Stylosanthes Hamata — South Florida Coastal Dune Plant

by John B. Brolmann

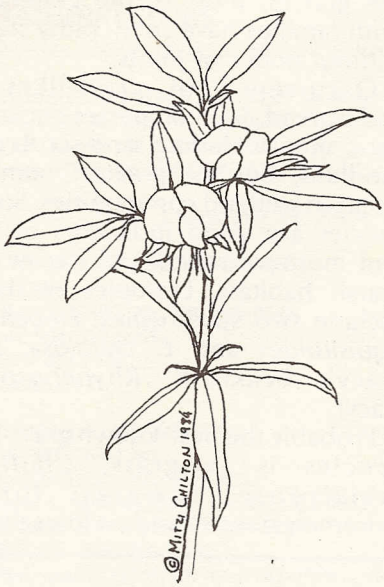
With the steady increase in population in southeast Florida, beach parks are being more frequently used. The grounds lying immediately behind the dune crest in these parks are often very sandy with little or no vegetation. In other areas, particularly along the inlets and the Intracoastal Waterway, the soils are mixed with larger shell debris and are very hard. Construction in many places has contributed to further compaction of these soils, which support little plant growth. A ground cover is needed in these areas to protect the soils against wind and water erosion. Furthermore, a ground cover will make these grounds more suitable for recreation purposes.

Field experiments at the Agricultural Research and Education Center in Fort Pierce have shown that native *Stylosanthes hamata,* (L.) Taub., pencil flower, can be successfully grown in dune soil and on the more acid inland soils. Most ecotypes of this species are salt and drought tolerant. Frequent mowing of the species results in a heavier branching system and improvement of plant stands. It was thought, therefore, that certain accessions of this native legume could be advantageously used to improve park grounds in the coastal dune region.

Large-scale collecting of *S. hamata* on the east coast of Florida began in 1973. This species, which showed great morphological diversity, was found growing from the Keys to Cape Canaveral. There were two distinct types: one, a common ecotype with 20 chromosomes (diploid), and the other, a more vigorous type with 40 chromosomes (tetraploid). This latter type was first found at one site in the coastal area of Riviera Beach and later in Juno Beach and Hobe Sound. No plants of this type have been found farther north.

Because the tetraploid, *S. hamata,* had greater vigor, proved more frost-tolerant, and was more persistent (perennial) than the other ecotypes, studies were conducted to evaluate the ability of this *S. hamata* to become established at two beach locations in Fort Pierce.

Seeds of this accession were broadcast in June 1978, in one-square-yard plots on the two sites on the north beach. Soil was lightly raked after seeding to cover seeds with approximately one-half inch of sand.



PENCIL FLOWER
STYLOSANTHES HAMATA

The extent of establishment of the *S. hamata* plants was evaluated yearly. Vigorous *S. hamata* plants were found in the first location beyond the dune crest in the first year after planting. These plants had a deep root system approximately 14 inches long. Diameter of the largest plant was 20 inches. In the second year, the population of *S. hamata* plants had tripled at this site. In June 1980, there were several well-developed *S. hamata* plants at the second test site farther from the dunes where soils are more compact and contain larger shell fragments.

The spread of *S. hamata* through new seedlings continued over the following years and in 1984 the stand covered an area of about 400 square yards at the second site.

S. hamata seems to be well adapted to the coastal dune areas. Consideration should be given to use of this species in locations where a ground cover or sod is needed. Regeneration of this perennial legume occurs by the abundant seed produced from early summer to late fall.