

# New records of *Ipomoea* species (*Convolvulaceae*) for the flora of Egypt

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**Abstract.** *Ipomoea triloba* and *I. wrightii* (*Convolvulaceae*) have been set as new records for the Nile Delta of Egypt. These species belong to genus *Ipomoea*, which is considered a weed in Egypt. A concise description, phenology and ecological observations of the newly recorded taxa have been provided, along with photographs.

**Key words:** Egypt, *Ipomoea triloba*, *Ipomoea wrightii*, the Nile Delta.

## Introduction

*Convolvulaceae* is represented in Egypt by ten genera. *Convolvulus*, *Ipomoea* and *Cuscuta* are the largest genera, to which genus *Ipomoea* L. contributes about 650 species (Mabberley 2008) distributed across the tropical and warm temperate regions of the world. In Egypt, *Ipomoea* is represented by nine species and two subspecies viz.: *I. pes-carpae* (L.) R.Br. subsp. *braseliensis* (L.) Ooststr., *I. obscura* (L.) Ker Gawl., *I. sinensis* (Desr.) Choisy subsp. *blepharosepala* (A.Rich.) A. Meeuse, *I. hederacea* Jacq., *I. stolonifera* (Cyr.) J.F. Gmel., *I. erio-carpa* R.Br. *I. purpurea* (L.) Roth, *I. cairica* (L.) Sweet, and *I. carnea* Jacq. (Boulos 2000, 2009). The aim of this study is to report for the first time the occurrence of *Ipomoea wrightii* and *I. triloba* in the flora of Egypt.

## Material and methods

Field trips in different parts of the Nile Delta of Egypt have been made in 2012–2017. A number of *Ipomoea* specimens were collected and checked first in the local flora for their presence in Egypt (Ascherson & Schweinfurth 1887, 1889; Muschler 1912; Täckholm 1956; 1974 and Boulos 2000), then stored in the Cairo University

Herbarium (CAI). Specimens which are not recorded from Egypt were checked using the regional floras (Boisier 1875; Feinbrun-Dothan 1978; Paris 1978; Mekile 1985), and were further identified by relevant literature on the genus *Ipomoea* (Baker & Rendle 1906; Verdcourt 1963 and Wood & al. 2015). The global distribution of the new records was checked on the Euro+Med Plant-Base website (Raab-Straube 2018; www.tropicos.org.). Taxonomic description, ecological observations, phenology, and a distribution map are provided.

## Results and discussion

After the laboratory studies and literature survey in this study, the results revealed a strong evidence that *Ipomoea wrightii* A. Gray and *I. triloba* L. are new records for the weed flora of Egypt.

***Ipomoea wrightii*** A. Gray, Syn. Fl. N. Amer. 2 (1): 213 (1878)

**Type:** United States, 1860; C. Wright, s.n. (**Holotype**; GH).

Annual twining herb, stem circular, glabrous. Leaves alternate, exstipulate, petiolate; lamina divided into 5-separate leaflets, leaflet linear-lanceolate, 25–60 × 4–8 mm, glabrous, attenuated at base and acuminate at

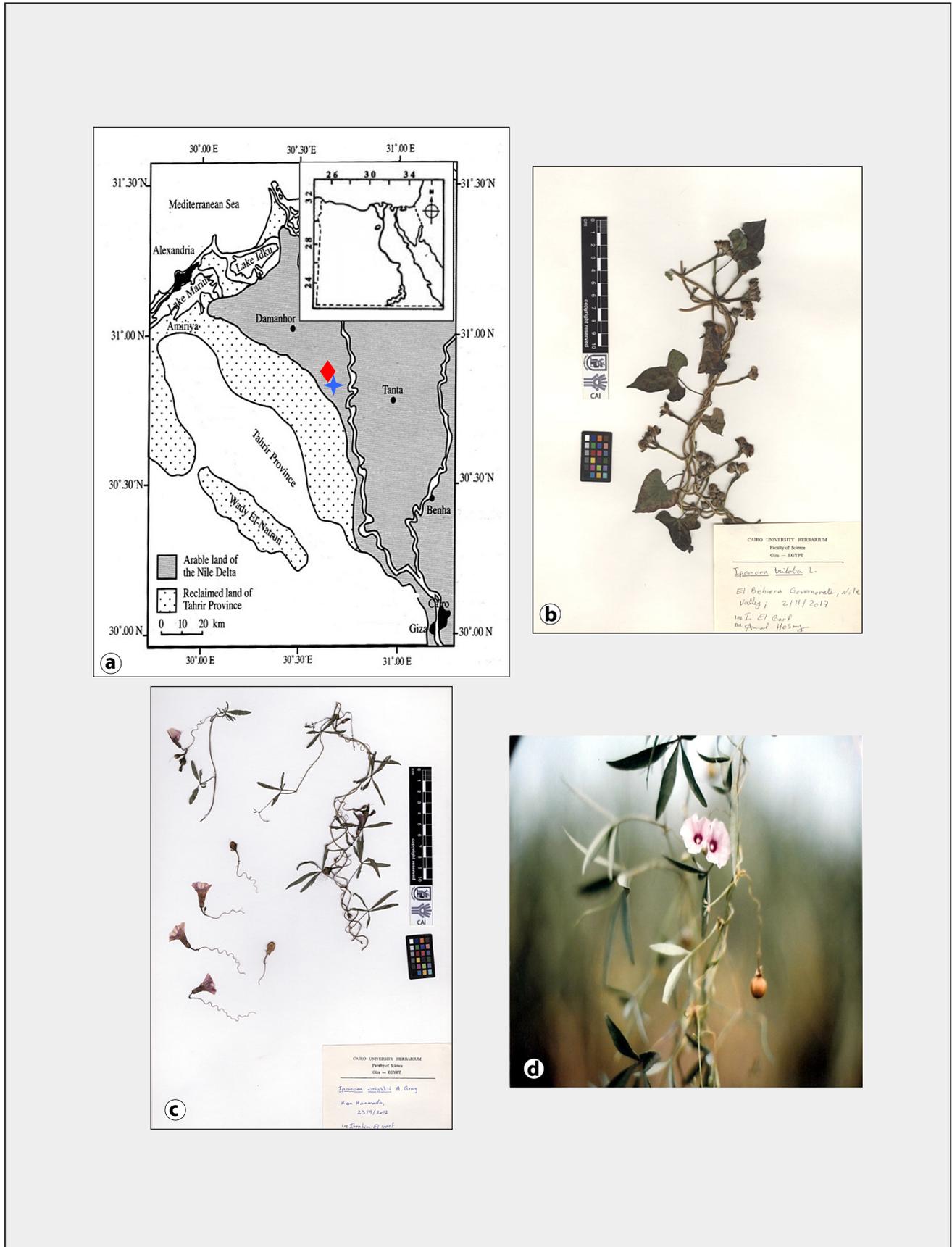


Fig. 1. (a) Map to show distribution of *Ipomoea triloba* ★ and *I. wrightii* ◆ in Egypt; (b) *I. triloba*; (c, d) *I. wrightii*.

apex. Petiole 20–50 mm long, glabrous. Flowers solitary, occasionally 2–3, axillary, pedunculate; peduncle coiled and slender, 40–70 mm long, glabrous. Bracteoles two, subulate, up to 2 mm long. Pedicel angular, 5–7 mm long, stout. Sepals unequal, scarious margin, 2-outer sepals ovate, 3.5–4 × 2.5 mm, with glandular dots and a mucronate apex, inner sepals broadly oblong 4–5 × 2.5–3 mm, glabrous, with obtuse apex. Corolla pink, funnel-shaped, 20–25 mm long, glabrous. Capsule ovoid, 9–10 × 8 mm, glabrous, 4-seeded; seeds ovoid, with two flat ventral faces and one convex dorsal face, 5–6 × 4–4.5 mm, blackish-brown, tomentose, seed-testa obscure; hilum rounded, ±sunken, sublateral. (Fig. 1c, d)

**Phenology:** Field study showed that the flowering and fruiting period extended from July to October.

**Habitat:** The herb grows on alluvial, damp or silty wet soil, in dappled sun or deep shade. It is observed as weed in fields of sugar cane (*Saccharum officinarum*), where the soil is always wet, shaded and the crop remains on the land for several years. Probably widespread.

**Distribution:** known from Tropical America, Africa to India (Wood & al. 2015 and www.tropicos.org), it has not been reported yet in the Mediterranean and Europe, except for from Belgium (Raab-Straube 2018). In Egypt, it was recorded in the Nile Delta as an alien species (Fig. 1a).

**Specimens examined:** (Nv) Kom Hammada, Nile Delta, 30.76°N 30.70°E 23/9/2012; I. El-Garf s.n. (CAI); Kom Hammada, Nile Delta, 12/8/2015; I. El Garf s.n. (CAI).

***Ipomoea triloba* L., Sp. Pl. 1: 161 (1753)**

**Type:** specimen No. 192/10; (**Holotype;** LINN.)

Annual twining herb, stem ±circular, glabrous to sparsely hairy above. Leaves alternate, exstipulate, petiolate; lamina cordate, occasionally tri-lobed, 40–60 mm long, glabrous, apex acuminate. Petiole 30–40 mm long, glabrous. Inflorescence axillary, (1-)5-several flowered in umbellately cymes; peduncle straight and stout, 30–50 mm long, glabrous. Bracteoles two, minute, subulate, up to 1 mm long. Pedicel circular, 2–3 mm long, glabrous. Sepals sub-equal, oblanceolate to oblong, 6–8 × 2.5 mm, puberulent, apex sharply acuminate. Corolla pink to pale-purple, funnel-shaped, 15–20 mm long, glabrous. Capsule depressed globose, 7–8 × 6–8 mm, apiculate, glabrous, 4-seeded; seeds ovoid with two

flat ventral faces and one convex dorsal face, 5–6 × 4–4.5 mm, blackish, glabrous, seed-testa smooth; hilum rounded, ±sunken, sublateral. (Fig. 1b).

**Phenology:** Flowering and fruiting period in Egypt: July – November.

**Habitat:** A common twinner along canal banks associated with *Phragmites australis*, which may be an indicator of a previously swampy habitat. It is also observed as an aggressive weed in cotton (*Gossypium barbadense*), maize (*Zea mays*) and sugar cane (*Saccharum officinarum*) fields. So far it has been collected from El Behiera Province but is widely distributed in the Nile Delta and adjacent regions where it is recorded as an alien species (personal observations).

**Distribution:** Native of Tropical America and naturalized across the tropics, it was introduced from the east and southeast United States to India (Sourav 2016 and Das 2017). It has not been reported from the Mediterranean and Europe except from Spain, (Raab-Straube 2018). In Egypt, it is known from the Nile Delta (Fig. 1a).

**Specimens examined:** (Nd) El Behiera Governorate, Nile Delta, 5/11/2017; I. El Garf; s.n. (CAI).

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## References

- Ascherson, P. & Schweinfurth, G. 1887. Illustration De la Flore D’Egypté. Mem.Inst. Egypte, 2:107-108.
- Ascherson, P. & Schweinfurth, G. 1889. Supplement A L’ Illustration De la Flore D’Egypté. Mem.Inst. Egypte, 2:768.
- Baker, J.G. & Rendle, A.B. 1906. *Convolvulaceae*. – In: Dyer & al. (eds.), Flora of Tropical Africa, Vol. 5, section 2. – L. Reeve & Co., LTD.
- Boissier, E. 1875. Flora Orientalis, Vol. IV. Genevae.
- Boulos, L. 2000. Flora of Egypt, Vol. 2, Al Hadara Publ. Cairo.
- Boulos, L. 2009. Checklist of the Flora of Egypt, revised and annotated edition. Al Hadara Publ. Cairo.
- Das, K.K. 2017. *Ipomoea triloba* L. (*Convolvulaceae*): a new record for the flora of Assam, India, East Himalayan Society for Spermatophyte. – Taxonomy, 11(1):159-162.
- Feinbrun-Dothan, N. 1978. Flora Palaestina 3. The Israel Academy of Science and Humanities. Jerusalem.

- Mabberley, D.J.** 2008. *Mabberley's Plant Book. A Portable Dictionary of Plants, their Classification and Uses*, 3<sup>rd</sup> ed., Cambridge Univ. Press. Cambridge.
- Mekile, R.D.** 1985. *Flora of Cyprus*, v.2, Royal Botanic Gardens, Kew.
- Muschler, M.R.** 1912. *A Manual Flora of Egypt*, Vol. II, R. Friedlaender & Sohn, Berlin.
- Paris, P.S.** 1978. *Convolvulaceae*. – In: **Davis, P.H.** (ed.) *Flora of Turkey & the east Aegean Island*, Vol. 6. Edinburgh Univ. Press, Edinburgh.
- Raab-Straube, E. von.** 2018. *Convolvulaceae*. – In: Euro+Med Plantbase – the information resource for Euro-Mediterranean plant diversity. <http://ww2.bgbm.org/Euro PlusMed/>
- Sourav, M.S.H.** 2016. *Ipomoea triloba* L. (*Convolvulaceae*): A new angiosperm record for the flora of Bangladesh. – *Tropical Plant Research*, 3(1):102-104.
- Täckholm, V.** 1956. *Students' Flora of Egypt*. Anglo-Egyptian Bookshop, Cairo.
- Täckholm, V.** 1974. *Students' Flora of Egypt*. 2<sup>nd</sup> ed. Cairo Univ. Press, Cairo.
- Verdcourt, B.** 1963. *Convolvulaceae*. – In: **Hubbard, C.E. & Milne-Redhead, D.E.** (eds) *Flora of Tropical East Africa*. London.
- Wood, J.R. Carine, M.A.; Harris, D.; Wilkin, P.; Williams, B. & Scotland, R.W.** 2015. *Ipomoea* (*Convolvulaceae*) in Bolivia. *Kew Bulletin*, 70(3):1-124 [www.tropicos.org](http://www.tropicos.org)
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