

# *Phyllanthus urinaria* (Phyllanthaceae), first record of an alien species naturalized in Cuba

## *Phyllanthus urinaria* (Phyllanthaceae), primer registro de una especie exótica naturalizada en Cuba

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*Phyllanthus urinaria* L. is an annual herbaceous plant widely distributed in the tropics that belongs to *Phyllanthus* section *Urinaria* G.L. Webster (ca. four species) in subgenus *Phyllanthus* (Webster 1957, Rossignol & al., 1987). The species of this Asiatic section has been introduced and naturalized in Mexico, Central America, the Caribbean, South America, tropical Africa, and Australia (Rossignol & al., 1987). Due to its different inflorescence and seed structure, the section *Urinaria* is isolated within the subgenus *Phyllanthus* (Webster 1957). The detailed study of Rossignol & al. (1987), concluded that the Linnaean species *Phyllanthus urinaria* is a polyploid complex, and proposed several segregate species based on seed morphology and ploidy level.

*Phyllanthus urinaria* has leaves with marginal hispid trichomes, a crenulate pistillate disk, a rugulose or bullate ovary, and transversely ribbed seeds. The hispidulous leaves and transversely ribbed seeds are missing characters in similar native species from the West Indies like *P. stipulatus* (Raf.) G.L. Webster, *P. fraternus* G.L. Webster and *P. amarus* Schumacher & Thonn. (Webster 1957). The species is typically found in humid forest boundaries and littoral forests (Silva & Sales 2007). It is considered one of the most shade tolerant of the herbaceous species of the genus (Webster 1957). Furthermore, it exhibits the sensitive reaction of the plagiotropic branchlets to touch due to nyctinastic movement in a similar way to *Mimosa pudica* L. leaflets, but much slower (Webster, 1957). This superficial similarity to *Mimosa pudica* (Fabaceae-Mimosoideae) could have contributed to the misidentification of the species in Cuba or to a less interest to be collected in the island (Figure 1A).

In the broad studies of Webster on the genus *Phyllanthus* for the Neotropics it is reported that *P. urinaria* was introduced in scattered localities throughout the tropics, and there were no encountered collections before 1850 for the West Indies (Webster 1957). In subsequent studies the species was reported to Puerto Rico (Liogier 1963),

Jamaica (Adams 1972), Hispaniola (Liogier 1986), and Lesser Antilles (Howard 1989), but it had never been reported to Cuba, despite being this the largest island in the Caribbean.

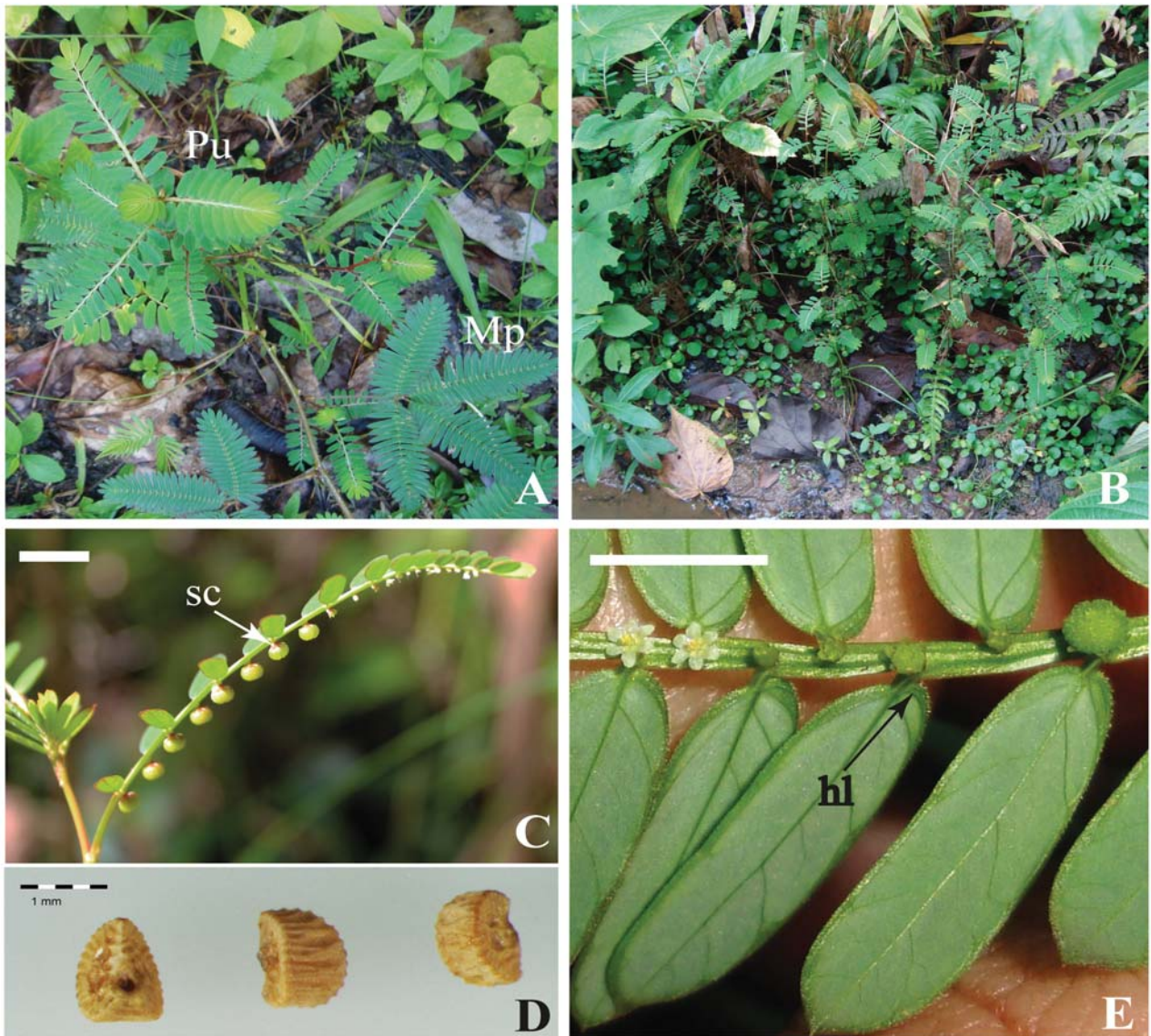
During recent field work for the new flora of the Republic of Cuba *Phyllanthus urinaria* was collected in three different localities, both in semi-disturbed areas. The first population was collected in May 2012, in a mesophyllous evergreen forest at "El Salón", Sierra del Rosario, Artemisa province. The population was found at the forest boundaries, growing in wet soil where water had accumulated and run (Figure 1B). The second population was located in the Banao hills, Sancti Spíritus province, in August of 2013 occurring in the border of river Higuanojo and in April 2015, was discovered a third population in a degraded rainforest on the edge of the river Arroyo Bueno, La Melba, Moa in Holguín province. All populations were found at similar elevations (above 550 m), and growing under similar ecological conditions close to rural areas. The identity of the plants has been determined by us as *P. urinaria*, based on the presence of the tuberculate ovary, subsessile fruiting calyces, transversely ribbed seeds, and hispidulous leaves (Figure 1C, D and E).

Specimens examined: CUBA. Artemisa: "Sierra del Rosario, El Salón", mesophyll evergreen forest, 22°45'N, 82°50'W, elev. 565 m, 19–20 May 2012, B. Falcón HFC 87582 (HAJB); S. Spíritus: "Reserva Ecológica Lomas de Banao. Hoyo del Naranja. Orillas del río Higuanojo", 24 August 2013, E.R. Bécquer, A. Palmarola, L. Granado, E. Testé & O. Valle HFC 87916 (HAJB); Holguín: "Moa, La Melba, borde de Arroyo Bueno", degraded rainforest, 20°26'34,8"N, 74°48'50,4"W, elev. 600 m, 16 April 2015, S. Fuentes 1369, J. Gutiérrez, S. Bollendorff, P.A. González & B. Falcón (HAJB, B) (Figure 2).

These are the first records of *P. urinaria* to Cuba, the only species of *Phyllanthus* sect. *Urinaria* reported for this island. For a complete description and taxonomic treatment of this species see Webster (1957).

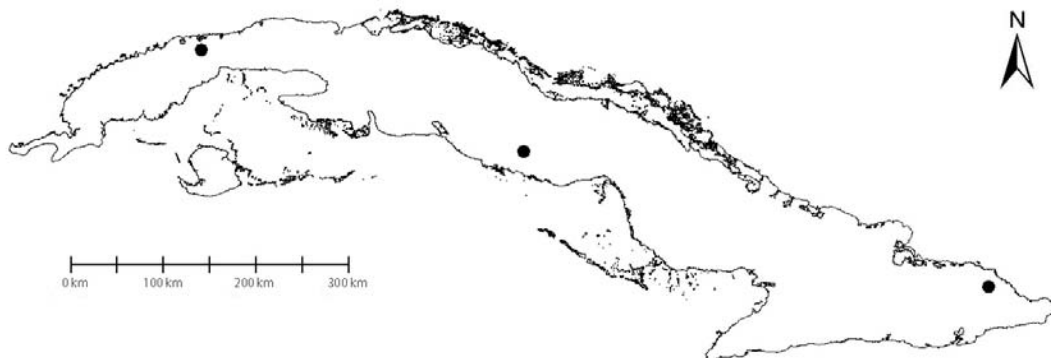
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**Fig. 1.** A. *Phyllanthus urinaria* (Pu) near to *Mimosa pudica* (Mp). B. Habitat of *Phyllanthus urinaria* characteristic for the presence of wet soils along the rivers. C. Branch with fruits (sc: subsessile fruiting calyxes) (white line =1cm). D. Transversely ribbed seeds. E. Hispidulous leaves (hl) (white line = 1cm).

**Fig. 1.** A. *Phyllanthus urinaria* (Pu) cerca de *Mimosa pudica* (Mp). B: Hábitat de P. urinaria. C. Rama con frutos (sc: cáliz del fruto subsésil) (línea blanca = 1 cm). D. Semillas con líneas transversales. E. hojas con tricomas cortos (hl) (línea blanca = 1 cm).



**Fig. 2.** Localities where *Phyllanthus urinaria* has been collected in Cuba.

**Fig. 2.** Localidades donde ha sido recolectado *Phyllanthus urinaria* en Cuba.

## ACKNOWLEDGMENTS

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