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*Boerhaavia diffusa* L. (*B. coccinea* Mill.)  
(Nyctaginaceae) in the Carolinas  
RICHARD D. PORCHER

ABSTRACT

Two relatively recent field collections from Wilmington, N.C., and Charleston, S.C., indicate that *Boerhaavia diffusa* L. (Nyctaginaceae) is established in the Carolinas. A review of the literature also indicates that the commonly used taxon, *B. coccinea* Mill., is a synonym and should be discarded in favor of *B. diffusa* L.

*Boerhaavia diffusa* L., Scarlet Spiderling, is a perennial herb, ascending to procumbent, occurring in waste places, fields, river banks, and roadsides. It is widely dispersed throughout the tropics and subtropics of the Old and New World (Small 1933, and Woodson 1961). Correll and Johnston (1970) list its range in the United States as peninsular Florida to south and west Texas and southeast California, and adventive on ballast in eastern North Carolina. Radford et al. (1968) list it as being collected only once in the Carolinas, in 1885 on ballast near Wilmington, North Carolina, and add that it is apparently not established. Collections cited in this paper subsequent to the references above, however, indicate that *B. diffusa* is established in the Carolinas, and warrant its inclusion as an element in the flora of the Carolinas.

Small (1933), Radford et al. (1968), and Correll and Johnston (1970), use the taxon *B. coccinea* Mill. Gard. Dict. ed 8. *Boerhaavia* no. 4. 1768, which Woodson (1961) indicates is a synonym of *B. diffusa* L. Sp. Pl. 3. 1753. Woodson states that after a rather ex-

tensive examination of herbarium specimens, there appeared to be no tangible differences between *B. coccinea* of the New World and *B. diffusa* of the Old World. In addition, my examinations indicate that there are no obvious distinctions between Woodson's description of *B. diffusa* (Woodson, 1961), and recently collected specimens from South and North Carolina, cited below. Woodson's treatment of the genus *Boerhaavia* indicates that in future manuals and floras, the synonym *B. coccinea* should be discarded in favor of *B. diffusa*.

I have collected *B. diffusa* from two sites in Charleston County, S.C.: along the sidewalks surrounding Marion Square in downtown Charleston, and around the buildings of the College of Charleston Grice Marine Laboratory at Fort Johnson. Both populations exhibited vigorous growth and apparently have been established for a number of years. I have observed, but not collected, additional scattered populations throughout Charleston, growing in the cracks of sidewalks and on waste ground around buildings. An extensive search throughout the city would probably reveal that *B. diffusa* is common, since dispersal of its fruit occurs readily because of the viscid anthocarps. S. W. Leonard collected *B. diffusa* in North Carolina in 1970 on waste ground around a railroad near Wilmington. Requests of numerous herbaria in the southwest revealed no additional collections of *B. diffusa* in the Carolinas.

Specific collection data for the specimens cited in the text are: Charleston County, S.C.: (1) sidewalk around Marion Square, downtown Charleston; locally abundant, flowers pink, fruits conspicuously sessile-glandular, plant decumbent; September 23, 1975, Porcher #1001; (2) waste ground around Grice Marine Lab, Fort Johnson; one population of approximately 10 specimens, flowers pink, fruits conspicuously sessile-glandular, plants erect; June 8, 1974, Porcher #842; New Hanover County, N.C.: weed along railroad near Wilmington; immature fruits sessile-glandular; August 22, 1970, S. W. Leonard #3600.

Voucher specimens from the two sites in South Carolina are on deposit in The Citadel Herbarium, Charleston, S.C., and at the University of North Carolina in Chapel Hill. Leonard's specimen is on deposit at the University of North Carolina.

#### ACKNOWLEDGMENT

I wish to thank the curator of the University of North Carolina Herbarium for providing Leonard's specimen.

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Genetic Diversity of *Chlorella* from  
Diverse Environments

PATRICK E. CANARY and E. C. KELLER, JR.

## ABSTRACT

Thirty isolates of the genus *Chlorella* were obtained from various environments that represented a gradation in the extent of environmental stress and location. The growth responses (growth or no growth) of these thirty isolates of *Chlorella* to a variety of metabolic/genetic markers were examined. The isolates were found to be generally grouped according to the environment from which they were isolated, and were not found to be grouped by their taxonomic identification.

## INTRODUCTION

The interaction between the genetic system and the environment has been studied, in detail, with moths (Kettlewell, 1961), *Drosophila* (Dobzhansky, 1948, and Keller and Mitchell 1962, 1964), and some plants (Clausen et al., 1948) and others. However, there have been few simultaneous investigations of the interaction between genetic systems and the ecological systems of the environment (May, 1976). Warren (1971) pointed out that the environment acts as a selective agent and determines which organisms will live in a particular environment. This leads to a testable hypothesis that organisms living in a restrictive, or perturbed, environment should be more similar genetically than organisms living in a diverse environment.