NOTE

Oldenlandiopsis Terell & W. H. Lewis (Rubiaceae), a Newly Recorded Genus in Taiwan

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Abstract: *Oldenlandiopsis callitrichoides* (Griseb.) Terrell & W. H. Lewis (Rubiaceae) was found naturalized in the lowlands of northern and southern Taiwan. This represents a new record not only for this species but also for the genus on this island. A taxonomic account of *O. callitrichoides* is treated in this study. A line-drawing, photographs and distribution map of this species are also provided to aid in identification.

Key words: New record, *Oldenlandiopsis callitrichoides*, Rubiaceae, Taiwan.

INTRODUCTION

After "A Checklist of the Vascular Plants of Taiwan" (Boufford et al., 2003), "A Synopsis of Taiwan Seed Plants" (Yang et al., 2008), and "Family and Genus Flora of Taiwan Seed Plants" (Yang et al., 2009) were published, six newly recorded genera were reported for the flora of Taiwan (*Ensete*: Chen et al. 2007; *Flaveria*: Tseng et al., 2008; *Melampyrum*: Chen and Wang, 2009; *Rivina*: Tseng et al., 2008; *Spartina*: Hildemar et al., 2009; *Pseudoconyza*: Jung et al., 2009). Recently *Oldenlandiopsis callitrichoides* (Griseb.) Terrell & W. H. Lewis (Hedyotideae, Rubiaceae), a tiny herbaceous plant, was found in moist urban areas of northern and southern Taiwan (Fig. 1). The genus *Oldenlandiopsis* Terell & W. H. Lewis was established in 1990 based on *Oldenlandia callitrichoides* Griseb. (Terrell and Lewis, 1990). Several morphological features serve to distinguish *Oldenlandiopsis* from related genera in the tribe *Hedyotideae*, i.e. *Hedyotis* L., *Houstonia* L. and *Oldenlandia* L. (Terrell and Lewis, 1990; Terrel and Robinson, 2007). Firstly, pollen of *Oldenlandiopsis* has 8-colporate apertures, elongate ora forming a wavy equatorial band, and thinly crassimarginate (Terrell and Lewis, 1990). Secondly, the basic chromosome number of *Oldenlandiopsis* is X = 11, whereas that of *Oldenlandia* is X = 9 (Terrell and Lewis, 1990). Thirdly, capsule of *Oldenlandiopsis* is narrowly turbinate or narrowly obconic, whereas that of *Oldenlandia* is subglobose or nearly so (Terrell and Lewis, 1990; Terrell and Robinson, 2007). Having considered relevant literature (Proctor, 1984; Terrell and Lewis, 1990; Stevens and Ulloa, 2001; USDA-NRCS, 2004; Terrell and Robinson, 2007), we adopted the generic concept of Terrell and Lewis (1990), USDA, NRCS. (2004), Terrell and Robinson (2007) and hereby report this newly naturalized species for the flora of Taiwan. A line-drawing (Fig. 2), color photos (Fig. 3) and a distribution map (Fig. 1) of *O. callitrichoides* are also provided.



Fig. 1. Distribution of *Oldenlandiopsis callitrichoides* (☆) in Taiwan.

TAXONOMIC TREATMENT

Oldenlandiopsis callitrichoides (Griseb.) Terrell & W. H. Lewis. Brittonia 42 (3): 185. 1990; Terrell and Robinson, J. Bot. Res. Inst. Texas 1(1): 373-384. 2007. – *Oldenlandia callitrichoides* Griseb., Pl. Wright. 2: 506. 1862; Stevens and Ulloa, Fl. Nicaragua 85: 2247. 2001. – *Hedyotis callitrichoides*

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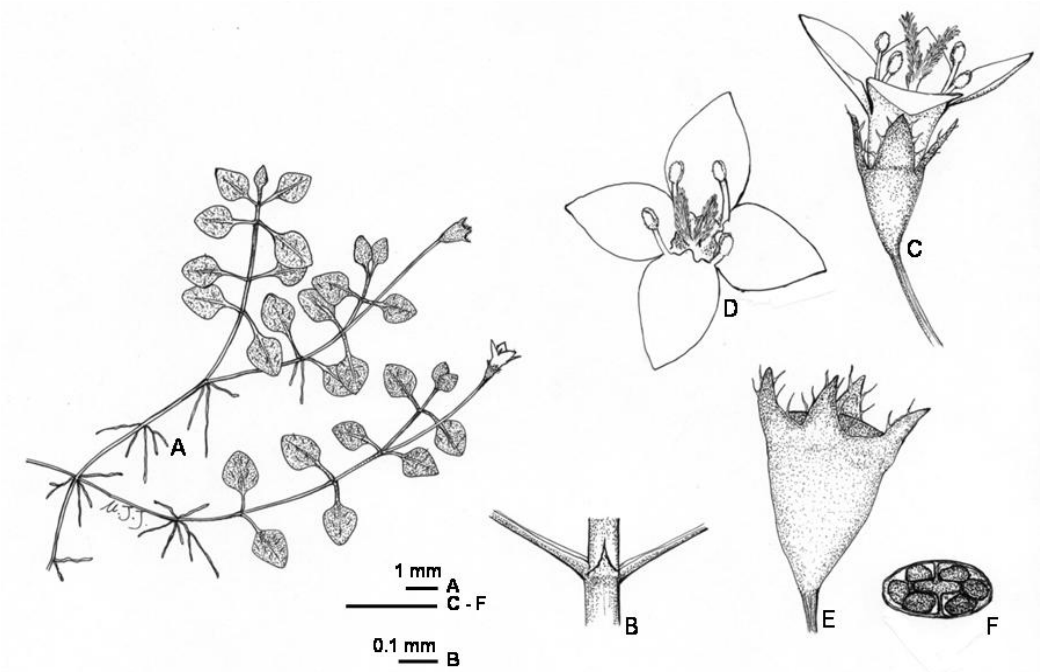


Fig. 2. *Oldenlandiopsis callitrichoides*. A: Habit. B: Stipule. C & D: Flowers, C: Lateral view. E & F: Capsules. E: Lateral view. F: Cross section, showing the axile placentation.

(Griseb.) W. H. Lewis, Rhodora 63 (752): 222. 1961; Proctor, Fl. Cayman Islands. 738-739. 1984; Evenhuis and Eldredge, Records of the Hawaii Biological Survey for 2000, part 2 (notes): 12. 2002. 匍匐微耳草 Figs. 2 & 3

Creeping annual, stems weak, branched, glabrous, rooting at basal nodes; stipules minute, narrowly deltoid, hyaline, 0.5-0.8 mm long; leaves broadly ovate, opposite, blade 1-4 mm long, 1-4 mm wide, adaxially sparsely pubescent, abaxially glabrous, apex obtuse to acute, base shallowly cordate to truncate, attenuate into a narrowly winged petiole; flowers solitary, axillary, pedicel slender, to 2 cm long, calyx cup 4-lobed, lobes oblong to deltoid-ovate, apex obtuse, 0.5-1 mm long, margin ciliate; corolla subsalverform, 1.5-3.5 mm long, 4-lobed, lobes white, ovate, apex obtuse to acute, tube 0.6-1.5 mm long, pale yellow inside, throat glabrous; stamens 4, adnate to throat between corolla lobes, exserted, filaments to 0.5 mm long, anthers ellipsoid, 0.1-0.15 mm long; pistil 1, stigma bifid, ca. 1 mm long, placentation axile; capsule depressed obovoid, 1-2 mm long, 0.5-1 mm wide, apex retuse or truncate, dehiscing loculicidally (*see* Terrell and Lewis (1990) for capsular dehiscence); seeds ca. 20-35 per capsule, depressed ellipsoid, 0.3-0.5 mm long, 0.2-0.4 mm wide.

Specimens examined: Taiwan. Taipei City, Campus of Academic Sinica, 5 Nov 2005, *C.-I Peng 20699* (HAST), Campus of National Taiwan University, 10 Jan 1992, *F. Lomer s. n.* (TAI), 9 Feb 2010, *M.-J. Jung 4725* (TNU), Campus of Taipei Botanical Garden, 8 2010, *M.-J. Jung 4725* (TNU), Campus of Taipei Botanical Garden, 8 Feb 2010, *M.-J. Jung 4724* (TNU); Kaohsiung Co., Gangshan Township, Campus of National Kangshan Agricultural and Industrial Vocational Senior High School, 13 Mar 2010, *C.-C. Huang* s. n. (TNU).

Distribution and notes: Based on Terrell and Lewis (1990) and Terrell and Robinson (2007), capsules of *O. callitrichoides* dehisce loculicidally into 4 membranous segments. However, we were unable to observe the dehiscent nature of its mature fruits in Taiwan (Fig. 2E and 3C).

Vernacular name of *Oldenlandiopsis callitrichoides* is “creeping-bluet.” This tiny plant is native to the West Indies and Central America, and has been naturalized in southern North America, northern South America, Hawaii and Africa (Terrell and Lewis, 1990; Evenhuis and Eldredge, 2002; Wagner and Herbst, 2003; USDA, NRCS., 2004; Terrell and Robinson, 2007).

In the campus of Academia Sinica, Taipei City, *O. callitrichoides* co-occurs with *Erigeron bellioides* DC. (Asteraceae), another tiny weed recently naturalized in northern Taiwan (Jung et al., 2009). Three subpopulations of *O. callitrichoides* were found in Taipei city (Fig. 1). The first collection of this species in Taiwan was made in 1992 (*see* ‘Specimens examined’). Because of its tiny and creeping habit (Figs. 2A and 3A) and being a short-lived annual, *O. callitrichoides* may be more widespread on this island than we have appreciated.

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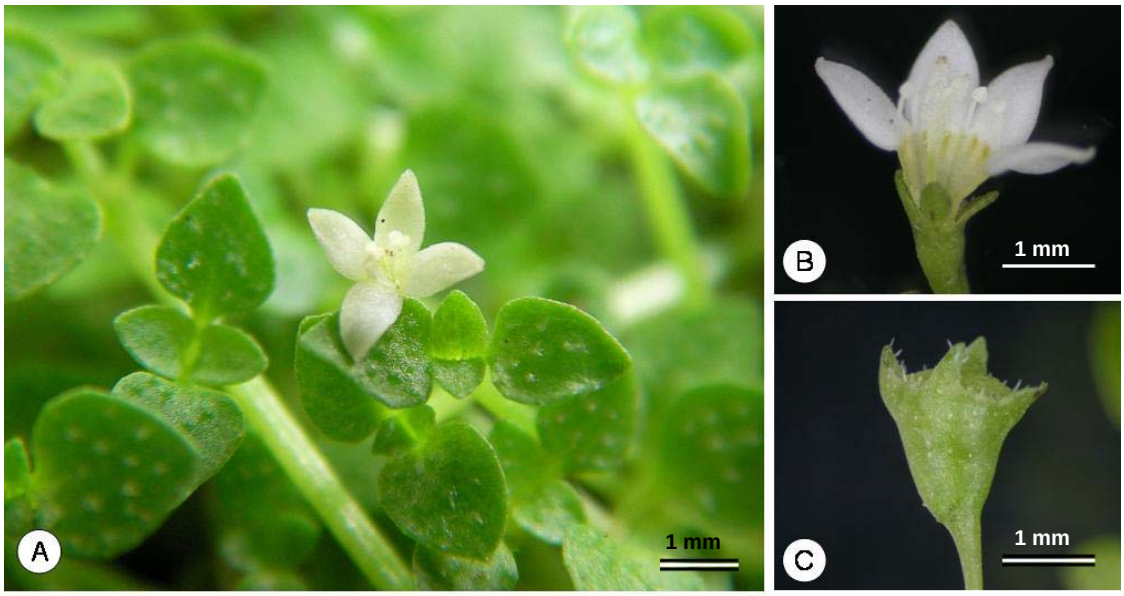


Fig. 3. *Oldenlandiopsis callitrichoides*. A: Flowering branch. B: Flower, dissected to show stamens and gynoecium. C: Capsule.

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LITERATURE CITED

Boufford, D. E., H. Ohashi, T.-C. Huang, C.-F. Hsieh, J.-L. Tsai, K.-C. Yang, C.-I. Peng, C.-S. Kuoh and A. Hsiao 2003. A Checklist of the Vascular Plants of Taiwan. In: Huang, T.-C. et al. (eds.). Flora of Taiwan, 2nd ed., **6**: 15-139. Editorial Committee, Dept. Bot., NTU, Taipei, Taiwan.

Chen, J.-H., C.-L. Yeh, S.-Y. Lee, C.-R. Yeh, T.-H. Chiu, and Y.-Y. Su. 2007. *Ensete glaucum* (Roxb.) Cheesm. (Musaceae), a newly recorded species and its genus in Southern Taiwan. Bulletin of the Experimental Forest of National Chung Hsing University **29**: 13-20. (in Chinese)

Chen, C.-H. and C.-M. Wang. 2009. *Melampyrum roseum* Maxim. (Scrophulariaceae), a newly recorded genus in Taiwan. Taiwania **54** : 183-186.

Evenhuis, N. L. and L. G. Eldredge. 2002. Records of the Hawaii Biological survey for 2000, part 2: notes. Bishop Museum, The State Museum of Natural and Cultural history, Honolulu, Hawaii, USA. 55pp.

Hildemar, S., C.-W. Chen, and M.-J. Jung. 2009. Supplements to the grasses (Poaceae) in Taiwan (II). Taiwania **54**: 168-174.

Jung, M.-J., T.-C. Hsu and S.-W. Chung. 2009. *Pseudoconyza* Cuatrec. (Asteraceae), a newly recorded genus for the Flora of Taiwan. Taiwania **54**: 261-265.

Jung, M.-J., T.-C. Hsu, S.-W. Chung, and C.-I Peng. 2009. Three newly naturalized Asteraceae plants in Taiwan. Taiwania **54**: 76-81.

Proctor, G. R. 1984. Rubiaceae. Fl. Cayman Islands. Her Majesty's Stationery Office, London, UK. pp. 720-743. **Stevens, W. D. and C. U. Ulloa.** 2001. Rubiaceae. In: Hollowell, V. C. et al. Fl. Nicaragua 85. Missouri Botanical Garden Press, St. Louis, USA. pp. 2206-2284.

Terrell, E. E. and W. H. Lewis. 1990. *Oldenlandiopsis* (Rubiaceae), a new genus from the Caribbean Basin, based on *Oldenlandia callitrichoides* Grisebach. Brittonia **42**: 185-190.

Terrell, E. E. and H. Robinson. 2007. Seed and capsule morphology in six genera of Hedyotideae (Rubiaceae): *Thecagonum*, *Neanotis*, *Dentella*, *Kohautia*, *Pentodon*, and *Oldenlandiopsis*. J. Bot. Res. Inst. Texas **1**: 373-384.

Tseng, Y.-H., C.-C. Wang and Y.-T. Chen. 2008. *Rivina humilis* L. (Phytolaccaceae), a newly naturalized plant in Taiwan. Taiwania **53**: 417-419.

Tseng, Y.-H., C.-Y. Liou, H.-F. Yen, and C.-I Peng. 2008. *Flaveria bidentis* (L.) Kuntze (Asteraceae), a newly naturalized plant in Taiwan. Quart. J. Forest Res. **30**: 23-28.

USDA, NRCS. 2004. The PLANTS Database, Version 3.5 (http://plants.usda.gov/java/profile?symbol=LAPU2). National Plant Data Center, Baton Rouge, LA, USA.

Wagner, W. L. and D. R. Herbst. 2003. Supplement to the Manual of the Flowering Plants of Hawaii. Manual of the Flowering Plants of Hawaii. University of Hawaii Press, Hawaii, USA. 77 pp.

Yang, Y.-P., C.-K. Liao, M. Tang, and C.-K. Yang. 2008. A Synopsis of Taiwan Seed Plants. The Forestry Bureau, Council of Agriculture, Executive Yuan, Taipei, Taiwan. 278 pp.

Yang, Y.-P., C.-K. Liao, M. Tang, C.-K. Yang, and C.-Y. Yeh. 2009. Family and genus Flora of Taiwan seed plants. The Forestry Bureau, Council of Agriculture, Executive Yuan, Taipei, Taiwan. 231pp.

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微耳草屬(*Oldenlandiopsis* Terell & W. H. Lewis)：臺灣茜草科新紀錄屬

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摘要：本文報導一新紀錄於臺灣北部及南部平地的新紀錄屬茜草科植物：匍匐微耳草(*Oldenlandiopsis callitrichoides* (Griseb.) Terrell & W. H. Lewis)，本文描述此一新紀錄歸化植物，並提供線描圖、照片及分布圖以利鑑定。

關鑑詞：新紀錄、匍匐微耳草、茜草科、臺灣。

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