Prionoceridae Lacordaire 1857 of Hong Kong and Guangdong Province, China (Coleoptera; Cleroidea).

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Abstract

Notes on the identification of the six species of Prionoceridae occurring in Guangdong Province and Hong Kong are given. Records, photographs and details of the male genatalia are provided for the Hong Kong species, together with remarks on the biology, flight period and mimicry.

Introduction

The Prionoceridae is a small family of three extant genera: *Idgia*, *Prionocerus* and *Lobonyx* containing around 150 species (Geiser 2007), and is confined to the old world. Six species of *Idgia* have been recorded in Hong Kong and Guangdong, and Mayor (2007) lists another 14 species from China. Two species of *Prionocerus* have been recorded from China; both have extensive distributions and could well occur locally (Geiser pers com.). *Prionocerus* differs from *Idgia* in having the third to tenth antennal segments greatly broadened, flattened and serrate (see Geiser 2010 for details on species identification). A single species of the genus *Lobonyx* has been recorded in China and differs from the other two genera in that the male has only two pectinate protarsal segments.

Historically theses genera have been placed in other family groupings; most recently as a subfamily of the Melyridae; prior to that in the large family groupings of Malacodermidae or Malacodermata. Champion (1919) revised the two genera *Idgia* and *Prionocerus*, but omitted many species (Geiser 2007). Gressitt (1939) treated the Chinese and Cochin-China species of the two genera, but due to limited material only incorporated 10 species of *Idgia* in his key and descriptions, which was biased towards the south China species.

Species of Prionoceridae are elongate with thin, soft elytra, normally with rows of bristle-like setae. The head is drawn forward of the eyes forming a flat rostrum. The pronotum always has a lateral costa and there are no costa on the elytra disk. Other features are emarginate eyes, tarsal formula 5-5-5, with simple tarsal claws and a single spur on the pro-tibia.

Methods and material.

All specimens were collected, and site records documented, by the author in Hong Kong, with a bias towards Lantau Island. The genitalia were dissected and were photographed in 100 % glycerine. All specimens are in the author's collection.

Mimicry.

Champion (1919) noted that the two Oedemeridae genera *Nacerdes* and *Xanthochroa* bear superficial resemblance to species of *Idgia*. In Hong Kong there is an unidentified species of Cantharidae (Figure 1) which is very similar to *Idgia flavicollis* Redtenbacher 1868. Also there are many species with similar colouration to the *Idgia* species with black tipped orange / yellow elytra, such as the oedmerid *Eobia chinensis* (Hope) (see Figure 1); the Lampyridae species *Luciola terminalis* Olivier, 1883; and at least one species of Alleculidae. Whether this similarity is mimicry, some form of parallel evolution or other mechanism would be speculative. These mimic-like species show few of the features of Prionoceridae given in the introduction above.

Figure 1. Some mimic-like species of *Idgia* species. Top: Cantharidae sp. 16 May 2009 Tung Chung, Lantau. Bottom: *Eobia chinensis* (Hope) an Oedemeridae.

Sexual dimorphism

The males of *Idgia* and *Prionocerus* species have a pectinate black comb along the inner edge of the anterior tarsi (Figure 2), which is totally absent in the females. This is quite distinct in all species in Hong Kong, with the exception of *Idgia oculata* Redtenbecher 1868.

Figure 2. Protarsus of male *I. flavirostris* Pascoe1860.

Key to the *Idgia* species of Guangdong (modified from Gressitt 1939).

1. Elytra largely pale (testaceous or orange) with dark apices ……. 2
- Elytra dark, usually dark blue or green, never orange or testaceous……..... 3

2. Prothorax rather evenly rounded at sides, edged with long blackish bristles, surface smooth; head and apical halves of femora black; elytra with apical fifth blackish and external margins with black bristles……..***Idgia deusta*** Fairmaire 1878
- Prothorax strongly narrowed behind middle, edged with moderate brownish hairs, finely and sparsely granulose; head largely brownish or testaceous; only extreme apices of femora black; elytra with apical tenth or so black, margins with small pale brown bristles bristles……..***Idgia ungulata*** Champion 1919

3. Head posterior of eyes blackish, and anterior of antennal insertions light testaceous…….. ……..***Idgia flavirostris*** Pascoe1860
- Head anterior of antennal insertions mostly dark..... 4

4. Small species less than 12mm long ....***Idgia flavicollis*** Redtenbacher 1868
- Large species longer than 15mm..... 5

5. Pronotum with a pair of blackish spots each side of the disc, Femora basally testaceous and dark (purplish brown or bluish) apically .....***Idgia oculata*** Redtenbecher 1868
- Pronotum immaculate, smooth and shaped similarly at apex and base; Abdomen metallic green on basal two-thirds; femora entirely metallic green .....……..***Idgia hoffmanni*** Gressitt, 1939

Species accounts

Idgia flavicollis Redtenbacher 1868

Description: Length of Hong Kong specimens: 7-10mm. Shiny metallic green. Head green to shiny blue. Antennae ochraceous. Prothorax testaceous, more orange in older specimens. Pronotal disk smooth with a few bristles and margin with sub-erect black bristles. Ventral surfaces bronzy green, with the apical two abdominal segments and trochanter testaceous. Elytra micropunctate, thinly clothed with recumbent golden-brown hairs and with rows of short erect, black bristles.

Material examined: # 2 of 22.ii.09 Wang Tong on flowers; # 2 of 28.ii.09 Wang Tong on flowers; # 3 of 28.ii.09 Wang Tong on flowers; # 1 of 1.iii.09 Wang Tong on flowers. Female; # 2 of 1.iii.09 Wang Tong on flowers. Male; # 1 of 5.iii.05 Mui Wo, Lantau; # 2 of 5.iii.05 Mui Wo, Lantau.

Site records: 20.ii.09 Wang Tong, Mui Wo, Lantau; 2.iii.08 Wang Tong, Mui Wo, Lantau; 5.iii.05 Wang Tong, Mui Wo, Lantau; 7.iii.06 Wang Tong, Mui Wo, Lantau; 11.iii.06 Wang Tong, Mui Wo, Lantau; 13.iii.08 Wang Tong, Mui Wo, Lantau; 14.iii.08 Wang Tong, Mui Wo, Lantau; 17.iii.08 Wang Tong, Mui Wo, Lantau; 18.iii.06 Mui Wo, Lantau; 19.iii.06 Wang Tong, Mui Wo, Lantau; 21.iii.06 Wang Tong, Mui Wo, Lantau; 25.iii.06 Wang Tong, Mui Wo, Lantau; 26.iii.06 Wang Tong, Mui Wo, Lantau; 27.iii.06 Wang Tong, Mui Wo, Lantau; 28.iii.06 Ngong Ping, Lantau; 2.iv.06 Wang Tong, Mui Wo, Lantau; 5.iv.06 Wang Tong, Mui Wo, Lantau; 14.iv.05 Wang Tong, Mui Wo, Lantau; 17.iv.05 Wang Tong, Mui Wo, Lantau; 18.iv.06 Wang Tong, Mui Wo, Lantau; 26.iv.08 Wang Tong, Mui Wo, Lantau.

Biology: This is by far the commonest species of Prionoceridae in Hong Kong. It is abundant in the last 2-3 weeks of March with extreme dates of 22 February and 26 April. Invariably seen in large numbers and found on almost every indigenous blooming plant on the hillsides, most commonly on *Maesa perlarius* (Lour.) Merr.; *Ligustrum sinense* Lour.; *Celtis sinensis* Pers.; *Zanthoxylum scandens* Blume and *Rhaphioepis indica* (L.) Lindl.; *Phyllanthus emblica* L and *Lonicera* sp. *I flavicollis* seems to favour indigenous species and has been observed feeding on plants close to blooming, although this species was never observed visiting flowers of *Agaretum* sp, *Lantana* sp and *Bauhinia* sp. On 2 March 2006 during and after very heavy rain many beetles of this species were observed sheltering under green painted metal railings.

Distribution: Hong Kong and Taiwan. Redtenbacher (1867) described this species from specimens collected in Hong Kong by the Fregatte Novara expedition.

Figure 3. *Idgia flavicollis* : Top 5 March 2005 . Bottom: 17 April 2005. Both Wang Tong, Mui Wo, Lantau

Figure 4. *Idgia flavicollis* Redtenbacher 1868. Left imago. Right from top. Male genitalia armature: A Lateral view B Lateral view with medium lobe pulled away from the lateral lobes. C Dorsal view D ventral view.

Idgia hoffmanni Gressitt, 1939

Description (from Gressitt 1939): Length 18.5mm. Metallic green and blue. Elytra, ventral surfaces and legs clothed in sub-recumbent short pale tawny hairs. Head and pronotum covered in longer sub-erect or oblique black bristles. Head steel blue with greenish tinge. Clypeus slightly purplish. Antennae pale ochraceous, base of scape piceous. Clothed in very short pale golden hairs. Prothorax orange yellow, sub-hyaline, slightly dark near apex and base, clothed with black setae. Scutellum bronzy purple. Elytra metallic blue-green. Ventral surfaces shiny blueish-green. Last 2-3 abdominal segments and the sides of the preceding sternites orange testaceous. Legs metallic green. Males: inner side of the first three segments of the anterior tarsi with distinct, close toothed black combs beneath.

Distribution: Known only from a few specimens (Geiser pers.comm.) from Lien district in north Guangdong.

Idgia oculata Redtenbecher 1868

Description: Length of Hong Kong specimens: 15.5-18.5mm. Head steel blue to purplish. Antennae testaceous. Prothorax testaceous with a round purplish-edged, black spot each side of the centre of the disk, sparsely covered with long semi-decumbent golden pubescence and sparse semi-erect and shorter black setae. Scutellum dark testaceous to bluish (brighter testaceous in one live specimen). Elytra metallic blue to greenish blue. Metasternum blue green. Abdomen testaceous. Legs purple to black with coxae and basal halves of femora testaceous.

Material examined: # 23 of 25.v.10 Ng Tung Chai; # 24 of 25.v.10 Ng Tung Chai; # 1 of 17.vi.08 Lam Tseun Valley ; # 6 of 22.vi.09 Ng Tung Chai # 2 of 26.vi.07 Upper Lam Tsuen valley. **Site records:** 1.vii.08 Shing Mun; 6.vii.08 Kap Lung.

Figure 4. *Idgia oculata.* 17 June 2008 Lam Tseun Valley

Biology: Flight period centred around June with extreme dates of 25 May and 6 July. Normally encountered in large groups, feeding on various flowering shrubs and trees. Observed on 17 May 2008 on leaves of *Mallotus paniculatus* (Lam) Muell. Arg.

Distribution: Hong Kong and Hainan. Redtenbacher (1867) described this species from specimens collected in China by the Fregatte Novara expedition (which at that time could have included modern day Kowloon or the New Territories). The first reference to this species in Hong Kong was made by Hill (1982) and Hill *et.al* (1982). Mayor (2007) lists only Hainan and not Hong Kong for this species. Geiser (pers.comm.) has noted that Pic (1923) had recorded this species from Tonkin.

Figure 5. *Idgia oculata*. Left imago. Right from top. Male genitalia armature: A Lateral view B Lateral view with medium lobe pulled away from the lateral lobes. C Dorsal view D ventral view.

Idgia ungulata Champion 1919

Description: Length 8-10mm. Pale orange testaceous. Antennae, basal portion of head, extreme apices of elytra, tibiae and tarsi and apical one-tenth of elytra pitchy brown. Eyes almost contiguous on top of the head in males.

Material examined: # 3 of 22.iv.06 Wo tin, Mui Wo, Lantau; # 10 of 27.iv.08 Wang Tong , Mui Wo, Lantau; # 1 of 7.v.07 Wang Tong , Mui Wo, Lantau; # 3 of 9.v.06 Silver mine waterfall, Mui Wo, Lantau; # 12 of 16.v.10 Ng Tung Chai.

Site records: 12.v.09 Wang Tong

Biology: Always found singly. Attracted to lights. One specimen was netted at dusk in flight. Normally found in the daytime under leaves with no sign of feeding.

Distribution: Widely distributed in eastern China. Champion (1919) described this species from specimens collected in Hong Kong Kong by J.J. Walker and F.W. Terry, as well as specimens collected from Amoy.

Figure 6. *Idgia ungulata* 22 April 2006 Mui Wo, Lantau.

Figure 7. *Idgia ungulata*. Left imago. Right from top. Male genitalia armature: A Lateral view B Lateral view with medium lobe pulled away from the lateral lobes. C Dorsal view D ventral view.

Idgia deusta Fairmaire 1878

Description (from Gressitt 1939): Length 9.5-12mm. Orange testaceous. Antennae, head, tibiae and apical one-fifth of elytra, black. Elytra with longitudinal rows of black bristles.

Distribution: Widely distributed in south and east China and Vietnam. Gressitt (1939) recorded this species from Guangdong, but it has not yet been recorded in Hong Kong.

Idgia flavirostris Pascoe 1860

Description: Length of Hong Kong specimens: 9.5-11mm. The bicoloured head makes this species quite distinctive. Base of head to the posterior of the antennal insertions, dorsally, and to the anterior of the eyes ventrally, black with a green or purple tinge. Anterior of the head including palps and antennae, testaceous. Pronotum subquadrate with the posterior two-thirds slightly sinuate, all margins edged with erect black setae. Elytra green to bluish green, sometimes with a red or purple tinge, granulate, though shining. Each elytron with 6-7 rows of erect black setae, the rows becoming less distinct and confused in the posterior third. The antennae from segment four to apex, tarsi, meta and mesa tibiae are darker and have a reddish tinge, though in one specimen this is almost black. Metasternum dark greenish blue. The abdomen in the Hong Kong specimens is testaceous, the disc of the 3 basal segments being slightly dingier. This differs from Pascoe's (1860) description of the abdomen of the type, being black with yellow margins.

Material examined: # 1 of 21.ii.09 Tung Chung Uk, Lantau; # 5 of 26.ii.10 Po Lin, Lantau; # 6 of 26.ii.10 Po Lin, Lantau; # 7 of 26.ii.10 Po Lin, Lantau; # 1 of 8.iii.08 Tung Chung valley, Lantau; # 2 of 8.iii.08 Tung Chung valley, Lantau.

Biology: Flight period from 21 February to 8 March. All records are in well wooded areas above 350m altitude. Mostly seen singly or in very small groups. Observed on blooming *Maesa perlarius* (Lour.) Merr. and *Ligustrum sinense* Lour.

Distribution: Southeastern China including Hong Kong. Mayor (2007) lists only southeast China for this species, even though Pascoe (1860) described the type from north China.

Figure 8. *Idgia flavirostris.* 8 March 2008 Tung Chung valley

Figure 9. *Idgia flavirostris*. Left imago. Right from top. Male genitalia armature: A Lateral view B Lateral view with medium lobe pulled away from the lateral lobes. C Dorsal view D ventral view.

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