

[研究文章 Research Article]

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## Review of the Genus *Platynectes* Straneo, 1939 (Coleoptera: Dytiscidae) from Taiwan

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**Abstract.** The diving beetle genus *Platynectes* Straneo, 1939 of Taiwan is reviewed based on freshly collected materials and museum collections. The altitudes of habitats are different between two *Platynectes* species. *P. babai* Satô, 1982 appears to have a preference for higher elevations (from 750 to 2,000 meters), while *P. gemellatus* Štátný, 2003 appears to prefer lower elevations (from 50 to 1,200 meters). In addition, *P. babai* was observed aestivating in wet mud during the dry season. A key to the Taiwanese species of *Platynectes* is provided.

**Key words:** Dytiscidae, diving beetle, aquatic insect, biology, Taiwan

### Introduction

*Platynectes* Straneo, 1939 is a genus of aquatic beetles inhabiting forest ponds, streams, and water films on rock surfaces, and is widely distributed in Palearctic, Oriental, Neotropical regions, as well as in Australia (Hájek et al., 2019; Štátný, 2003). Two species have so far been recorded in Taiwan (Nilsson, 1995; Štátný, 2003; Liu, 2019; Nilsson & Hájek, 2020a, 2020b). I conducted a survey in Taiwan from 2018–2020, and have recorded locality information, including altitudes as well as some notes on the biology of these species.

### Materials and methods

Male genitalia were dissected from water-relaxed specimens and examined in temporary glycerine slides without cover glasses. In case the aedeagus was already dissected by previous authors and dry-mounted, it was relaxed in a drop of water, then transferred to 10% KOH which was heated on a hot plate at 80°C until the solution appeared to be superficially degassed. The genitalia were then transferred directly to glycerine for examination. After examination, the aedeagus was rinsed in 95% alcohol before being mounted in Euparal on a small slide below the respective specimen. In some duplicate specimens, the aedeagus was mounted on the same card as the specimen using a water-soluble glue. Male genitalia and morphological characters were examined using a Leica DM750 compound microscope. The map (Fig. 2) was produced in Photoshop CS6.

The materials examined in this paper are deposited at department of Entomology, National Taiwan University, Taipei City, Taiwan (NTU: Chiun-Cheng Ko, Jhih-Rong Liao); National Museum of Natural Science, Taichung City, Taiwan (NMNS: Jing-Fu Tsai); Department of Entomology, National Chung Hsing University, Taichung City, Taiwan (NCHU: Man-Miao Yang, Bao-Cheng Lai, Sheng-Feng Lin) and the author's collection (HCC: Hsing-Che Liu's private collection, Hsinchu County, Taiwan).

### Results

#### *Platynectes babai* Satô, 1982

Chinese name: 馬場氏扁形豆龍蟲  
(Figs. 1A–C)

*Platynectes babai* Satô, 1982: 3.

**Material examined. TAIWAN:** 1 ex. Tachien [= in Taichung City], 2. IX. 1993, Ching-Hsin Hsu leg. (NTU); 1 ex. Taichung, Hoping Wushikeng, 15–16. III. 1995, W. T. Yang leg. by UV light (NMNS); 2 ex. Nantou county, Jenai Chunyung, 10–12. VIII. 1998, C. S. Lin & W. T. Yang leg. by UV light (NMNS); 2 males, 2 females. Taichung City, near Lishan (梨山附近), 11. V. 2018, Hsing-Che Liu leg. (HCC); 3 ex. Nantou County, Heshu (和社), 16. V. 2018, Hsing-Che Liu leg. (HCC); 7 ex. Nantou County, Dongpu (東埔), 16. V. 2018, Hsing-Che Liu leg. (HCC); 2 ex. Taichung City, near Dasyueshan (大雪山附近), 10. X. 2018, Hsing-

Che Liu leg. (HCC); 2 ex. Chiayi County, Alishan Township (阿里山鄉), 30. IV. 2019, Hsing-Che Liu leg. (HCC); 4 ex. Chiayi County, Meishan Township (梅山鄉), 29. IV. 2019, Hsing-Che Liu leg. (HCC); 1 ex. Taoyuan City, Fuxing Township, 2019, unknown leg. (HCC); 5 ex. Nantou County, Renai Township, Nanfeng Village (南豐村), 25. II. 2020, Hsing-Che Liu, Martin Fikáček & Uitsiann Ong leg (HCC).

**Diagnosis.** Body length 5.4–6.0 mm, body width 3.3–4.0 mm. Head black, interocular region with brown to yellowish spots. Pronotum black, anterior angles brown to yellowish. Elytral margin with faint yellowish longitudinal stripes in posterior half, apex of elytron with spot (Fig. 1A). Male ventrite VI with punctures, lateral striate area with four or five long deep rugae, middle area with seven or eight short deep rugae, while female ventrite VI without deep rugae.

**Differential diagnosis.** *P. babai* Satô, 1982 is similar to *P. davidorum* Hájek, Alarie, Šťastný & Vondráček, 2019 and *P. hainanensis* Nilsson, 1998; it can be easily differentiated by its body length (5.4–6.0 mm), and by the narrow median lobe of the male genitalia (Fig. 1C) (Hájek et al., 2019; Šťastný, 2003).

**Distribution.** This species is only known from Taiwan (Fig. 2B) (Nilsson & Hájek, 2020a).

**Bionomics.** This species inhabits stagnant (usually shallow) water pools in the forests at altitude between 750 and 2,000 meters (Fig. 2A). Some of the examined specimens were collected at light traps. In the dry season, *P. babai* can utilize wet mud to aestivate (Figs. 1I–J).

### *Platynectes gemellatus* Šťastný, 2003

Chinese name: 條紋扁形豆龍蟲  
(Figs. 1D–F)

*Platynectes gemellatus* Šťastný, 2003: 235.

**Material examined. TAIWAN:** 1 ex. Nantou County, Lianhuachi (蓮華池), 14. X. 1993, T. C. Hsu leg. (NTU); 3 ex. Nantou County, Lianhuachi (蓮華池), 14. XI. 1993, Shu-Ling Wei leg. (NTU); 1 ex. Huisun Forest Area [= in Nantou County, 惠蓀林場], 18–22. I. 1999 (NCHU); 3 males, 1 female. Hsinchu County, Emei Township, Shishan (獅山), 27. III. 2018, Hsing-Che Liu leg. (HCC); 5 ex. Yilan County, Fushan Botanical Garden (福山植物園), 8. V. 2018, Hsing-Che Liu leg. (HCC); 4 ex. Nantou County, Lianhuachi (蓮華池), 30. XI. 2018, Hsing-Che Liu leg. (HCC); 2 ex. Nantou County, Puli Township (埔里), 15. II. 2020, Hsing-Che Liu leg. (HCC); 3 ex. New Taipei City, Wanggu Waterfall (望古瀑布), 30. III. 2020, Hsing-Che Liu leg. (HCC).

**Diagnosis.** Body length 4.8–5.6 mm, body width 3.1–3.6 mm. Head with yellowish spots. Pronotum black, anterior angles yellowish. Each elytron with eight yellowish longitudinal vittae and one yellowish interrupted transverse vitta (Fig. 1D); Male ventrite VI with punctures; lateral striate area with four or five long and deep rugae; middle area without deep rugae.

**Differential diagnosis.** This species is very similar to *P. dissimilis* (Sharp, 1873); *P. dissimilis* can be distinguished from both species by having its genitalic median lobe apically pointed and finely beaded (Šťastný, 2003).

**Distribution.** China (Guizhou, Guangxi, Guangdong, Hong Kong, Macao, Fujian, Jiangxi), Taiwan (Fig. 2B) (Nilsson & Hájek, 2020a).

**Bionomics.** All examined specimens were collected from ponds or streams (Figs. 1G–H) at altitude between 50 and 1,200 meters in Taiwan (Fig. 2A).

**Remark.** This species was previously confused with *Platynectes dissimilis*. A review of *Platynectes* from Southeast Asia by Šťastný (2003) only records the distribution of *P. gemellatus* and *P. babai* in Taiwan.

### Key to Taiwanese species of the genus *Platynectes* Leach, 1815

1. Elytra without yellowish transverse vittae (Fig. 1A); male genitalia: apex of median lobe strongly narrowed (Fig. 1C); distribution: altitude from 750 to 2,000 meters (Fig. 2A).....*Platynectes babai* Satô, 1982
- Elytra with yellowish transverse vittae (Fig. 1D); male genitalia: apex of median lobe weakly narrowed (Fig. 1F); distribution: altitudes from 50 to 1,200 meters (Fig. 2A).....*Platynectes gemellatus* Šťastný, 2003

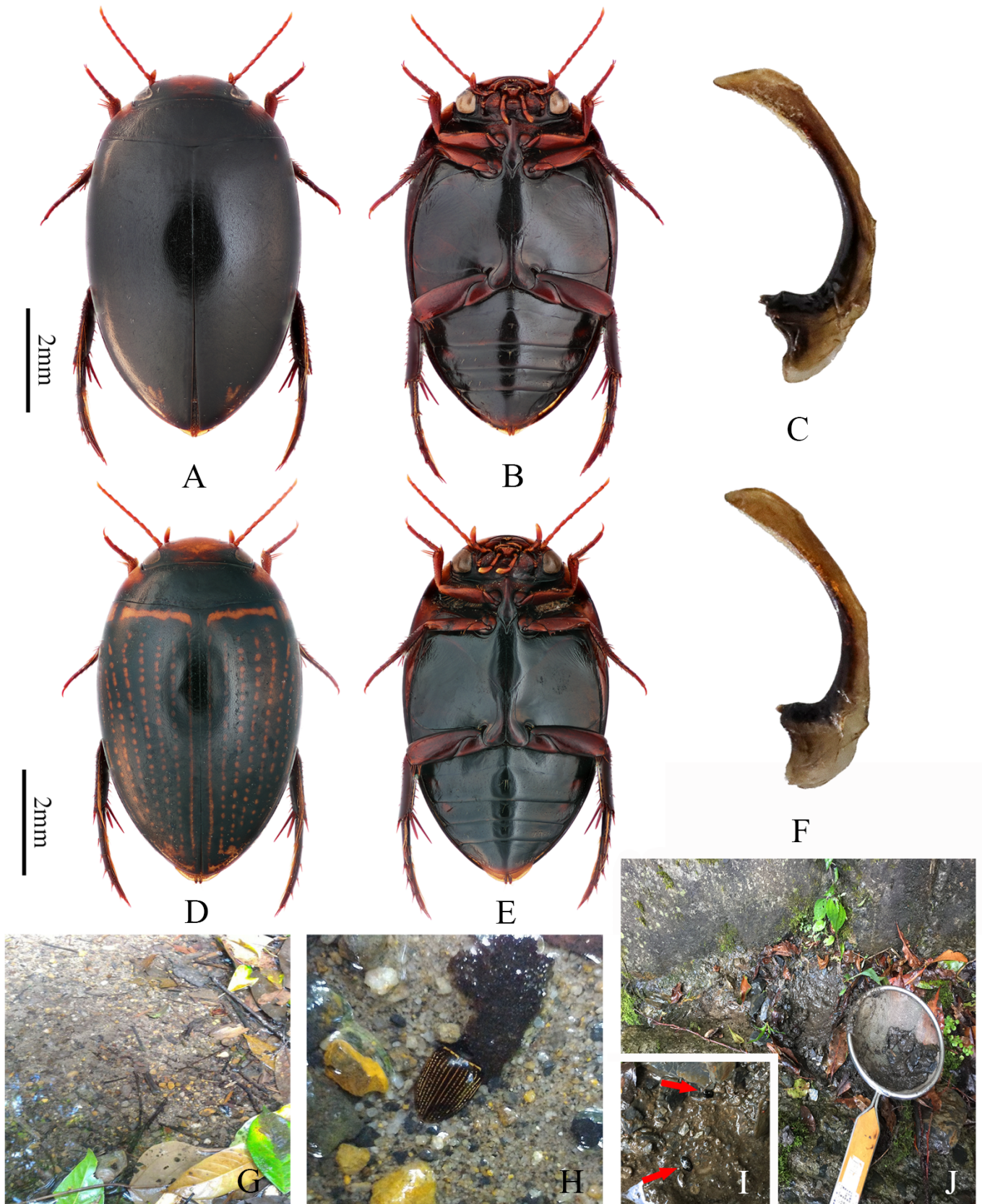


Figure 1. *Platynectes* spp. A–C, I–J - *P. babai*; D–H - *P. gemellatus* (A, D – dorsal habitus; B, E - ventral habitus; C, F - median lobe of male genitalia, lateral view; G–J - habitat, from Nantou county). Photo by Uitsiann Ong (A–B, D–E).

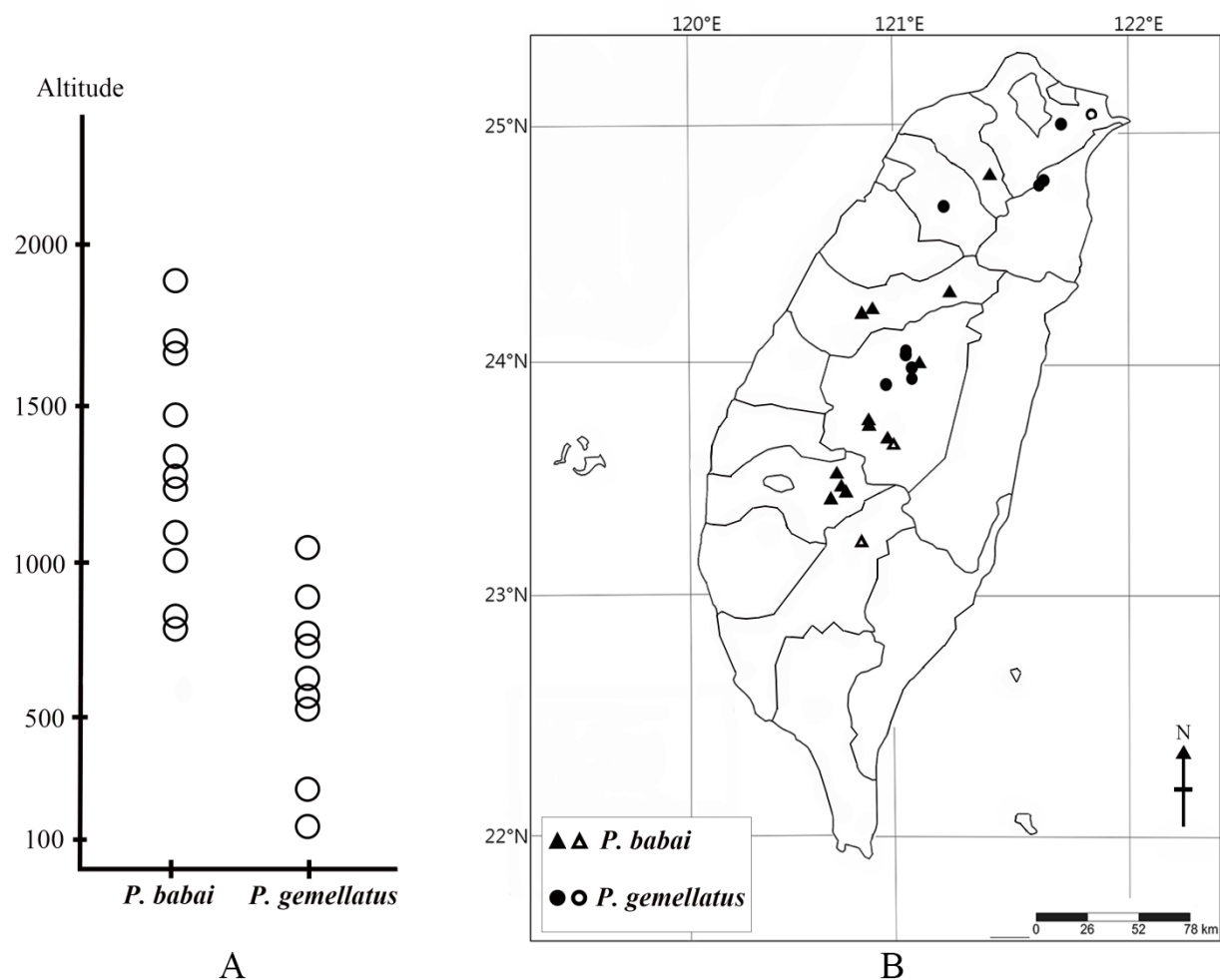


Figure 2. Distribution of *Platynectes* spp. in Taiwan. A - Altitude, unit: meter; B - Map (● and ▲: Material examined; ○ and △: Literature records).

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## 臺灣產扁形豆龍蝨屬（鞘翅目：龍蝨科）回顧

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**摘要:** 本研究根據收集來自博物館和實地調查的標本，回顧臺灣產的扁形豆龍蝨屬 *Platynectes* Straneo, 1939 並提供臺灣產扁形豆龍蝨屬的檢索表。兩種扁形豆龍蝨分佈海拔高度存在差異，馬場氏扁形豆龍蝨 *Platynectes babai* Satô, 1982 分布較高 (海拔 750–2000 公尺) 而條紋扁形豆龍蝨 *Platynectes gemellatus* Štátný, 2003 則分布較低 (海拔 50–1200 公尺)，除此之外本文亦記錄在旱季時馬場氏扁形豆龍蝨可以進入潮濕的泥土裡度過枯水期。

**關鍵字:** 龍蝨科、龍蝨、水生昆蟲、生物學、臺灣