# TWO NEW SPECIES OF THE GENUS Pomponia STÅL, 1866 (HOMOPTERA: CICADIDAE) FROM PENINSULAR MALAYSIA

# Azman, S.\*

Centre for Insect Systematics, Faculty of Science and Technology, Universiti Kebangsaan Malaysia 43600 Bangi, MALAYSIA \*Corresponding author: as@ukm.edu.my

#### ABSTRACT

Pomponia latiffi sp. nov. and Pomponia zaidii sp. nov., two new species of cicada from Peninsular Malaysia are described and illustrated.

Keywords: Homoptera, Cicadidae, Pomponia, new species, Peninsular Malaysia

## **ABSTRAK**

Pomponia latiffi sp. nov. dan Pomponia zaidii sp. nov., dua spesies baru riang-riang dari Semenanjung Malaysia telah diperihalkan dan diilustrasikan.

Kata kunci: Homoptera, Cicadidae, *Pomponia*, spesies baru, Peninsular Malaysia

# **INTRODUCTION**

In the previous two decades, systematic studies by local and foreign researchers of the cicada collections in the repository of Centre for Insect Systematics Universiti Kebangsaan Malaysia has led to the discovery of many cicada species new to science. These include the three species belongs to the genus Pomponia namely P. zakrii Zaidi and Azman (1998) and P. langkawiensis Zaidi and Azman (1999), both are endemic to Peninsular Malaysia, and P. bulu Zaidi and Azman (2000) that endemic to Mount Kinabalu.

An establishment on the identity of type species for the genus *Pomponia* by Duffels and Hayashi (2006) has led to the discovery of several new species from Oriental Region (Lee 2009a, 2009b, 2010) and resurrection studies of *Pomponia* and its related genera (Emery et al. 2017; Lee 2012a, 2012b; Lee & Lit 2015; Pham et al. 2015). Clarification on the identity of *Pomponia picta* as type species and redescription on the identity of *Pomponia* linearis that was previously being a hampered pool for large number of specimens in many depositories of which include the Centre for Insect Systematics, has led to the descriptions of two new species Pomponia latiffi and P. zaidii, recorded from Peninsular Malaysia as an endemic species.

#### **TAXONOMY**

Description of two species of *Pomponia*, new to science, photos and illustrations of each species are provided in this paper.

# Pomponia latiffi, new species

(Figures 1, 2a–f)

Pomponia linearis Zaidi et al. 1996: 61 (part)

Pomponia sp3 Azman and Zaidi, 2011: 223 (possibly new species)

**Type material**. Holotype: male. MALAYSIA: 'PAHANG / Cameron Highland / Tanah Rata / 1-2.ix.1992' / (UKM). — Paratypes: 2 males, female. KUALA LUMPUR, Lake Garden, 1974, Ng Hj., male, (UKM); PAHANG, Frazer Hill, 3.v.1991, Ruslan & Ismail, female, (UKM); 6.x.1975, L.W.F., male, (UM).

Holotype and paratype specimens are deposited in the depository as mentioned in the list of type metarials examined.

**Etymology**. The species is named after Emeritus Professor Dato' Dr. Abdul Latiff Mohamad, Universiti Kebangsaan Malaysia, for his priceless contribution in Malaysian biodiversity and plant taxonomy, and also a mentor to the author.

**Description of male**. Head and thorax (Figures 1, 2a) with greenish to yellowish ground colour for life specimen, and yellowish ochraceous for dried specimens; abdomen castaneous with ventral part ochraceous. Markings on head and thorax dark ochraceous to fuscous. Ratio of body length to pronotum width about 3.05 (3.03–3.09).

Head with ratio of head width to pronotum width about 0.80, and to mesonotum width about 0.94. Dorsal part with fuscous to blackish markings as follow: a median spots enclosing ocelli, slightly broadened posteriorly and connected with posterior margin; a pair of spots at supra-antennal plates; a pair of oblique fasciae from anterior angle of vertex to the area between ocelli and eyes, bend outwardly to reach medial margin of eyes; and a pair of dark castaneous spots behind the eyes. Supra-antennal plates with rounded anterior margins. Antennae brown to ochraceous. Postclypeus slightly swollen with anterioventral part of head (Figure 2b) with two transverse fuscous markings across the head: the dorsal transverse marking consists a pair of blackish transverse fasciae between postclypeus and eyes, one-fourth anteriodorsal surface of postclypeus; the ventral transverse marking consist one-fourth of anterioventral surface of postclypeus and third quarter of lorum area. Anteclypeus greenish yellow. Rostrum greenish yellow with blackish apex, long and passing the hind coxae and reaching the posterior margin sternite II.

Pronotum (Figures 1d, 2a), with the following fuscous to blackish markings as follow: a median longitudinal fasciae, narrowest at one-third of length at base, slightly widened anteriorly and narrowed just before connected with narrow transverse fascia at anterior margin, strongly widened and branched posteriorly forming transverse fascia at ambient fissure, extending to reach posterior margin and connected with narrow transverse fascia along posterior margin of pronotal collar. Paramedian and lateral fissures with very narrow brownish ochraceous fasciae. Pronotal collar greenish to yellowish; with a pair of fuscous

paramedian spots connected with ambient fissure and posterior margin; and a pair of bigger lateral spots at lateral angle; lateral margin with toothed-like projection.

Mesonotum with the following fuscous to blackish markings: a median longitudinal fascia extending posteriorly to posterior margin of cruciform elevation, consist of fuscous arrow shaped fascia at anterior, connected with dome-shaped fascia posteriorly with the bases enclosing a pair of scutal depression; a pair of paramedian obconical markings, almost reaching to half-length of mesonotum disc on subsigilla; a pair of longitudinal fasciae on lateral sigilla; and a pair of narrow triangular markings, between obconical markings and lateral longitudinal fasciae at anterior margin.

Legs, pale greenish to ochraceous; fore legs with fuscous spot behind coxae, fuscous rings at the basal and apical of femora, tibiae dark ochraceous. Middle and hind legs with dark ochraceous spots near basal and apical of tibiae. Second half of fore and middle tarsi fuscous, those of hind legs yellowish.

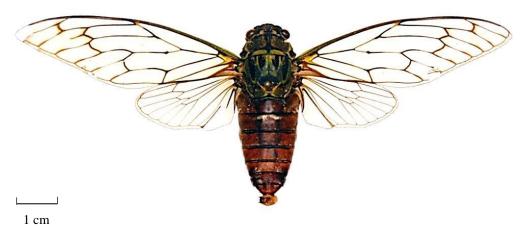


Figure 1 *Pomponia latiffi* sp. nov., holotype, Cameron Highland.

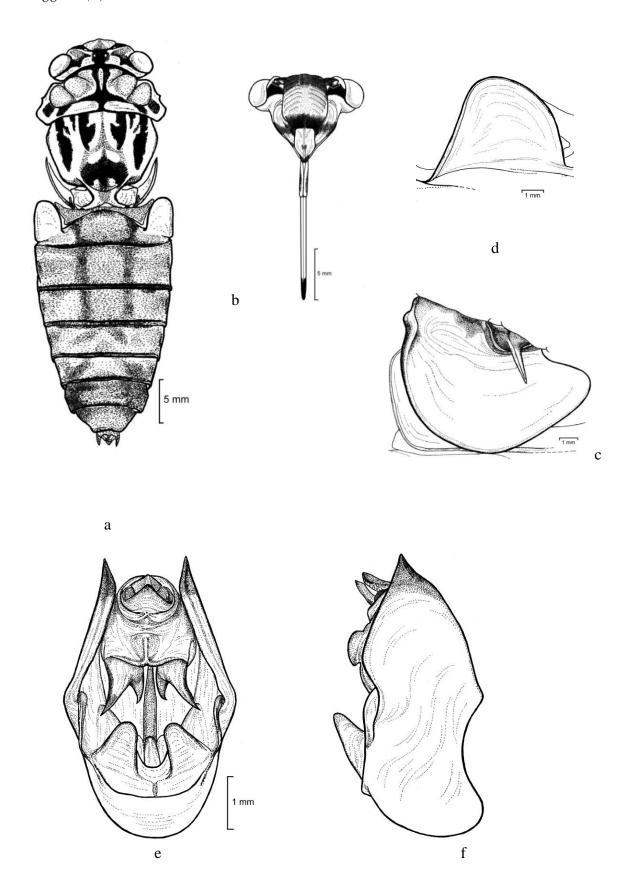


Figure 2 *Pomponia latifii* sp.nov., male, holotype, Cameron Highland. a, body from dorsal view; b, head from anteroventral view; c, right operculum from lateroventral view; d, left tymbal cover from dorsolateral view; e, male genitalia from posteroventral view; f, male genitalia from lateral view.

Tegmina and wings (Figure 1) hyaline with reddish grey basal membrane. Tegmina with coastal membrane and vein R+Sc greenish for life specimen, and yellowish for dried specimens; other venation greenish to yellowish ochraceous, variegated with blackish; basal cell yellowish, longer than broad; transverse veins r, r-m and m distinctly infuscated but indistinct at vein m-cu; apices of longitudinal veins to apical cells indistinctly with oblong infuscations of the same size. Crossings of nodal line, nodul line intersection and vein CuA<sub>2</sub> very faintly infuscated. Wing with brownish ochraceous venation; claval margin darker in hue.

Operculum (Figure 2c) greenish ochraceous with narrow fuscous fasciae along lateral margin to distal margin; broader than long, with the distal margin just reaching the bases of sternite III. Medial margin concave at base with subangular medial corner, overlape to each other; lateral margin sinuate at base and thereafter oblique to convex distal margin.

Abdomen (Figures 1, 2a) about 1.2 times longer than the length of head and thorax combined. Dorsal part castaneous with narrow transverse blackish fasciae at posterior margin of tergites 2 to 7; a median longitudinal dark brownish castaneous markings at tergites 2 to 5, widened to lateral margin at second half of tergite 6 and combined with tergite 7 of the same colour. Tymbal covers (Figure 2d) pale greenish ochraceous with convex medial and anterior margins, and lateral corner subangular.

Genitalia (Figures 2e, f). Pygofer with length includes dorsal beak less than twice as width about 1.6x; tapering towards anterior and posterior; with semicircular anteriorly. Pygofer primary basal lobes present with parallel median margin, broad at the bases and semicircular apically. Secondary basal lobes separated from lateral margin. Pygofer lateral lobes tapering towards posterior and sharply pointed apex. Dorsal beak, very short, slender and pointed apically, with the tip not reaching the apex of anal styles. Anal styles projected towards posterioventral. Uncus trapezoid with a narrow and short, medan incision suggesting the fusion of two short, broad lobes. Claspers with two spines sharply pointed apex, protruding from below the uncus; lateral spine almost twice longer than medial spine; all spines weakly curved laterad.

**Description of female**. Head, pronotum, mesonotum, legs and tegmina are similar to male, and distinguished by the opercula, abdomen and genitalia. Operculum triangular; greenish ochraceous; medial part weakly convex; basal and marginal parts fully covered by short hairs and some on distal part. Short hairs found on all over the body, heavily behind the eyes and cruciform elevation. Genitalia covered by long hairs. Abdomen shorter than the length of head and thorax combined.

**Measurements** (mm). Males (n=3). Body length 43.75 (43.54–44.00); abdomen length 23.90 (23.83–23.95); head width 11.08 (10.90–11.22); pronotum width 13.77 (13.67–13.93); mesonotum width 11.81 (11.72–11.90); tegmen length 56.68 (55.54–57.70); expanded tegmina 126.49 (124.75–129.33). Female (n=1). Body length 32.40; abdomen length 13.94; head width 9.90; pronotum width 13.00; mesonotum width 11.00; tegmen length 50.20; expanded tegmina 113.40.

**Distribution** (Figure 5). Endemic to Peninsular Malaysia.

**Remarks:** *Pomponia latiffi* sp. nov. is easily distinguished from other species of the same genus from Oriental region by its blackish markings on head and thorax (Figure 1a). Comparison with other described species that sharing similar characteristic in published research materials showing *P. latiffi* is clearly differ from any described species and belong to *P. linearis* group, and as well as *P. linearis* complex as described by Duffels and Hayashi (2006).

# *Pomponia zaidii*, new species (Figures 3, 4a–f)

*Pomponia* sp., Azman et al., 2005: 157; Zaidi and Azman, 2006: 360; Azman and Zaidi, 2007: 284.

Type materials. – Holotype: male. MALAYSIA: 'KEDAH / Gunung Jerai / 800m / 22.x.2005 / Azman, Badrul, Badris' / (UKM). – Paratypes: 14 males, 5 females. KEDAH, Gunung Jerai, 800m, 22.x.2005, Azman, Badrul, Badris, 2 males, (UKM); same data except 23.x.2005, 5 males, 3 females, (UKM); 02.vi.2005, Azman, Badrul, Jamal, male, (UKM); 800m, 03.vi.2005, Azman, Badrul, Jamal, 2 males, (UKM); Langkawi, Machinchang, 25.vii.2003, Zabidi, Ruslan, Norela, male, (UKM); P.Dayang Bunting, Pantai Ketapang, 16.xi.2005, Badrul, Fauzi, Nizam, Nan, female, (UKM); Dayang Bunting Island, 16-19.xi.2005, CIS groups, female, (UKM); H.S. Ulu Muda, Kompartmen 74, 14-18.x.2003, Azman, Emma, Badrul, 2 males, (UKM).

Holotype and paratype specimens are deposited in the depository as mentioned in the list of type metarials examined.

**Etymology**. This species is named after Professor Dr Zaidi Md Isa, for his priceless contributions on the diversity of Malaysian as well as South-east Asian cicadas; and the individue who introduced the author to the world of cicadas.

**Descripition of male**. Head, thorax and abdomen with greenish for life specimen, yellowish ochraceous ground colour for dried specimens, with distinct brownish ochraceous to blackish markings. Ratio of body length to pronotum width about 3.56 (3.45–3.62).

Head with ratio of head width to pronotum width about 0.93 (0.91-0.97), and to mesonotum width about 1.06 (1.03–1.09). Dorsal part with black median spot enclosing ocelli somewhat fuscous, extending posteriorly to reach posterior margin, narrowly extending to anterior reaching frontoclypeal suture; a pair of irregular oblique fasciae on vertex between postclypeus and eyes, narrowly connected to median spot in front of lateral ocelli; a pair of small fuscous spots near median margin of eyes; a pair of spots at supra-antennal plates; and both side dorsal surface of postclypeus between median greenish oval spot open to frontoclypeal suture. Anteroventral side of head (Figure 3b) slightly swollen postclypeus; with rounded anterior margin of supra-antennal plates; antennae brown to ochraceous. Postclypeus with median yellowish oval spot at dorsal and median brownish ochraceous to fuscous patch at anterior, with two series of ochraceous transverse marks at both sides, and a pair of yellowish line at the ridge of transverse groove; lateral margin with narrow dark brownish ochraceous fasciae. Genae with irregular brownish ochraceous spots between postclypeus and eyes, mandibular plates and anteclypeus ochraceous with yellowish laterally. Rostrum black apically, long and passing the hind coxae, reaching between medial corner of operculum.

Pronotum (Figure 4a) with fuscous to blackish median longitudinal fascia, broadened anteriorly to reach anterior margin, narrowest at about half of the length, posteriorly broadest at an ambient fissure, connected to median blackish spot at pronotal collar; narrow fasciae along paramedian, lateral and ambient fissures; a pair of paramedian curved fasciae behind paramedian fissure. A pair of lateral oblique areas darker than paramedian oblique areas. Pronotal collar with blackish short median transverse fascia at posterior margin; lateral angle with a pair of large spots, connected with a pair of spots at lateral area; lateral margin slightly sinuated and toothed.

Mesonotum (Figure 4a) with the following brownish ochraceous to castaneous markings: a pair of paramedian obconical fasciae on submedian sigilla along the parapsidal suture passing half length of mesonotal disk, darker at marginal area, somewhat disturbed at the bases; a pair of lateral longitudinal fasciae on lateral sigilla, extending from anterior margin to posterior margin, darker posteriad; a pair of narrow triangle spots at anterior margin between paramedian obconocal fasciae and lateral longitudinal fasciae; a mediodistal fasciae in front of cruciform elevation, enclosing rounded darker spots at scutal depression. Cruciform elevation with anterior median spot and a pair of large lateral spots.

Legs, greenish to yellowish ochraceous with fuscous markings. Fore legs with fuscous coxae and femora except the bases and apical parts; tibiae with large dorsal spot at the bases and large ring spot apically; tarsus fuscous. Middle and hind legs: coxae with a pair of spots at the bases and apical part, laterally; femora with basal dorsal spots and apical spots; tibiae with basal and apical ring spots; tarsus fuscous.

Tegmina and wings (Figures 3) hyaline with dark greyish basal membrane. Tegmina with coastal membrane, vein R+Sc and CuP+1A greenish to yellowish ochraceous; other venation greenish or yellowish to brownish, variegated with fuscous; basal cell pale hyaline, longer than broad; marginal area with smoky bronzed tinge at half toward apex. Transverse veins at bases of first to fifth apical cells distinctly infuscated (at cross veins r, r-m and m); apices of longitudinal veins to apical cells infuscated, gradually indistinct and smaller following sequence. Apex of veins CuA and CuA2 distinctly infuscated. Wing with brownish to fuscous venation without any spots; claval margin darker in hue.

Operculum (Figure 4c) greenish olivaceous, as long as broad, with the distal margin just passing the bases of sternite III. Median margin oblique, medial corner subangulate, distomedial margin convex to distomedial corner. Lateral margin strongly sinuated and oblique with narrow fuscous fascia. Basal part with fuscous spots at bases of lateral margin, bases of meracanthus and near marginal area of bases of meracanthus.



Figure 3 *Pomponia zaidii* sp. nov., holotype, Gunung Jerai.

Abdomen (Figures 3, 4a,) about 1.40 times longer than the length of head and thorax combined; with narrow transverse fuscous fasciae along posterior margin of tergites 1 to 7, blackish at paramedian longitudinal fasciae. Dorsal surface with a pair of broad dark brownish ochraceous longitudinal fasciae on tergites 1 to 7, anteriorly connected to a pair of fuscous spots at both side of cruciform elevation, ended posteriorly at posterior margin of tergite 7; a pair of fuscous oval spots at lateral side of tergites 3 to 7; lateral surface of tergite 7 and whole surface of tergite 8 fuscous to blackish brown; other surface of tergite 7 brownish. Tymbal cover (Figure 3d), pale greenish to ochraceous, broder than long, semicircular medial corner and convex inner corner; with median longitudinal brownish fasciae.

Genitalia (Figures 4e, f). Pygofer with length includes dorsal beak, less than twice as width about 1.79x; tapering and subangulated anteriorly. Pygofer primary basal lobes triangular, short and blunt apex; secondary basal lobes partly separated from lateral margin; pygofer lateral lobes semicircular. Dorsal beak, short, slender and pointed apically, with the tip about the same level as the tip of anal styles. Anal styles projected towards posterior. Uncus, broad and rounded; bearing two long lobes, broad at the bases, tapering towards apex and sharply pointed apically, oblique laterad. A pair of clasper protruding from below the uncus; broad at the bases with two spines; lateral spines much longer and bigger than medial spines with bluntly pointed apex; median spines shord and pointed apex.

**Description of female** (Figure 4g). Head, thorax, and tegmina almost identical to male; abdomen shorter than the length of head and thorax combined. Markings of head and mesonotum, similar to male but less distinct except the median spot on head and median longitudinal fasciae on pronotum. Mesonotum with spots and fasciae as in male but strongly interrupted anteriorly at anterior margin. Abdomen with paramedian longitudinal faciae as male.

**Measurement** (mm). Males (n=13). Body length 27.79 (25.15–32.60); head width 7.29 (6.65–8.40); pronotum width 7.80 (7.05–9.13); mesonotum width 6.88 (6.30–8.10); tegmen length 32.45 (30.26–37.60); expanded tegmina 72.71 (67.72–84.33). Females (n=4). Body length 20.31 (19.29–22.48); head width 6.85 (6.25–7.37); pronotum width 7.40 (7.00-7.83); mesonotum width 6.56 (6.10-7.10); tegmen length 30.64 (28.76-34.00); expanded tegmina 68.68 (64.52-75.83).

**Distribution** (Figure 5). Endemic to the northern part of Peninsular Malaysia.

ISSN 1394-5130

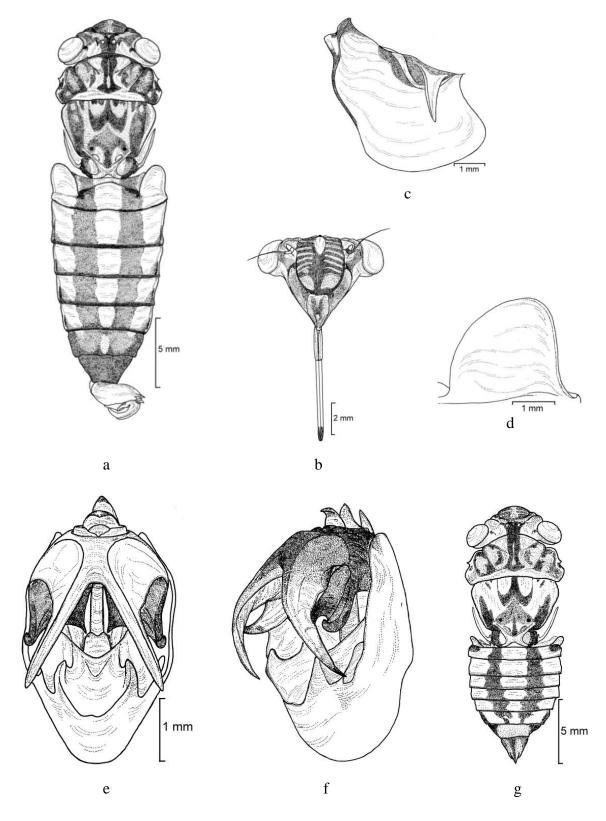


Figure 4. *Pomponia zaidii* sp.nov., male, holotype, Gunung Jerai, Kedah, Peninsular Malaysia. a, body from dorsal view; b, head from anteroventral view; c, right operculum from lateroventral view; d, right tymbal cover from dorsolateral view; e, male genitalia from posteroventral view; f, male genitaia from lateroventral view; g, female body from dorsal view.

**Remarks:** The first specimen of *Pomponia zaidii* sp.nov. (Figure 3), was collected from Ulu Muda forest reserved, Kedah in 2003 (Azman et al. 2005), later being recorded as common species from Gunung Jerai, Kedah (Zaidi & Azman 2006) and from nearby island of Langkawi (Azman & Zaidi 2007). This species is proposed as new to science since morphologically differ from other species of the same genus. In term of size, it is similar to *P. promiscua* from Sumatra but morphologically, *P. zaidii* is similar to those species of *P. picta* group by having broad head with the distance between lateral margin of compound eyes wider than the width of mesonotum. Specific terminologies of morphology and male genitalia for cicada generally were based on terminologies adopted by previous authors or researchers (Bregman 1985; Beuk 2002; Duffels & Zaidi 1999; Duffels & Hayashi 2006; Moulton 1923; Moulds 2005; Hayashi 1987a, 1987b; Lee 2009a; Yaakop et al. 2005; Zaidi & Azman 1998, 1999, 2000).

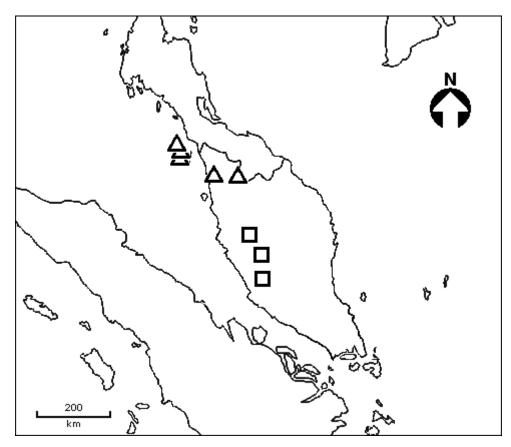


Figure 5 Distribution of *Pomponia latiffi* sp.nov. ( $\square$ ) and *Pomponia zaidii* sp. nov. ( $\triangle$ ) in Peninsular Malaysia.

## **ACKNOWLEDGEMENTS**

I would like to thanks the Government of Malaysia, for the financial supports of this work through Universiti Kebangsaan Malaysia via RM8 IRPA Project no 09-02-02-0018 EAR073, and Universiti Malaysia Sabah via Postgraduate Research Grant GPS0020-NSNH-1/2009.

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