PHYLLANTHUS DEBILIS (PHYLLANTHACEAE) NEWLY REPORTED FOR NORTH AMERICA

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ABSTRACT

Herein, *Phyllanthus debilis* J.G. Klein ex Willd. (Phyllanthaceae), a species apparently native to the Indian subcontinent, is newly reported for North America. The present report brings to 17 the number of *Phyllanthus* species known from North America north of Mexico.

RESUMEN

Phyllanthus debilis J.G. Klein ex Willd. (Phyllanthaceae), una especie aparentemente nativa del subcontinente Indio, se cita como nueva para Norte América. La cita presente eleva a 17 en número de especies de *Phyllanthus* conocidas de Norte América al norte de México.

RESULTS AND DISCUSSION

While conducting a floristic inventory of Corkscrew Swamp Sanctuary (CSS), Collier Co. and Lee Co., Florida, U.S.A. (Fig. 1), George Wilder, Jean McCollom, and Myron Barefoot collected specimens of an annual species of *Phyllanthus* (Wilder & McCollom 2018 [see p. 265 within the current issue of this journal]). Wilder initially identified them as *Phyllanthus fraternus* G.L. Webster, a species introduced in the southeastern United States (Levin 2016), using Wunderlin and Hansen (2011); he also consulted Wunderlin et al. (2017). Uncertainty about the determination prompted him to consult Alan Franck at the University of South Florida, who also questioned the determination and contacted the senior author for input. Levin examined *Wilder and McCollom 39229* and also keyed it to *P. fraternus*, using Levin (2016), although with reservations. Because the specimen deviated in significant ways from the key and description there, he consulted other literature, especially Webster (1956–1958). After consulting Webster's key to species in section *Phyllanthus* (vol. 38, p. 297), it became clear that the specimen represented *Phyllanthus debilis* J.G. Klein ex Willd. (Fig. 2). This is the first report of that species from North America, and brings to 17 the number of *Phyllanthus* species reported from North America north of Mexico.

Both *P. debilis* and *P. fraternus* are members of *Phyllanthus* sect. *Phyllanthus* subsect. *Swartziani* G.L. Webster and, apparently, are native to the Indian subcontinent but widely introduced (Webster 1956–1958). Two other members of this subsect., *P. abnormis* Baill. and *P. amarus* Schumach. & Thonn., are native to the United States, including Florida. The four species can be distinguished using the following key, modified from Levin (2016) and Webster (1956–1958).

J. Bot. Res. Inst. Texas 12(1): 245 – 248. 2018

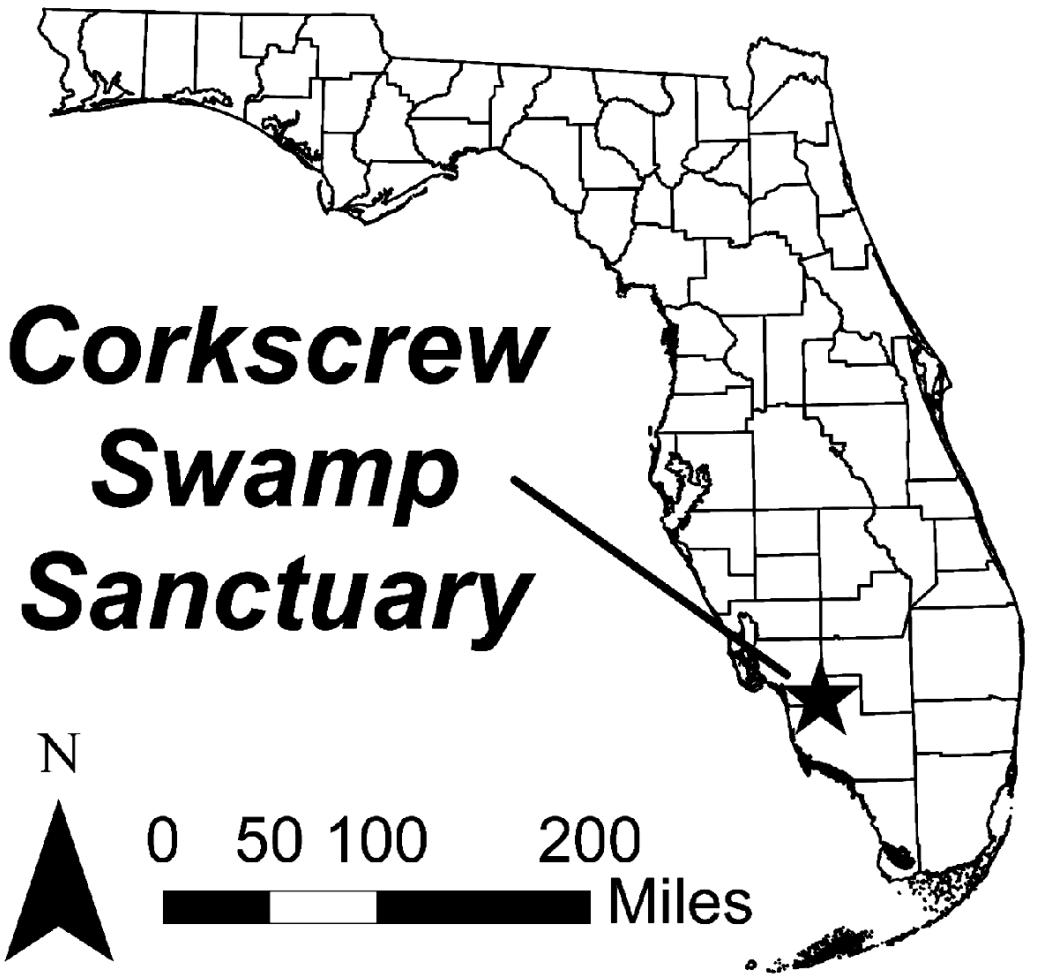

Fig. 1. A county map of Florida. The star signifies the location of Corkscrew Swamp Sanctuary.

1. Distal inflorescences of solitary pistillate flowers.
   2. Pistillate nectaries subentire; styles ± appressed; ultimate branchlets smooth or essentially so; main stems not conspicuously angled; leaf apices acute to narrowly obtuse ____ **P. debilis**
   2. Pistillate nectaries deeply 6–9-lobed; styles ascending to erect; ultimate branchlets scabridulous; stems usually angled; leaf apices rounded ____ **P. fraternus**
1. Distal inflorescences of 1 pistillate flower and 1–3 staminate flowers.
   3. Pistillate nectaries annular, 5–7-lobed; staminate sepals 5(–6); capsules 1.9–2.1 mm diam.; seeds 0.9–1 mm ____ **P. amarus**
   3. Pistillate nectaries 3 glands; staminate sepals 5–6 in flowers of basal cymules, 4 in flowers of distal cymules; capsules 2.3–2.7 mm diam.; seeds 1.1–1.5 mm ____ **P. abnormis**

In addition, in *P. debilis* the leaf veins tend to be more obscure than those in *P. fraternus*. In both of those species the staminate and pistillate flowers usually have six sepals, whereas in *P. amarus* they usually have five sepals; in *P. abnormis*, the pistillate flowers have five or six sepals, while the staminate flowers have four to six sepals as described in the key.

Phyllanthus debilis has not been reported previously from the continental United States (John Kartesz, pers. comm. to George Wilder, 4 Oct 2017; Kartesz 2017; Levin 2016; USDA 2017; NRCS 2017). We have been

Fig. 2. Photograph of *Phyllanthus debilis,* taken from *Wilder and McCollom 39225* (SWF).

unable to find records from Mexico. The species is previously known from the Caribbean islands (Puerto Rico, the Lesser Antilles, and Trinidad and Tobago; Acevedo & Strong 2012; Baksh-Comeau et al. 2016). It is also introduced in southeast and eastern Asia, many Pacific islands (including Hawaii), Australia, and Brazil (WCSP 2017). How and when it was introduced into Florida are unknown.

Wilder and colleagues made 10 collections of *P. debilis*, all from the same population centered at 26°25'15.24"N and 81°39'29.34"W within Panther Island Mitigation Bank at CSS. That population, limited to ca. one acre, likely consisted of hundreds of individuals and occupied open ruderal land, pine flatwoods, and ecotone between those habitats. No other population of *P. debilis* was encountered. The specimens are cited below.

UNITED STATES. FLORIDA. Collier Co.: Corkscrew Swamp Sanctuary, Panther Island Mitigation Bank, 8 Dec 2015, *Wilder and Barefoot 38154* (SWF); 15 Dec 2015, *Wilder 38378* (SWF), *38379* (SWF), *38380* (SWF); 8 Sep 2016, *Wilder and McCollom 39225* (SWF), *39226* (SWF), *39227* (SWF), *39228* (SWF), *39229* (USF), *39230* (SWF).

Phyllanthus debilis is the second alien *Phyllanthus* species reported from the United States and from Florida in the last seven years. The last was the floating aquatic *P. fluitans* Benth. ex Müll. Arg. (Wilder & Sowinski 2010). Because so many species of the genus are weedy, it is likely that more will be encountered.

ACKNOWLEDGMENTS

We thank Brian Holley and Donna McGinnis (the former and present Directors of the Naples Botanical Garden [NBG], respectively) and NBG for providing laboratory space for the present study and for housing the SWF Herbarium. We extend appreciation to Jason Lauritsen (the Director of CSS) and to Allyson Webb (the Resource Manager of CSS) for facilitating Wilder and McCollom's work there. Alan Franck of the USF Herbarium was instrumental in confirming Wilder's concern about his identification of the specimens, engaging Levin in the discussion and sending him a specimen to examine. John Kartesz provided insight into the geographic distribution of *P. debilis*. Comments by Paul Berry and Ben van Ee improved the manuscript. Renee Waller of NBG prepared the photograph of the herbarium specimen in Figure 2.

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