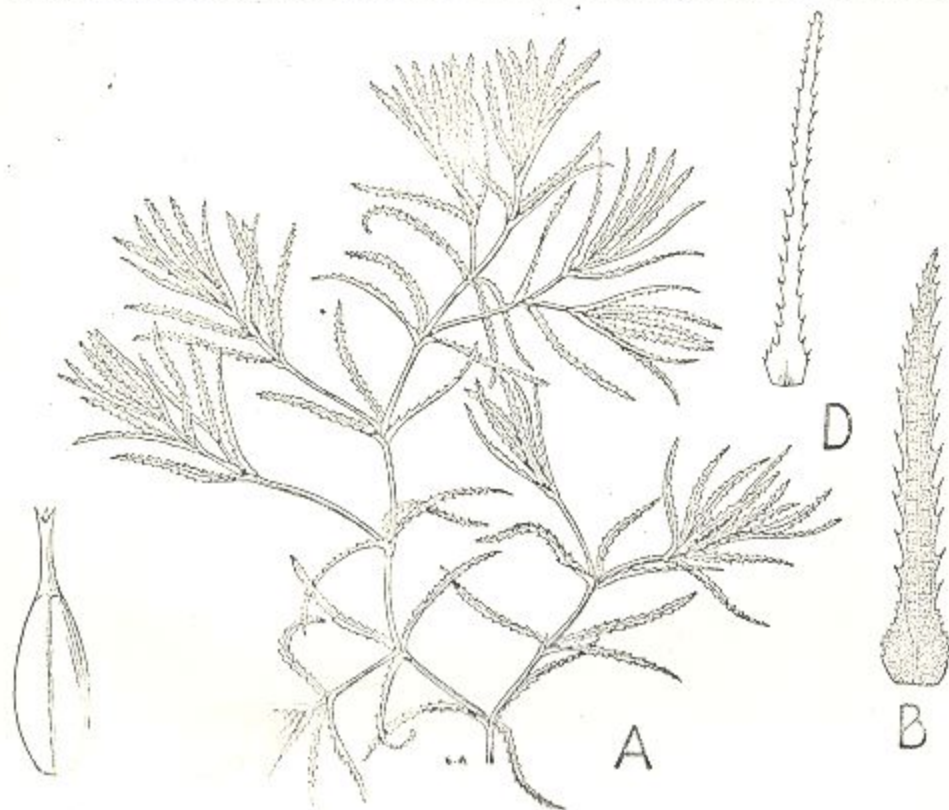


NAJAS ARGUTA IN CENTRAL AMERICA AND ITS  
RELATIONSHIP TO N. WRIGHTIANA

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Humboldt, Bonpland and Kunth (Nov. Gen. & Sp. Plant. 1: 298. 1815) described *Najas arguta* from Mompos in the drainage of the Magdalena River in Colombia, South America. In their description, they mentioned that



from Chagres River at Las Guacuas, Panama (×2.5). FIG. C. Staminate flower of the same sp., *Wrightiana* from Cuba (×2.5). FIGS. D. (×2.5). Drawn by Florence McKeel.

STRAUCH, *Bot. Beecheyana*, 1: 106 (1846).  
 CLAUSEN, *Ann. Bot. Soc. London*, 63: 106 (1936).  
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River in 1851 by Richard Spruce, no. 1622. This collection was cited by Schumann and agrees with the description of *N. arguta*. Also I have seen similar specimens from La Paila, Colombia, and others differing only in having narrower leaves, 0.6–0.8 mm. wide, from the Guayaquil River in Ecuador, W. Jameson 544. Specimens from Cuba identified as *N. arguta* are not that species. On the other hand, two collections from Panama are the same as South American *N. arguta* and constitute the northernmost and only known records for the species in Central America. F. C. Bishop collected it in Gatun Lake near the mouth of Gatun River, opposite Monte Lirio, on May 3, 1934. Lt. Harold Trapido, on April 5, 1945, collected, as no. B1021, many plants with staminate flowers in a backwater of the Chagres River at the mouth of the Rio Moja Polla near Las Guacas. According to Lt. Trapido, *N. arguta* is a dominant feature of the aquatic flora of the Chagres River and Gatun Lake; also it is the principal breeding place of *Anopheles albimanus*. Figures A–C, prepared from Trapido's collection, show some of the features of *N. arguta*. The stems are slender and the leaves 0.8–1 mm. wide, rarely less, with the teeth of the margins prominent, but shorter than the width of the blade from the base of the teeth on one side to the base of those on the other. The seeds of South American specimens are 2.5 mm. long.

The common *N. guadalupensis* (Spreng.) Magnus, which is widespread in tropical America, and extends northwards to the bays of the lower Great Lakes and Lake Champlain, is readily separated from *N. arguta* by its almost entire, very finely serrulate leaves and usually smaller seeds, 1–2.2 mm. long. *N. Wrightiana* A. Br. is less easy to distinguish, though the separation can be made as shown by the following key:

- |   |                      |
|---|----------------------|
| A. Seeds 2.5 mm. long; teeth of leaves much shorter than the width of the leaf          | <i>N. arguta</i> .   |
| AA. Seeds 1–1.4 mm. long; teeth of the leaves almost as long as the width of the leaves | <i>N. Wrightiana</i> |

*N. Wrightiana* is known from Cuba, the coastal plain of Mexico north of the Isthmus of Tehuantepec, and the Yucatan Peninsula. Also it has been cited from South America, from Pernambuco in Brazil, but I have not seen specimens from there. The Yucatan population may be separated from that of Cuba and the Mexican coastal plain as a subspecies, though the differences are of a sort that indicate close relationship. The seeds of the two populations are similar, but the leaves differ primarily in the number of teeth along the margins and in width.

*N. Wrightiana* A. Br. subsp. *Wrightiana* (R. Br.) R. T. Clausen, comb. nov., based on *N. Wrightiana* A. Br., Sitzb. Ges. Naturf. Fr. Berl. p. 17 (1868). The distributional area of subsp. *Wrightiana*, as understood by me, is Cuba and the coastal plain of Mexico near Vera Cruz. A typical leaf from Cuba is shown in figure D.

*N. Wrightiana* A. Br. subsp. *multidentata* (Koch.) R. T. Clausen, comb. nov., based on *Najas multidentata* Koch, Ber. Schweiz. Bot. Gesell. 44: 341 (1935). The type locality is "Forest Home," Punta Gorda, British Honduras, at an altitude of 61 m. The type, W. A. Schipp 991, is in the Herbarium Delessert, Conservatoire Botanique de Genève. Isotypes are available in the herbarium at the New York Botanical Garden and at the University of Michigan. Other specimens of this subspecies have been collected at Uxmal, Yucatan, and Lake Peten in the Department of Peten, Guatemala. Plants from Lake Yaxha, Dept. of Peten, are more like subsp. *Wrightiana* and must be regarded as intermediate.

KEY TO THE SUBSPECIES OF NAJAS WRIGHTIANA

- A. Leaves with 15-25 teeth on a margin, 0.4-0.6 mm. in width. *N. Wrightiana* subsp. *Wrightiana*.  
AA. Leaves with 25-40 teeth on a margin, 0.5-0.9 mm. in width. *N. Wrightiana* subsp. *multidentata*.

I wish to express appreciation to Brother León of Havana, Cuba, for the loan of a valuable series of specimens of *Najas* from the Herbarium Savalle, Academia de Ciencias de la Habana, and from the Herbario del Colegio de La Salle, Vedado-Habana. This material has greatly aided my studies.

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