 16-17.
= *Theopompa disparilis* Westwood 1889: 29, Figs 13.2g & 13.3e.

This species was originally described from Borneo; it has since been recorded from Singapore, the Malay Peninsula and New Guinea, and New Zealand (Ehrmann 2002: 190). It has a body length of about 3.5 cm, with the male slightly shorter than the female. Beier (1937: 177) recorded four males from Mt. Dulit and Marudi ("Claudetown") in Sarawak. Helmkampf *et al.* (2007: 5) recorded it from Poring Hot Springs, Sabah. Beier and Helmkampf's records are included on the distribution map.

**Material:**

♂ (PEB-M79) KALIMANTAN Tengah, Kelembenkari, nr Palangkaraya. To light. code M6. P. Jenkins, Aug. 1994.

♂ (PEB-M124) KALIMANTAN Tengah, Sungai Ratu Miri, Ratu Miri Logging Camp. P.E. Bragg, Aug. 1993.

♂ (PEB-M120) SARAWAK, Lambir Hills NP. P.E. Bragg, 19.viii.1992.

♂ (PEB-M224) SABAH, Ulu Dusun. 19.v.198? [ex. C.L. Chan's collection].

2♂♂ (PEB-M225, PEB-M226) SABAH, Ulu Dusun. Anthony Lamb, 1976. [ex. C.L. Chan's collection].

♂ (PEB-M227) SABAH, Ulu Dusun. Simon Wilkie, 17.vi.1984 [ex. C.L. Chan's collection].

♀ (BMNH: BM1977-615) SABAH, Sandakan District, Ulu Dusun. A. Lamb, 22.xii.1975.

♂ (BORN) SABAH, Danum Valley Conservation Area, Light trap. Ling Kai Lin, 09.vi.2009.

♀ (BORN) SABAH, Sukau. Hand collected. 22.viii.2008, Ling Kai Lin.

5♂♂ (BMNH: BM1974-277) SABAH, Sandakan district, Rumidi estate, River Labuk, 50-150ft. Heavy forest near plantations. C.J.M. Pruett, 14-31.ix.1973.

♂ (BMNH: BM1970-24) SABAH, Jesselton. P.J.L. Roache, 15.ii.1968.

♂ (BMNH: [no number]) SABAH, Kota Kinabalu. Dr. P.J.L. Roache, Dec. 1968.

♂ (BMNH: 1926-328) BORNEO, Brunei State, Labu River. R. Dolbey [no date].

♂ (BMNH: BM1931-150) SARAWAK, Dahan. J.M. Bryan, 12.11.

♂ (BMNH: BM1933-254) Sarawak, Foot of Mt. Dulit, Junction of river Tinjar & Lejok. 06.ix.1932. Oxford Univ. Exp. B.M. Hobby & A.W. Moore. "*Theopompula ocularis* Sauss. det. Beier."

## *Majangella* Giglio-Tos 1915

The genus contains only two species. The Bornean species, *Majangella moultoni* Giglio-Tos 1915, was originally described from Sarawak and has since been recorded from Peninsular Malaysia. The other species, *M. carli* Giglio-Tos 1915, is known from Sumatra, Java and Peninsular Malaysia. Although similar, the two species are very easily distinguished by the projection on the head.

**Key to *Majangella***

1. Vertex of head with a bispinose projection (Figure 6).....*M. moultoni*
- Vertex of the head with a simple conical projection (Figure 7).....*M. carli*

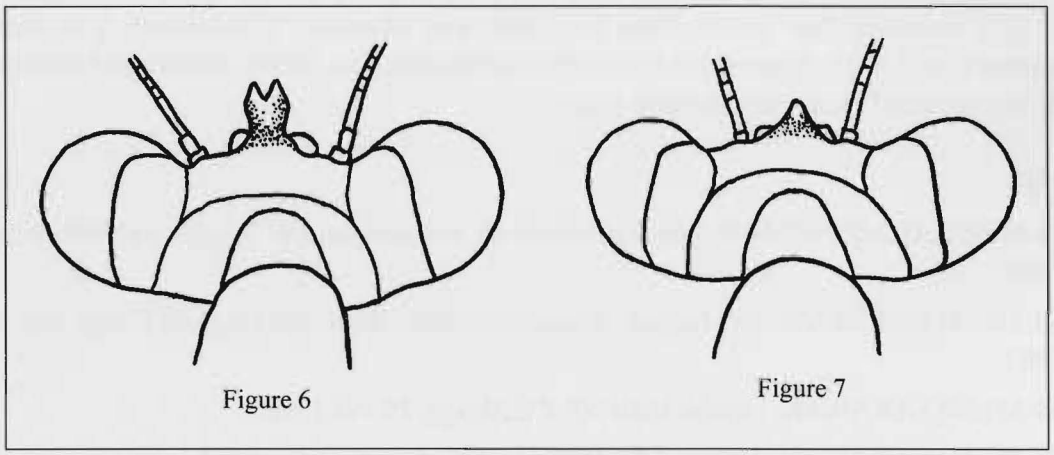



**Figure 6.** Head of male *Majangella moultoni.*
**Figure 7.** Head of male *M. carli.*

***Majangella moultoni* Giglio-Tos 1915** (Figures 6, 18 & 36)
*Majangella moultoni* Giglio-Tos 1915: 95.

The insect is a mottled greenish brown; males have a body length of about 3.5 cm. The type specimen is from Sadong, Sarawak (Giglio-Tos 1915: 95). Beier (1937: 179) recorded two males from Mt. Dulit in Sarawak. It is also recorded from Peninsular Malaysia and the Sunda islands (Ehrmann 2002: 213). I have in my collection, a specimen from Thailand (the first record for Thailand) that appears to be this species although it is more tuberculate than my two Bornean specimens.

**Material:**

♂ (PEB-M157) THAILAND, Phuket. Local collector. v.1996.

♂ (PEB-M228) SABAH, Kinabalu N.P., 1580m. Anthony Lamb. April 1982 [ex. C.L. Chan's collection].

♂ (PEB-M345) SABAH, Crocker Range, Kota Kinabalu-Tambunan road. S. Chew, 26.ix.2006.

♂ (BORN) SABAH, Danum Valley Conservation Area, Light trap. Ling Kai Lin, 21.v.2009.

***Majangella carli* Giglio-Tos 1915** (Figures 7 & 19)
*Majangella carli* Giglio-Tos 1915: 95-96.

This species was described from a single male from Sumatra. It has since been recorded from Java (Beier 1942: 141), and the Malay Peninsula (Ehrmann 2002: 213).

**Material:**

♂ (PEB-M359) EAST JAVA. Native collector. ii.2008.

## *Theopompa* Stål 1877

*Theopompa* is a genus of medium-sized mantids, ranging from about 4-7 cm in length. The genus contains five species; two occur in Borneo. Of the Liturgusidae that occur in Borneo, *Theopompa* are probably the most likely to be encountered; because of their larger size they are certainly more noticeable than *Humbertiella* or *Majangella*. *Theopompa borneana* Giglio-Tos 1917 was described from Borneo and has since been found in Peninsular Malaysia. *T. tosta* Stål 1877 was described from the Philippines and has since been found in Borneo, Sumatra, New Guinea and on the Malay Peninsula.

The five species are relatively easy to distinguish using the key below. Care should be taken with the first couplet; *T. borneana* can have a lot of dark colouration on the spines of the tibiae, these should not be confused with the completely black spines of *T. servillei* and *T. burmeisteri*.

**Key to *Theopompa***

1. The internal spines of the anterior tibiae completely black (Figure 10). ..... 2
- The internal spines of the anterior tibiae black at the ends only, or black at the ends with a brown or black stripe, but not completely black (Figures 11-13). ..... 3

2. Disc of the metazone of the pronotum with two tubercular conical granulose projections behind surcoxal groove in ♂ & ♀ (Figure 8). ..... *T. servillei*
- Disc of the metazone of the pronotum without true projections or these scarcely marked and smooth in ♂ & ♀ (Figure 9). ..... *T. burmeisteri*

3. Anterior coxa without black band at the base (Figure 15). ..... 4
- Anterior coxa with a black band at the base (Figure 14). ..... *T. borneana*

4. The large internal spines of the anterior femur yellow at the base, the end black (Figure 11). ..... *T. ophthalmica*
- The large internal spines of the anterior femur completely black (Figure 12). *T. tosta*

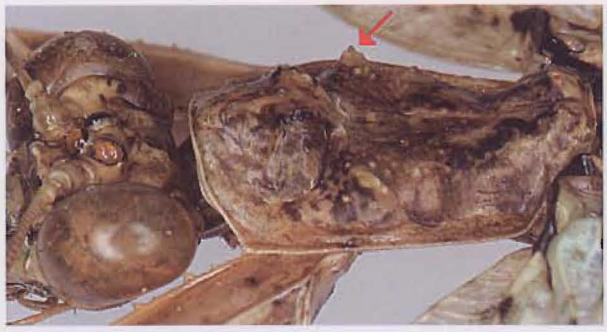
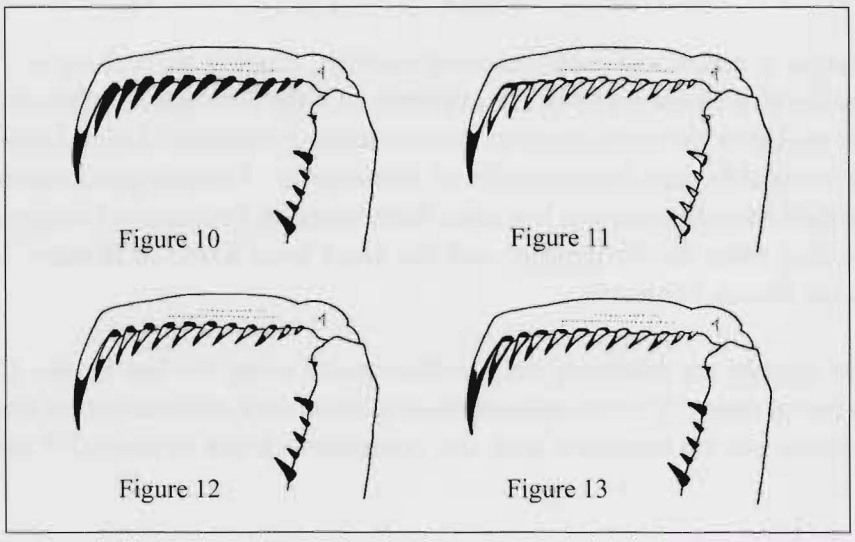


**Figure 8.** Pronotum of *Theopompa servillei* with tubercule arrowed.

**Figure 9.** Pronotum of *T. burmeisteri*.




**Figures 10-13.** Colouration of the spines on the tibia and femur of *Theopompa* spp. 10. *T. burmeisteri* and *T. servillei*, 11. *T. opthalmica*, 12. *T. tosta*, 13. *T. borneana*.

**Figure 14.** Coxa and femur of *Theopompa borneana*.

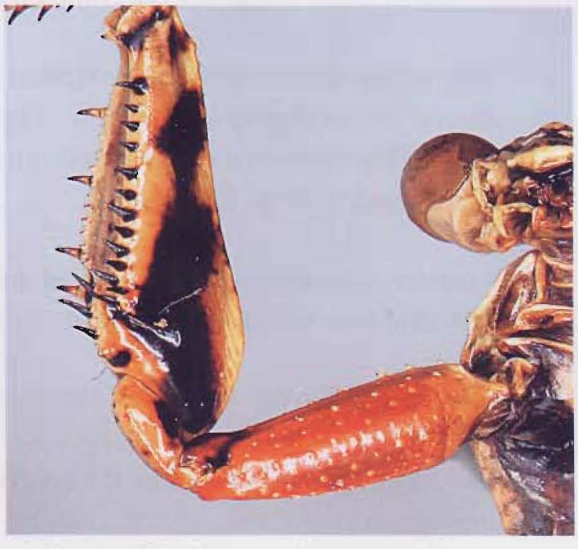


**Figure 15.** Coxa and femur of *T. tosta*.

***Theopompa borneana* Giglio-Tos 1917** (Figures 13, 14, 20, 21, 30, 32 & 37)
*Theopompa borneana* Giglio-Tos 1917: 85.

According to Giglio-Tos (1917: 85) both sexes of *Theopompa borneana* are 56 mm. I measured only two specimens of each sex and found males: 47 mm and 49 mm; females: 59 mm and 70 mm. Giglio-Tos did not record a specific locality but mentions several specimens from "Borneo" in the Berlin and Sarawak museums.

Beier (1937: 177) recorded two females from Mt. Dulit, Sarawak; one of these is in BMNH and is listed below.

**Material:**

♂ (BMNH: BM1978-206) SARAWAK, Gunong Mulu Nat. Park, RGS Exped., 1977-8, J.D. Holloway *et al.* Site 9. February Camp 1, Mulu 140m. 384470 Mixed dipt. for. Aci-understorey.

♀ (BMNH: BM1933-245) SARAWAK, Foot of Mt. Dulit, Junction of rivers Tinjar & Lejok. 24.viii.1932, Native collected. Oxford Univ. Exp. B.M. Hobby & A.W. Moore. "*Theopompa borneana* G. Tos det. Beier."

♀ (BMNH: 56-10) BORNEO. SAR. [Wallace style label] "*Dendromantis Burmeisteri* D.Haan."

♀ (BMNH: 56-10) BORNEO, SAR. [Wallace style label].

♂ (PEB-M22) KALIMANTAN Tengah, nr Palangkaraya Kelembenkari, Bukit Jak, to light. P.E. Bragg, 09.viii.1993.

♂ (PEB-M72) KALIMANTAN Tengah, Kelembenkari, nr Palangkaraya. P. Jenkins, 20.viii.1993.

♂ (BORN) SABAH, Danum Valley Conservation Area, Light trap. Ling Kai Lin, 15.vi.2009.

♂ (BMNH: BM1978-48) SABAH, 5m S. Trus Madi, 1800ft. M.E. Bacchus, 18-28.viii.1977.

♂ (BMNH: BM1974-277) SABAH, Sandakan district, Rumidi estate, River Labuk, 50-150ft. Heavy forest near plantations. C.J.M. Pruett, 14-31.ix.1973.

♂ (BMNH 95-140) SABAH, Sandakan. 29.iii.93.

♂ (BMNH: BM1950-497) B.N. BORNEO, Kretam, J.D.H. Hedley, 25.x.-08.xi.1950.

***Theopompa burmeisteri* (de Haan 1842)** (Figures 9, 10, 22, 23 & 33)
*Mantis* (*Mantis*) *burmeisteri* de Haan 1842: 80, Figs 16.3 & 16.4.

*Theopompa burmeisteri* was originally described from Java and is also recorded from Sulawesi.

**Material:**

♀ (PEB-M360), ♂ (PEB-M361) EAST JAVA, Mt. Argopuro. Native collector, i.2008 [Purchased from dealer].

***Theopompa opthalmica* (Olivier 1792)** (Figures 11, 24 & 25)
*Mantis opthalmica* Olivier 1792: 637.
= *Mantis grisea* Lichtenstein 1802: 29.
= *Mantis oratoria* Stoll 1813: 19, Pl. 6.23.
= *Theopompa cambodjensis* Westwood 1889: 29.
= *Theopompa blanchardi* Wood-Mason 1891: 62.

This species was originally described from Malabar (India). It has a wide distribution according to Ehrmann (2002: 351): North India, North Vietnam, Sulawesi, Ambon, and Sunda Islands. It does not seem to have been recorded from Peninsular Malaysia until now.

**Material:**

♀ (PEB-M362) WEST MALAYSIA, Cameron Highlands. Native collector, v.2007 [Purchased from dealer].

♂ (BM 1927-194) TONKIN, Bac Kap. January 1927, Delacour and Lowe Expt. "*Theopompa opthalmica* (Ol.) det. Beier."

***Theopompa servillei* (de Haan 1842)** (Figures 8, 10, 26 & 27)
*Mantis* (*Mantis*) *servillei* de Haan 1842: 81, Figs 16.5 & 16.6.

Originally described from Java; also recorded from: North India, Myanmar, Thailand, Peninsular Malaysia, and Sunda Islands.

**Material:**
♂ (PEB-M324) WEST JAVA. 15.ix.2004 [Purchased from dealer].
♀ (PEB-M323) WEST JAVA. 16.x.2004 [Purchased from dealer].

***Theopompa tosta* Stål 1877** (Figures 12, 15, 28, 29, 31, 34 & 38)
*Theopompa tosta* Stål 1877: 38.

*Theopompa tosta* was originally described from the Philippines and is known to occur in Borneo, Sumatra, New Guinea and on the Malay Peninsula (Ehrmann 2002: 352). According to Giglio-Tos (1927: 71), *T. tosta* is slightly smaller than *T. borneana,* with the length of the male about 40 mm and that of the female 47 mm. My own males of *T. tosta* range from 40-49 mm. It is often possible to identify males of *T. tosta* without examination of the spines by the colouration of the fore wings: large dark blotches are often present in *T. tosta*, but not in *T. borneana*; furthermore, the pronotum of males of *T. borneana* are much more elongated than those of *T. tosta.*

The male of this species was illustrated by Helmkampf *et al.* (2007: 13, Plate 2, top right) and referred to as "*Theopompa* spec. 1". It was recorded from Danum Valley, Sabah (Helmkampf *et al.* 2007: 5, Table 2), and Poring Springs, Sabah (Helmkampf *et al.* 2007: 6, Table 3). Helmkampf *et al.* (2007) also recorded "*Theopompa* spec. 2" from Danum Valley; having examined photographs of all three specimens, I can confirm that all are *T. tosta*: the "spec. 1" and "spec. 2" are just colour variations of this very variable species.

**Material:**

2♂♂ (PEB-M53, PEB-M54) KALIMANTAN Tengah, Sungai Ratu Miri, Ratu Miri Logging Camp, to light. P.E. Bragg, Aug.1993.

♂ (PEB-M71) KALIMANTAN Tengah, Kelembenkari, nr Palangkaraya. P. Jenkins, 20.viii.1993. ♂ (PEB-M75) KALIMANTAN Tengah, Kelembenkari, nr Palangkaraya, to light. code M2. P. Jenkins, Aug. 1994.

3♂♂ (PEB-M230, PEB-M231, PEB-M232), 2♀♀ nymphs (PEB-M251, PEB-M252) SABAH. Ulu Dusun. NO DATE. [ex. C.L. Chan's collection]. ♂ (PEB-M234) SABAH, Ulu Dusun. Anthony Lamb, 1976 [ex. C.L. Chan's collection]. ♂ (PEB-M229) SABAH, Ulu Dusun. C.L. Chan & W. Wong. 18.v.1984 [ex. C.L. Chan's collection].

♂ (PEB-M233) SABAH, Sepilok. C.L. Chan. 08.x.1982 [ex. C.L. Chan's collection].

♂ (PEB-M350) SABAH, Long Pa Sia. Noramali Muslim, Liew Thor-Seng, Azniza Mahyudin & Henry Balang, 24.xii.2006.

♂ (PEB-M55) SARAWAK, Lambir Hills NP, to light. P.E. Bragg, 19.viii.1992.

♂ (PEB-M56) SARAWAK, Lambir Hills NP, to light. P.E. Bragg, 18.viii.1992.

♂ (BORN) SABAH, Danum Valley Conservation Area, Light trap. Ling Kai Lin 15.vi.2009.

2♂♂ (BMNH: BM1974-277) SABAH, Tawau district, Brumas camp, 500-700ft., clay, shale and limestone hills, primary rainforest. C.J.M. Pruett, 17-31.x.1973.

♂ (BMNH: BM1975-256) E. SABAH, Brumas (N.BT), 500ft. K.M. Guichard, 25.iv.1973.

3♂♂ (BMNH: BM1974-277) SABAH, Sandakan district, Rumidi estate, River Labuk, 50-150ft. Heavy forest near plantations. C.J.M. Pruett, 14-31.ix.1973.

♂(BMNH: BM1974-277) SOUTH SUMATRA, Lampung district, Pandangratua, 220ft. C.J.M. Pruett, 14-15.xi.1973.

♂ (BMNH 1920-43) SUMATRA, Benkoelen Dist., C.J. Brooks, 1912-1919.

♂ (BMNH: BM1992-172) BRUNEI, Temburong district, ridge N.E. of Kuala Belalong, approx. 300m altitude, 125W m.v. light. J.H. Martin, November 1992.

♂ (BNMH: BM1984-296) BRUNEI, 0m, S. Selanjak, 4464.1432, mangrove. Maj. T.P.G. Helps, 8-9.iii.1984.

♂ (BMNH 1917-59) SARAWAK. Dr. A.R. Andrew [no date].

♀ (BMNH: BM1977-615) SABAH, Sandakan district, Ulu Dusun. A. Lamb, 04.v.1976.

♂ (BMNH: BM1978-206) SARAWAK, Gunong Mulu Nat.Park. W. Melinau Gorge, Site 20, 150m. 422577 FEG 3. Kerangas. MV-understorey. RGS Exped. 1977-8. J.D. Holloway *et al.* Mar.-Apr.

## DISCUSSION

The examination of the genitalia of three *Theopompa* species (*T. borneana, T. burmeisteri, & T. tosta*) has shown they are very similar. The most obvious differences are in the shape of the posterior margin of the hypophallus and the shape of the hook on the hypophallus. Figures 32-34 show ventral views: the right margin of the hypophallus (left of figures) is only very weakly sclerotized so the shape is indistinct and likely to be variable.

The distribution maps suggest all the Bornean species of Liturgusidae have a wide distribution. The few records for Kalimantan are undoubtedly a result of my making only one visit to the country, and I did not collect mantids on most of my visits to Sarawak.

As is usually the case with mantids, males dominate the examined material; the ratios of males to females for the Bornean material are: *Humbertiella ocularis* 18:2, *Theopompa borneana* 8:3, *T. tosta* 24:3, *Majangella moultoni* 3:0. The ratio of the sexes is almost certainly due to males being more mobile, and attracted to light. There are considerably fewer records for *M. moultoni* than the other species; this is probably due to a lower abundance, but may be due to behavioural differences: it is possible that it is not as strongly attracted to light as the other species.

## ACKNOWLEDGEMENTS

I thank Dr George Beccaloni (BMNH) for the loan of some specimens of *Theopompa borneana*, and Ed Baker (BMNH) for assistance in recording data. Thanks to Martin Stiewe for comments on the manuscript. Thanks to Dr Jan Beck for providing photographs of the material collected by Helmkampf *et al.* (2007), and for comments on the manuscript.

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**Table 1.** Longitude and latitude of collection sites.

| Locality | Longitude & Latitude |
|---|---|
| Brumas camp (Sabah) | E117°44' N04°37' |
| Dahan (Sarawak) | E110°11' N01°21' |
| Danam Valley Conservation Area (Sabah) | E117°40' N04°55' |
| Kelambenkari (Kalimantan) | E113°54' S02°19' |
| Kinabalu Park, HQ area (Sabah) | E116°33' N06°00' |
| Kota Kinabalu (Sabah) | E116°04' N05°57' |
| Kota Kinabalu-Tambunan Road (Sabah) | E116°22' N05°45' |
| Kretam (Sabah) | E118°30' N05°30' |
| Kuala Belalong (Brunei) | E115°09' N04°32' |
| Labu River (Brunei) | E115°09' N04°46' |
| Lambir Hills NP (Sarawak) | E114°02' S04°12' |
| Long Pa Sia (Sabah) | E115°43' N04°24' |
| Mt Dulit (Sarawak) | E114°10' N03°22' |
| Mt Mulu NP (Sarawak) | E114°56' N04°03' |
| Ratu Miri (Kalimantan) | E113°35' S00°40' |
| Rumidi Estate (Sabah) | E117°30' N05°45' |
| Sandakan (Sabah) | E118°06' N05°51' |
| Selanjak (Brunei) | E115°03' N04°49' |
| Sepilok (Sabah) | E117°57' N05°50' |
| Sukau (Sabah) | E118°17' N05°32' |
| Trus Madi (Sabah) | E116°31' N05°33' |
| Ulu Dusun (Sabah) | E117°45' N05°46' |

Scale line = 1 cm (whole insect), 1 mm (genitalia)

**Figure 16.** *Humbertiella ocularis*, male (PEB-M124).

**Figure 17.** *Humbertiella ocularis*, female (BORN).

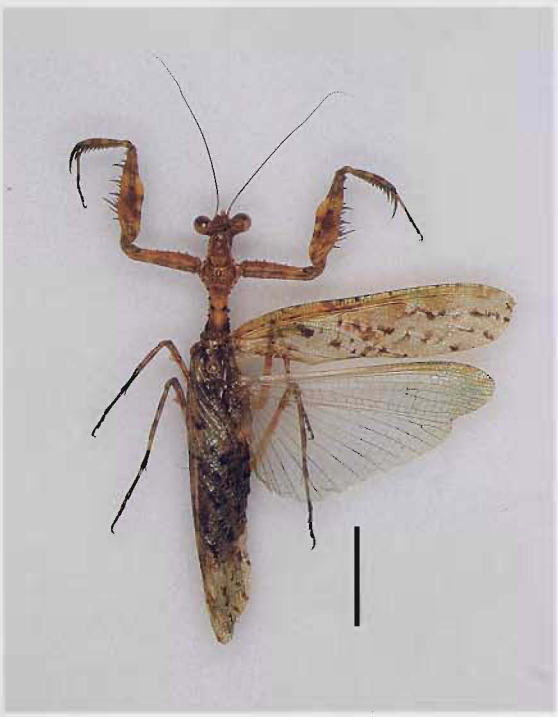


**Figure 18.** *Majangella moultoni*, male (PEB-M345).

**Figure 19.** *Majangella carli*, male (PEB-M359).

**Figure 20.** *Theopompa borneana*, male (PEB-M22).

**Figure 21.** *Theopompa borneana*, female (BM1933-254).

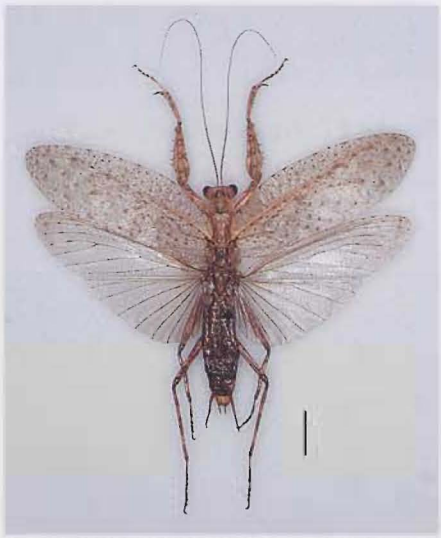


**Figure 22.** *Theopompa burmeisteri*, male (PEB-M361).

**Figure 23.** *Theopompa burmeisteri*, female (PEB-360).

**Figure 24.** *Theopompa opthalmica*, male (BM1927-194).

**Figure 25.** *Theopompa opthalmica*, female (PEB M362).

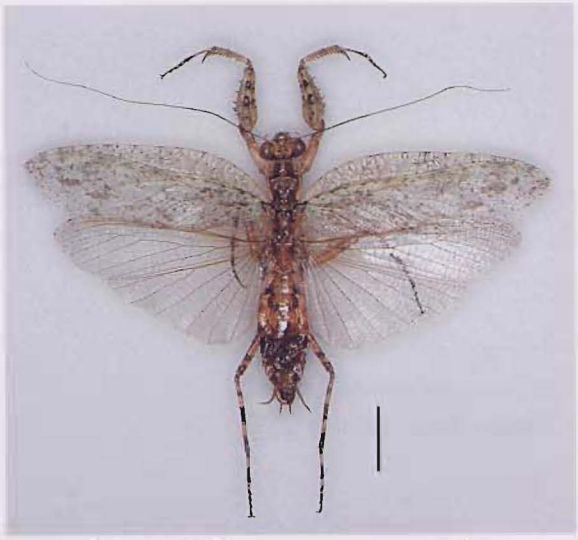


**Figure 26.** *Theopompa servillei*, male (PEB-M324).

**Figure 27.** *Theopompa servillei*, female (PEB-M323).

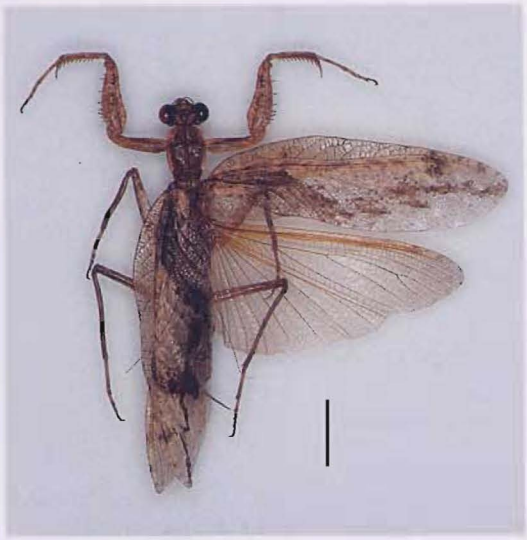


**Figure 28.** *Theopompa tosta*, male (PEB-M350).

**Figure 29.** *Theopompa tosta*, female (BM1977-615).

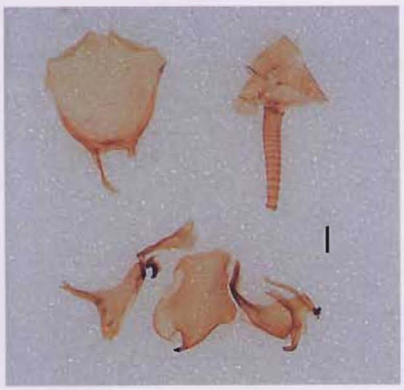


**Figure 30.** Male genitalia, *Theopompa borneana* (PEB-M72).

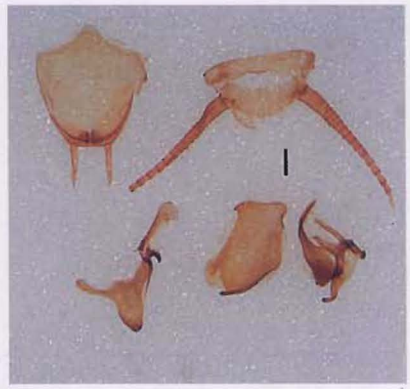
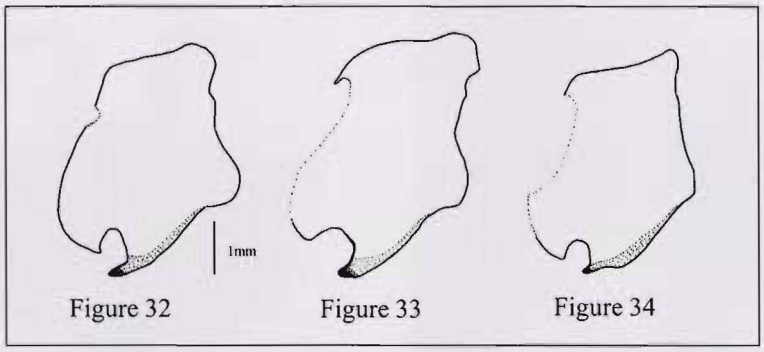
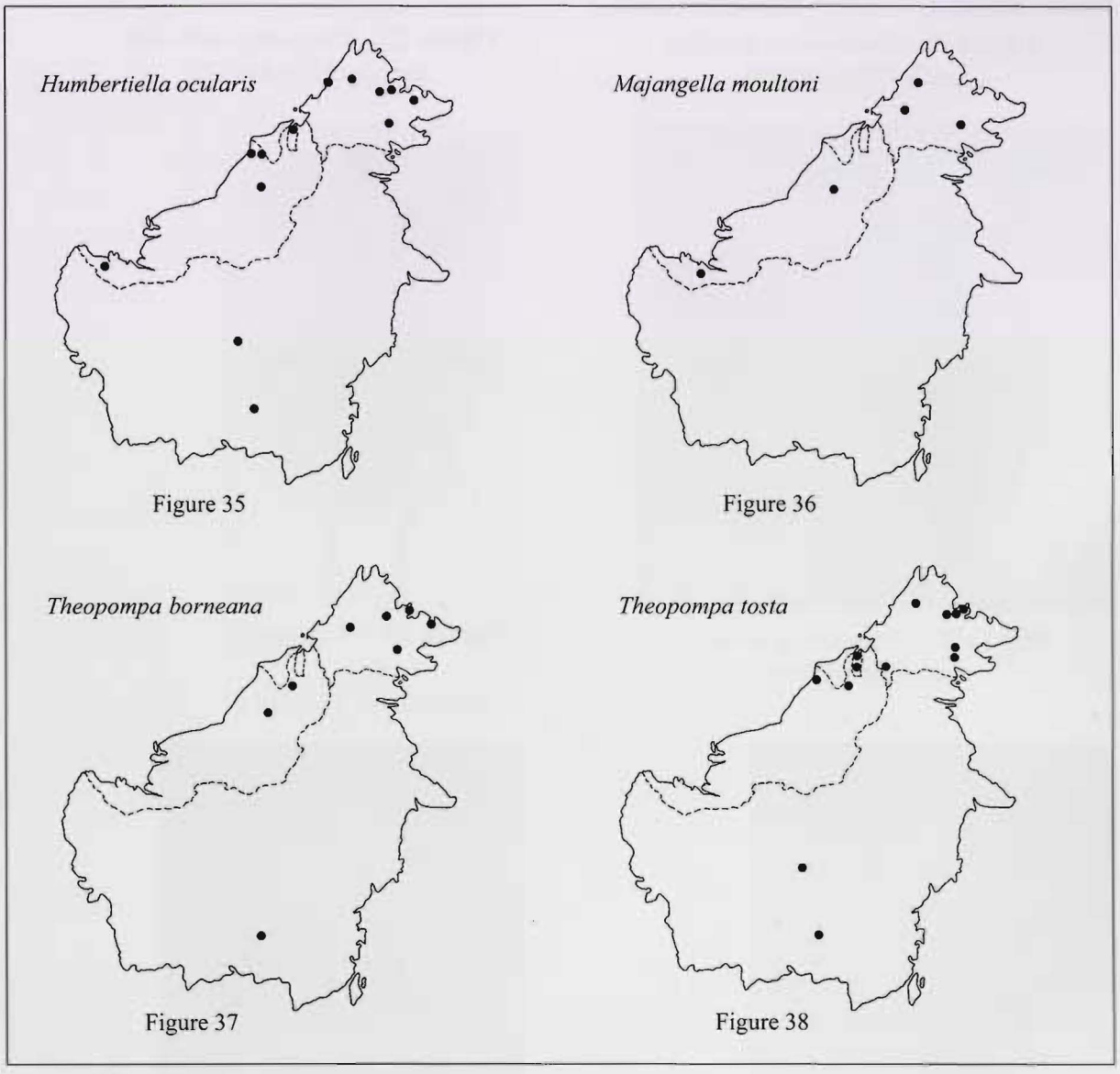


**Figure 31.** Male genitalia, *Theopompa tosta* (PEB-M75).




**Figures 32-34.** Hypophallus of *Theopompa borneana* (left), *Theopompa burmeisteri* (centre), *Theopompa tosta* (right).




**Figures 35-38.** Distribution maps: *Humbertiella ocularis*, *Majangella moultoni*, *Theopompa borneana*, *Theopompa tosta*.

# Author's Update

**Since the publication of this paper, there have been a number of significant changes relating to the genus *Majangella*.**

- The genus *Majangella* has been moved to the Hymenopodidae: Acromantinae (by Svenson & Vollmer, 2014).
- The genus *Ephippiomantis* Werner, 1922 was found to be a synonym of *Majangella* Giglio-Tos, 1915 (by Svenson & Vollmer, 2014).
- *Majangella ophirensis* (Werner, 1922) was also recorded from Borneo (by Svenson & Vollmer, 2014).
- Re-examination of one of my specimens (PEB-M228) has resulted in it being identified as *Majangella ophirensis* (Werner, 1922). [PEB-M228 is listed as *M. moultoni on page 24*]

**Reference**

Svenson, G.J. & Vollmer, W. (2014) A case of the higher-level classification of praying mantises (Mantodea) obscuring the synonymy of *Manjangella* Giglio-Tos, 1915 (Liturgusidae, Liturgusinae) and *Ephippiomantis* Werner, 1922 (Hymenopodidae, Acromantinae). *Zootaxa*, **3797**(1): 103-119.