

Nephrolepis cordifolia (L.) Presl



Common Name: Erect sword fern; tuber sword fern; fish-bone fern; ladder fern; Boston fern

Synonymy: *Polypodium cordifolium* L., *Aspidium cordifolium* (L.) Swartz (also sometimes placed in Davalliaceae, sword fern family)

Origin: Tropics, perhaps pantropical

Botanical Description: Epiphytic, epilithic (on rock), or terrestrial in habit. Rhizomes suberect, with spreading, orange brown to pale brown linear scales, these with hairlike tips; wiry, straw-colored, scaly stolons usually present in great numbers, often producing scaly underground tubers, 1.5 cm (approximately .6 in) in diameter. Fronds (leaves) once pinnate, fertile and sterile fronds similar in shape and size, to 1 m (3 ft) long and 7 cm (2.8 in) wide; petioles to 20 cm (8 in) long, with spreading, pale brown scales; pinnae (leaflets) many, 40-100 on each side of rachis (main stalk of frond); each pinna (leaflet) oblong-lanceolate with a deltoid auricle (lobe) on upper side of blade base that usually overlaps rachis; leaflet margins entire to slightly toothed; leaflet midvein glabrous above; rachis with bicolored (two-toned) scales above, pale brown with distinctly darker point of attachment. Sori numerous at ends of veinlets between leaflet midvein and margin, with kidney-shaped indusia (tissue covering the sporangia).

NOTE: May be confused with native *N. exaltata* (L.) Schott, which never bears tubers, has one-color rachis scales (sometimes obscurely bicolored), and has leaflet tips more sharply pointed than those of *N. cordifolia* (Coile 1996). Other *Nephrolepis* species in Florida also with pointed leaflet tips and without the bicolored rachis scales of *N. cordifolia*.

Ecological Significance: Occurs most densely in partial or full shade of hammocks, as far north as the Florida Panhandle (Clewett 1985). Also noted as naturalized in Georgia (Duncan and Kartesz

1981). Can spread aggressively in the landscape, tending to form dense stands that displace native ground cover (K. A. Langeland, University of Florida, personal observations). Said to thrive in common or even poor conditions and produce dense crowns of long, drooping leaves (Bailey and Bailey 1976). By 1981 (Nauman), noted as a widespread escapee from cultivation in central and south Florida. Once thought by some writers (e.g., Wherry 1964) to be native to southernmost Florida, but many herbarium specimens of *N. exaltata* previously misidentified as *N. cordifolia* (Nauman 1981). *N. cordifolia* also not described for Florida in earlier works (e.g., Small 1918a, 1918b), and presently distributed in the state without conformity to natural boundaries such as the frost line (Nauman 1981). Natural populations in Old World found in areas as remote as northwest Himalayas (Gaur and Painuli 1993). Origin in New or Old World tropics still considered uncertain (Nauman 1993b).

Distribution: In Florida, documented as invading scant to dense shade of pine rocklands, mesic flatwoods, upland mixed forests, bottomland forests, and ruderal communities. Most abundantly naturalized in peninsular Florida, from Gainesville south (Nauman 1981). Documented by herbarium specimens from 24 counties: Escambia, Leon, and Duval in north Florida, and on both coasts and in the interior from Citrus, Marion, and Volusia south to Miami-Dade and Collier (Wunderlin and Hansen 2004).

Life History: Fertile all year (Wunderlin 1982). Spread by natural dispersal of spores and by accidental movement of stolons, tubers, and rhizomes, particularly by dumping of yard refuse. Tuber production apparently limited to plants growing in humus (Nauman 1981). Fronds of plants north of the frost line overwinter in protected areas, or die back. Rhizomes, stolons, or tubers produce new fronds in spring.