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Checklist of Species of *Bactrocera* (DIPTERA: TEPHRITIDAE) in Taiwan

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ABSTRACT

A revised checklist of *Bactrocera* Macquart, 1835 (**DIPTERA: TEPHRITIDAE: DACINAE: DACINI**) species occurring in Taiwan is presented herein, including 12 previously reported species and one newly recorded species: *B. abbreviata* (Hardy, 1974). Basic information for each species (namely taxonomic status, global distribution, attractants and host records) is provided.

Key words: fruit flies, TEPHRITIDAE, checklist, taxonomy, Taiwan

Introduction

The true fruit flies, those of the family **TEPHRITIDAE**, are one of the most economically important families of the order **DIPTERA**. The larvae of most species develop in plant tissue. Species that are borers or miners of commercial crops can cause severe damage to the fruit and vegetable industries (White and Elson-Harris, 1992).

The threat of the introduction of polyphagous fruit flies necessitates the imposition of restrictions on imported fruits; therefore, products originating from areas infested with fruit flies have limited access to international markets. According to the International Standards for Phytosanitary Measures 26 (IPPC, 2018), scientific evidence of the absence of certain fruit fly species is required to declare a country a pest free area (an area in which a specific pest does not occur). Taxonomic information that can serve this scientific evidence, such as lists of species and areas of distribution, is the main basis for quarantine regulations and trade negotiations (Shiao, 2019).

The tribe **DACINI** of the **TEPHRITIDAE** subfamily **DACINAE** includes four genera: *Bactrocera* Macquart, 1835; *Dacus* Fabricius, 1805; *Monacrostichus* Bezzi, 1914; and *Zeugodacus* Hendel, 1927 (Drew and Hancock, 2000; Krosch et al., 2012; Freidberg et al., 2017; Doorenweerd et al., 2018). All species of the tribe are frugivorous or florivorous and are distributed mostly in the tropical and subtropical regions of Southeast Asia. Formerly, almost all species of the tribe were assigned to the genera *Dacus* and *Bactrocera*. However, molecular evidence has indicated that *Bactrocera* is not monophyletic but rather consists of two major clades: *Bactrocera sensu*

stricto and the *Zeugodacus* group subgenera (Virgilio et al., 2015). The *Zeugodacus* group subgenera are a sister group to *Dacus* rather than to *Bactrocera* (Krosch et al., 2012). Hence, the subgenus *Bactrocera* (*Zeugodacus*) is treated as a generic rank (Virgilio et al., 2015).

The genus *Bactrocera* includes approximately 461 described species (Doorenweerd et al., 2018). At least 50 of the species are considered major pests, making *Bactrocera* the most economically consequential fruit fly genus. Many of the species are highly polyphagous; for example, the Oriental fruit fly *B. dorsalis*, native to tropical Asia, has been documented in over 270 host plant species (White and Elson-Harris, 1992; Vargas et al., 2015).

In light of recent changes to the taxonomic status of several species, an updated checklist of *Bactrocera* species occurring in Taiwan is needed (Krosch et al., 2012; Virgilio et al., 2015). A treatment of TEPHRITIDAE by the Japanese Empire, at that time including Taiwan, was published in 1933 and recorded a total of 27 species of the tribe **DACINI** in Taiwan (Shiraki, 1933). A revised checklist of and illustrated keys to Taiwanese **DACINI** listing 35 species, was later published (Tseng et al., 1992). However, several of the taxon names used in these papers were downgraded to junior synonyms or changed for other reasons (Drew and Romig, 2013). A critical checklist of Taiwanese **DACINI** reevaluated all previous records and listed 30 species (Doorenweerd et al., 2019); of these, 12 belonged to the genus *Bactrocera*, including four species newly recorded in Taiwan. A checklist of the *Zeugodacus* species was also published in 2019 (Shiao, 2019). A checklist of the species of *Bactrocera*, however, is still lacking. The aim of this paper is to provide an updated checklist of the species of *Bactrocera* occurring in Taiwan.

Acronyms for type specimen deposition institutions:

BBM: Department of Entomology Collection, Bernice P. Bishop Museum, Honolulu, Hawaii, USA.

BCIQT: Animal & Plant Quarantine Laboratory, Taichung Branch Office, Bureau of Commodity Inspection and Quarantine, Ministry of Economic Affairs, Taichung, Taiwan.

FAFU: Institute of Beneficial Insects, Fujian Agriculture and Forestry University, Fuzhou, China.

IZAS: Institute of Zoology, Chinese Academy of Sciences, Beijing, China.

MCSNM: Museo Civico di Storia Naturale di Milano, Milan, Italy.

NIAS: Laboratory of Insect Systematics, National Institute of Agro-Environmental Sciences, Tsukuba, Japan.

NMNH: Natural History Museum, London, UK.

NMW: Naturhistorisches Museum Wien, Vienna, Austria.

NTU: Department of Entomology, National Taiwan University, Taipei, Taiwan.

SDEI: Senckenberg Deutsches Entomologisches Institut, Müncheberg, Germany.

UOPJ: Entomological Laboratory, Osaka Prefecture University, Osaka, Japan.

USNM: United States National Entomological Collection, United States National Museum of Natural History, Washington, USA.

ZMAN: Zoologisch Museum, Universiteit van Amsterdam, Universiteit van Amsterdam, Amsterdam, The Netherlands (collections now housed at Naturalis Biodiversity Center, Leiden, The Netherlands).

Genus *Bactrocera* Macquart, 1835 背寡毛實蠅屬

Bactrocera Macquart, 1835: 452. Type species *Bactrocera longicornis* Macquart, 1835, by monotypy.

Checklist of *Bactrocera* species occurring in Taiwan

1. *Bactrocera abbreviata* (Hardy, 1974) (Fig. 1) 短痣背寡毛實蠅

Dacus abbreviatus Hardy, 1974: 44.

Bactrocera (*Zeugodacus*) *abbreviata*: Norrbom et al. (1998: 101).

Type locality: Luzon Is., Philippines (holotype male in BBM).

Distribution: China (Hong Kong), Philippines (Luzon Is., Laguna), Thailand (Chiang Lai), Taiwan (Kinmen Is.) [**New record**].

Male attractant: Zingerone (Doorenweerd et al., 2018), cue-lure? (see "Material Examined")

Hosts: *Linociera ramiflora*, *Olea salicifolia* (family **OLEACEAE**) (Allwood et al., 1999).

Fig. 1. *Bactrocera abbreviata*. (A) dorsal view, (B) head, frontal view. Scale bars: (A) = 2 mm; (B) = 1 mm.

Economic importance: None.
Material examined: KINMEN: Longkou, 1♀, 24. I. 2021, H. M. Wu; Shangyi, 1♂, 23. XII. 2020, H. M. Wu; Yangzhai, 1♂, 24. I. 2021, H. M. Wu. (All specimens were collected by cue-lure traps)
Description:

Head fulvous; face with a pair of medium-sized oval black spots; scutum black; lateral postsutural yellow vittae present and short; medial postsutural yellow vitta absent; scutellum with a medial longitudinal black band; wings colorless except for a fuscous subcostal cell; fore and hind tibiae black; mid tibiae basally dark brown; abdomen black except for a pair of yellow areas on posterolateral part of tergum II and a pair of longitudinal fulvous bands on terga III-V.
Diagnosis:

Bactrocera abbreviata is similar to *B. obscurata* and *B. pernigra* in possessing an entirely black scutum and a pair of short lateral postsutural vittae. It differs in having wings without a costal band or an anal streak.

2. *Bactrocera bhutaniae* Drew and Romig, 2013 不丹背寡毛實蠅

Bactrocera bhutaniae Drew and Romig, 2013: 51.
Type locality: Rimchu, Bhutan (holotype male in BMNH).
Distribution: Bangladesh, Bhutan, India (Andaman Is.), Taiwan, Thailand, Vietnam.
Male attractant: Cue-lure (Drew and Romig, 2013).
Host: Unknown.
Economic importance: None.
Remarks:

Bactrocera bhutaniae was first reported in Taiwan by Doorenweerd et al. (2019) based on 11 specimens collected at a 722-m altitude in Lianhuachi, Yuchi Township, Nantou County. Under the "Distribution" section for this species, however, this locality was omitted, and Lanyu Island was listed instead, apparently due to an inadvertent error. *Xylosma brachystachys* (family **FLACOURTIACEAE**) has been reported to be the host of *B. bhutaniae* from which certain specimens are bred (Drew and Romig, 2013). However, the status of this host species is unresolved (theplantlist.org, 2013). The genus *Xylosma* has been moved to the family SALICACEAE with no new designation for the type specimen of *X. brachystachys*. According to label data listed by Drew and Romig (2013), specimens have also been collected from **ICACINACEAE** in India.

Bactrocera bhutaniae is similar to *B. rubigina* in appearance. Both species possess a red to brown scutum with variable dark patterns, a pair of yellow lateral postsutural vittae, wings with a narrow costal band and an anal streak, and a T-shaped dark mark on abdominal terga III-V. It differs from *B. rubigina* in having a more extensive dark pattern on the scutum, broad and parallel lateral postsutural vittae, a costal band that slightly overlaps R_{2+3}, and abdominal terga III-V without a lateral dark pattern (Drew and Romig, 2013). Before *B. bhutaniae* was described, specimens were likely

misidentified as *B. rubigina* or red scutum color variants of *B. dorsalis* (Doorenweerd et al., 2019).

3. *Bactrocera costalis* (Shiraki, 1933) 廣帶背寡毛實蠅

Chaetodacus costalis Shiraki, 1933: 66.

Bactrocera (*Bactrocera*) *costalis*: Norrbom et al. (1998: 89).

Type locality: 'Kuranu' [= Kuraru, now Kueitzuchiao (龜子角社), Hengchun, Pingtung County] and 'Pinan' [= Peinan (卑南鄉), Taitung County] (Chu and Yamanaka, 1973), Formosa [= Taiwan] (lectotype male and paralectotype female in NIAS, designated by Drew and Romig, 2013).

Distribution: Philippines, Taiwan.

Male attractant: Cue-lure (Drew and Romig, 2013).

Hosts: *Cayaponia laciniosa* (family **CUCURBITACEAE**); *Solanum surattense* (family **SOLANACEAE**) (Shiraki, 1933).

Economic importance: None.

Remarks:

This species had not been collected in Taiwan since 1995 (Chang, 2001; Doorenweerd et al., 2019).

4. *Bactrocera dorsalis* (Hendel, 1912) 東方果實蠅

Musca ferruginea Fabricius, 1794: 342. Preoccupied by

Musca ferruginea Scopoli, 1763 (see Hardy, 1969a).

Dacus ferrugineus: Fabricius (1805: 274).

Dacus dorsalis Hendel, 1912: 18.

Bactrocera ferruginea: Bezzi (1913: 95).

Chaetodacus ferrugineus var. *dorsalis* Hendel, 1915: 426.

Chaetodacus ferrugineus: Bezzi (1916: 104).

Chaetodacus ferrugineus dorsalis: Bezzi (1916: 104).

Chaetodacus ferrugineus var. *okinawanus* Shiraki, 1933: 62; Hardy and Adachi (1956: 8); Hardy (1969: 402).

Dacus (*Strumeta*) *dorsalis*: Hardy and Adachi (1956: 7); Hardy (1969: 395); Hardy (1973: 41); Hardy (1974: 29).

Strumeta dorsalis: Hering (1956: 63).

Strumeta ferruginea: Hering (1956: 63).

Strumeta dorsalis okinawana: Shiraki (1968: 23).

Dacus (*Bactrocera*) *dorsalis*: Hardy (1977: 49); Drew (1982: 60); Drew (1989: 63).

Dacus (*Bactrocera*) *semifemoralis* Tseng et al., 1992: 46.

Dacus (*Bactrocera*) *yilanensis* Tseng et al., 1992: 52.

Bactrocera (*Bactrocera*) *dorsalis*: Drew and Hancock (1994: 17); Norrbom *et al.* (1998: 90); Drew *et al.* (2007: 3).

Bactrocera (*Bactrocera*) *variabilis* Lin *et al.*, 2011: 896.

Type locality: 'Koshun' [= Hengchun, Pingtung County], Formosa [= Taiwan] (lectotype female in BMNH, designated by Drew and Hancock, 1994).

Distribution: Over 65 countries in Southeast Asia, Africa, and the Pacific region.

Male attractant: Methyl eugenol (Drew and Romig, 2013).

Hosts: Over 300 species of commercial and wild hosts (Allwood et al., 1999).

Economic importance: Pest.

Remarks:

Bactrocera dorsalis belongs to the *dorsalis* species complex (the Oriental Fruit Fly [OFF] complex), a group containing highly morphologically similar species. Hardy (1969a) provided a diagnostic key to *B. dorsalis* and 15 other species of little to no economic importance. Drew and Hancock (1994) revised the list of species of the complex from Southeast Asia and added those from Australasia and Oceania (Drew, 1989), resulting in a total of 68 species. After further revisions in 2013 and 2014 (Drew and Romig, 2013; Schutze et al., 2014), 85 species are recognized. Three species of the OFF complex, namely *B. dorsalis*, *B. dorsaloides*, and *B. occipitalis*, are known to occur in Taiwan.

5. *Bactrocera dorsaloides* (Hardy and Adachi, 1954) 擬東方果實蠅

Dacus (*Strumeta*) *dorsaloides* Hardy and Adachi, 1954: 167.

Dacus (*Bactrocera*) *dorsaloides*: Hardy (1977: 50).

Bactrocera (*Bactrocera*) *dorsaloides*: Drew and Hancock (1994a: 20); Norrborm et al. (1998: 90).

Type locality: Mt. Makiling (Luzon Is.), Philippines (holotype female in USNM).

Distribution: Philippines (Luzon Is.), Taiwan (Lanyu Is.).

Male attractant: Cue-lure (Drew and Romig, 2013).

Hosts: Rainforest plant species of family **SAPOTACEAE** (Allwood et al., 1999) including *Pouteria duklitan* and *P. macranthum* (Drew and Hancock, 1994).

Economic importance: None.

Remarks:

Bactrocera dorsaloides belongs to the *B. dorsalis* species complex. It can be distinguished from *B. dorsalis* by a pair of short lateral postsutural vittae narrowing posteriorly; the lateral postsutural vittae of *B. dorsalis* are broad and parallel (Drew and Romig, 2013).

6. *Bactrocera hyalina* (Shiraki, 1933) 透翅背寡毛實蠅

Chaetodacus hyalinus Shiraki, 1933: 62.

Strumeta asatoi Shiraki, 1968: 26; Norrbom *et al.* (1998: 91).

Bactrocera (*Bactrocera*) *hyalina*: Norrbom *et al.* (1998: 91).

Dacus (*Bactrocera*) *hsui* Tseng et al., 1992: 34.

Type locality: Kagoshima (Kyushu Is.), Japan (holotype female in NIAS).

Distribution: China, Japan (Kyushu Is.), Thailand, Taiwan.

Male attractant: Unknown.

Hosts: A range of plant species of family **LAURACEAE** (Allwood et al., 1999) including *Cinnamomum camphora*, *C. insularimontanum*, *Machilus thunbergii* (Ito, 1983), *Ocotea lancifolia* and *Litsea verticillata* (Liang et al., 1993). *Osmanthus insularis* (family **OLEACEAE**) had also been recorded (Drew and Romig, 2013).

Economic importance: None.

Remarks:

The original description of *B. hyalina* (as *Chaetodacus hyalinus*) was based on a single female specimen without a host record (Shiraki, 1933). *Dacus* (*Bactrocera*) *hsui* (Tseng et al., 1992) was listed as a synonym of *B. hyalina* by Drew and Romig (2013) due to the lack of significant distinguishing characteristics between the two species. The male holotype of *D. hsui*, collected from Taipingshan, Yilan County, Taiwan, is deposited at National Taiwan University (Tseng et al., 1992).

7. *Bactrocera latifrons* (Hendel, 1915) 三瓣背寡毛實蠅 （三瓣實蠅、茄實蠅）

Dacus amoyensis Froggatt, 1909: 36. Unavailable name.

Chaetodacus latifrons Hendel, 1915: 425.

Chaetodacus antennalis Shiraki, 1933: 56; Hardy (1973: 49); White and Liquido (1995: 250-252).

Bactrocera (*Bactrocera*) *latifrons*: White and Liquido (1995: 251); Norrbom et al. (1998: 91).

Type locality: Tainan, Formosa [= Taiwan] (lectotype male in BMNH, designated by Norrbom et al., 1998).

Distribution: Bangladesh, China, India, Indonesia (Kalimantan, Sulawesi), Laos, Malaysia (peninsular), Pakistan, Singapore, Sri Lanka, Taiwan, Thailand, Vietnam. Introduced to Africa (Tanzania), Hawaii, and Japan (Yonaguni Is.).

Male attractant: Latilure (Drew and Romig, 2013).

Hosts: Recorded from plant species of nine families, including family **LYTHRACEAE, MYRTACEAE, OLEACEAE, PASSIFLORACEAE, RHAMNACEAE, RUTACEAE, SAPINDACEAE, VERBENACEAE** and **SOLANACEAE** of which contains the major host species (Allwood et al., 1999).

Economic importance: Pest.

Remarks:

Bactrocera latifrons is similar to species in the *B. dorsalis* complex in terms of similar body color patterns. *B. latifrons* differs from *B. dorsalis* complex in having a trilobed apex on the piercer and uniformly dark orange to brown abdominal terga.

8. *Bactrocera nigrifacia* Zhang, Ji and Chen, 2011 黑臉背寡毛實蠅

Bactrocera (*Bactrocera*) *nigrifacia* Zhang, Ji & Chen, 2011: 598.

Type locality: Jinghong (Yunnan Province), China (holotype male in FAFU).

Distribution: Bangladesh, China, Taiwan (Lanyu Is.), Thailand.

Male attractant: Cue-lure (Drew and Romig, 2013).

Hosts: *Callicarpa arborea* (family **LAMIACEAE**), *Capparis sepiaria* (family **CAPPARACEAE**), *Zehneria wallichii*, *Flueggea virosa* (family

PHYLLANTHACEAE) (Drew and Romig, 2013).

Economic importance: None.

Remarks:

Bactrocera nigrifacia was first recorded in Taiwan by Doorenweerd et al. (2019) based on a single specimen captured on Lanyu Island. It belongs to the *B. nigrotibialis* species complex, which is characterized by extensive dark markings on the femora. *B. nigrifacia* can be distinguished from other species in the complex by its entirely black fore femora (Drew and Romig, 2013).

9. *Bactrocera obscurata* (de Mejeire, 1911) 暗色背寡毛實蠅

Dacus ferrugineus var. *obscurata* de Meijere, 1911: 373.

Dacus (*Bactrocera*) *obscuratus*: Hardy (1983: 17).

Bactrocera (*Bactrocera*) *obscurata*: Norrbom *et al.* (1998: 93).

Bactrocera (*Bactrocera*) *heppneri* White, in White and Evenhuis, 1999: 496.

Type locality: Java, Indonesia (Holotype female in ZMAN).

Distribution: Indonesia (Java), Japan (Iriomote Is.), Taiwan.

Male attractant: Unknown.

Host: *Diospyros maritima* (family **EBENACEAE**) (Drew and Romig, 2013).

Economic importance: None.

Remarks:

The male holotype (deposited at the Florida State Collection of Arthropods) and two female paratypes of *B. heppneri* were collected at Kenting Park, Pingtung County, Taiwan (White and Evenhuis, 1999); however, the species was downgraded to a junior synonym of *B. obscurata* by Drew and Romig (2013).

10. *Bactrocera occipitalis* (Bezzi, 1919) 後顱背寡毛實蠅

Chaetodacus ferrugineus var. *occipitalis* Bezzi, 1919: 423.

Dacus (*Strumeta*) *dorsalis* var. *occipitalis*: Hardy and Adachi (1954: 166); Hardy (1969b: 405); Hardy (1969a: 479).

Dacus (*Strumeta*) *occipitalis*: Hardy (1974: 39).

Dacus (*Bactrocera*) *occipitalis*: Hardy (1977: 51); Drew (1982: 81).

Bactrocera (*Bactrocera*) *occipitalis*: White and Elson-Harris (1992: 192); Drew and Hancock (1994: 45); Norrbom et al. (1998: 93).

Type locality: Luzon Is., Philippines (lectotype male in MCSNM, designated by Hardy, 1969b).

Distribution: Brunei, Indonesia (Kalimantan), Malaysia (Sabah), Philippines (Luzon Is.), Taiwan.

Male attractant: Methyl eugenol (Drew and Romig, 2013).

Hosts: *Mangifera indica* (family **ANACARDIACEAE**), *Psidium guajava* (family **MYRTACEAE**) (Drew and Hancock, 1994), *Citrus japonica* (family **RUTACEAE**) (Allwood et al., 1999).

Economic importance: Pest.

Remarks:

Bactrocera occipitalis was reported to be present in Taiwan by Tseng et al. (1992) but not by Drew and Romig (2013). Doorenweerd et al. (2019) confirmed the presence of this species in Taiwan based on 18 specimens from Lanyu Island and two specimens from Fushan Botanical Garden, Yilan County. *Bactrocera occipitalis* belongs to the *B. dorsalis* species complex. It can be distinguished from *B. dorsalis* by its larger oval facial spots, its broader medial longitudinal black band on the terga, and, in some individuals, a dark spot on the outer apical surfaces of the fore femora (Drew and Romig, 2013).

11. *Bactrocera parvula* (Hendel, 1912) 微小背寡毛實蠅

Dacus parvulus Hendel, 1912: 21; White and Liquido (1995: 250) (synonymized with *B.* (*Bactrocera*) *latifrons* (Hendel)).

Chaetodacus parvulus: Shiraki (1933: 54).

Dacus (*Strumeta*) *parvulus*: Hardy (1968: 113); Hardy (1973: 49).

Type locality: Kanshirei (= Guanziling, Tainan City), Taiwan (syntypes in DEI and NMW).

Distribution: Taiwan [Endemic].

Male attractant: Unknown.

Host: Unknown.

Economic importance: None.

Remarks:

Bactrocera parvula was synonymized with *B. latifrons* by White and Liquido (1995) but restored as a valid species by Drew and Romig (2013). It differs from *B. latifrons* in that dark

patterns appear at the apices of all femora and more extensive dark markings appear on the abdomen (Doorenweerd et al., 2019). It was reported to be "frequently found throughout Taiwan" (Tseng et al., 1992) but without specification of any surveying methods (Doorenweerd et al., 2019).

12. *Bactrocera pernigra* Ito, 1983 細痣背寡毛實蠅

Bactrocera pernigra Ito, 1983: 23.

Bactrocera (*Bactrocera*) *pernigra*: Norrbom et al. (1998: 94).

Dacus (*Bactrocera*) *tenuivittatus* Tseng et al., 1992: 47.

Type locality: Aosima, Hyuga, Miyazaki, Kyushu, Japan (holotype male in UOPJ).

Distribution: Japan, Taiwan, Thailand.

Male attractant: Cue-lure (Drew and Romig, 2013).

Host: Unknown.

Economic importance: None.

Remarks:

Bactrocera pernigra belongs to the *B. nigrotibilalis* species complex. *Dacus* (*Bactrocera*) *tenuivittatus*, of which a holotype was collected at Pashenshan, Taichung City, Taiwan (deposited at the Bureau of Commodity Inspection & Quarantine; Tseng et al., 1992), was downgraded to a junior synonym of *B. pernigra* by Drew and Romig (2013).

13. *Bactrocera rubigina* (Wang and Zhao, 1989) 鏽紅背寡毛實蠅

Dacus rubiginus Wang and Zhao, 1989: 211.

Bactrocera (*Bactrocera*) *rubigina*: Norrbom et al. (1998: 95); Drew et al. (2007: 5).

Type locality: Hainan Is., China (holotype male in IZAS).

Distribution: Bangladesh, Bhutan, China, Taiwan, Thailand, Vietnam.

Male attractant: Cue-lure (Drew and Romig, 2013).

Host: *Litsea verticillata* (family **LAURACEAE**) (Liang et al., 1993).

Economic importance: None.

Remarks:

Earlier records of the distribution of *Dacus* (*Bactrocera*) *ferrugineus* in Taiwan (Tseng et al., 1992) are similar to those of *B. rubigina* by Doorenweerd et al. (2019). It is similar to the red scutum color variant of *B. dorsalis*, but its males are attracted to cue-lure instead of methyl eugenol.

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台灣產背寡毛實蠅屬 (*Bactrocera*) (雙翅目：果實蠅科) 物種名錄

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摘　　要

本文重新修訂台灣產背寡毛實蠅屬物種名錄，迄今已知十二物種加上一新紀錄物種種短痣背寡毛實蠅 *Bactrocera abbreviata* (Hardy, 1974)，共計確認有 13 個物種。文中提供包括物種地位、模式產地及存放地、異名、已知地理分布、雄蟲誘引劑、寄主植物等分類相關資訊。

關鍵詞：果實蠅科、物種名錄、分類學、台灣