

# The Conservation Status of *Schippia concolor* in Belize

MICHAEL J. BALICK AND DENNIS JOHNSON

*Institute of Economic Botany, The New York Botanical Garden, Bronx, NY 10458 and  
605 Ray Drive, Silver Spring, MD 20910*

*Schippia* is a monotypic genus consisting of a single species, *S. concolor*. It was described by Burret (1933) from material collected in Belize by William A. Schipp. The type locality is listed as "19 mile Stann Creek Valley." It has a limited distribution within Belize, primarily in the Belize, Cayo, and Stann Creek Districts. The vernacular name for this palm in Belize is "silver pimento" or "mountain pimento." Johnson et al. (1986), in their survey of the levels of endangerment of New World Palms, suggested that *Schippia concolor* should be maintained in the "Endangered" category, as recent attempts to study it in Belize had resulted in only a single plant being seen. In order to clarify the status of this genus and develop further information on its natural range, numerous observations have been made during fieldwork in Belize and Guatemala from 1987 to the present.

## Description of *Schippia concolor*

The genus *Schippia* is in the subfamily *Coryphoideae*, in the tribe *Corypheae* and in the subtribe *Thrinacinae* (Uhl and Dransfield 1987). It is closely related to *Cryosophila*, *Thrinax*, and *Coccothrinax*, and misidentification among the four genera is common.

*Schippia concolor* has a solitary, slender, unarmed, rough trunk to 10 m in height that is gray in color. The arching palmate leaves are a dark, glossy green above and dull beneath, about 1 m broad, with petioles about 2 m long. Leaves and petioles also are unarmed and arrayed in an open crown that gives the palm a delicate and graceful appearance. The pendant inflorescences are twice or thrice branched and about 60 cm long and bear both staminate and pistillate flowers. Fruits are globose, about 2.5 cm in diameter, and white when mature (Fig. 2).

## *Schippia* in Belize

In forested habitats in Belize, *Schippia concolor* often occurs with populations of other palms,

including *Thrinax radiata* Lodd. and *Cryosophila argentea* Bartlett. At first glance it is sometimes difficult to separate the taxa. The following key, modified slightly from Standley and Record (1936) and with data from Zona (1990), can be used to separate the palmate-leaved species of Belizean palms.

- Leaves palmate, with very numerous plaited segments.
1. Petioles armed with coarse stout spines . . . . . *Acolorrhaphe wrightii*.
  1. Petioles unarmed.
    2. Leaf blades divided at the middle to the base.
      3. Trunk unarmed . . . . . *Schippia concolor*.
      3. Trunk armed with long spines . . . . . *Cryosophila argentea*.
    2. Leaf blades not bilobed.
      4. Leaf blades with a well-developed rachis extending for about half their length . . . . . *Sabal*.
      5. Petiole 2-3 m in length; segments in groups of 2-3 and united for nearly their entire length, the middle segment 125-200 cm long; inflorescence with 4 orders of branching . . . . . *Sabal mauritiiiformis*.
      5. Petiole 0.5-2 m in length, segments in groups of 2, rarely 3, and united for nearly 50% of their length; the middle segment 125-200 cm long; inflorescence with 3 orders of branching . . . . . *Sabal yapa*.
    4. Leaf blades with a very short rachis or the rachis almost absent.
      6. Fruit black at maturity; trunk with a network of fiber about the base of the leaves but without dense pads of "wool," endosperm channeled . . . . . *Coccothrinax argentea*.
      6. Fruit whitish at maturity; trunk with thick pads of wool-like fibers about the bases of the petioles; petiole bases with a central triangular cleft; endosperm smooth . . . *Thrinax radiata*.

Although Steyermark (Standley and Steyermark 1958) suggests that *Schippia* may be present in Guatemala, extensive reconnaissance by H. J. Quero failed to find it in that country (Quero, personal communication). A search for the herbarium specimen purported to be *Schippia concolor* from Guatemala (Steyermark 45538) has been unsuccessful. A brief trip by Balick to Tikal and environs in 1993 also failed to locate any



1. Habitat of *Schippia concolor* in the pine forest of St. Augustine. (Photo by M. Balick.)

evidence of *Schippia*. Therefore, distribution of *S. concolor* in Guatemala cannot be proven. We consider the palm endemic to Belize.

### Field Observations

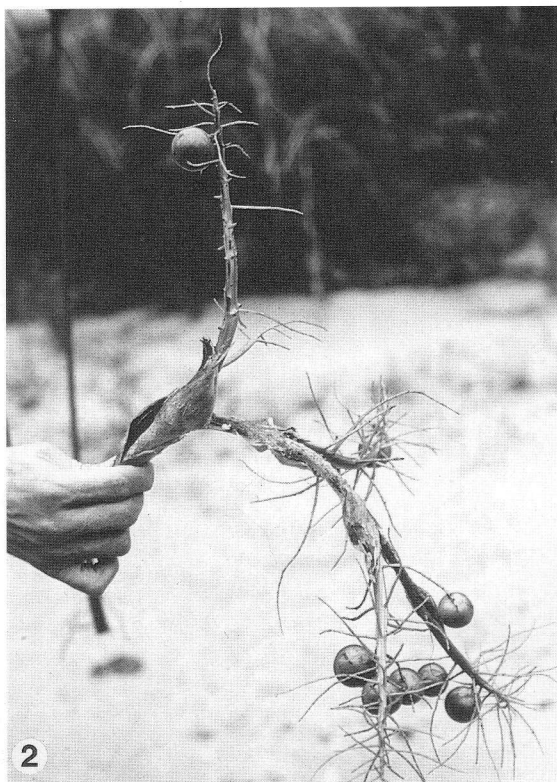
*Schippia concolor* was observed to be a common species on Mountain Pine Ridge, St. Augustine, at an elevation of ca. 500 meters (Fig. 1). This is an open area of pine forest (*Pinus caribaea* var. *hondurensis*) subject to frequent burning. The bark of many plants in this area, including *Schippia concolor*, is thick and corky, suggesting an adaptive mechanism to the area's frequent fires (Fig. 3). Fires seem to inhibit regeneration of the palms, as the seedlings observed under the individual mature trees were quite young (Fig. 4), and a complete assortment of palms at various life stages, as one might expect in an actively reproducing population, was not found in these fire-influenced habitats. In general, this species seems to occur in small populations, from ca. 2 or 3 to 50 plants in a single area.

Another site studied was along the Western

Highway ca. 25 miles from Belize City. There *Schippia concolor* is found in a dense forest formation that appears frequently inundated and not subject to fires. The palm was also found growing on the grounds of the Belize Zoo and its environs, ca. 11 miles south of Belize City (Fig. 5). The habitat is a more open area of forest than at the mile 25 site. *Schippia concolor* is also found at additional sites along the Western Highway between mile 27.5 to 28.5, mile 30-31, 32-33, and at mile 39.

One herbarium collection (M. J. Balick et al. 1845) was made at the base of the Mountain Pine Ridge reserve along the road from San Antonio at an elevation of ca. 230 meters. This was in an area of undisturbed subtropical moist forest, and it was noted that the "bark" of *Schippia concolor* was not as corky as in the Mountain Pine Ridge area (Fig. 6).

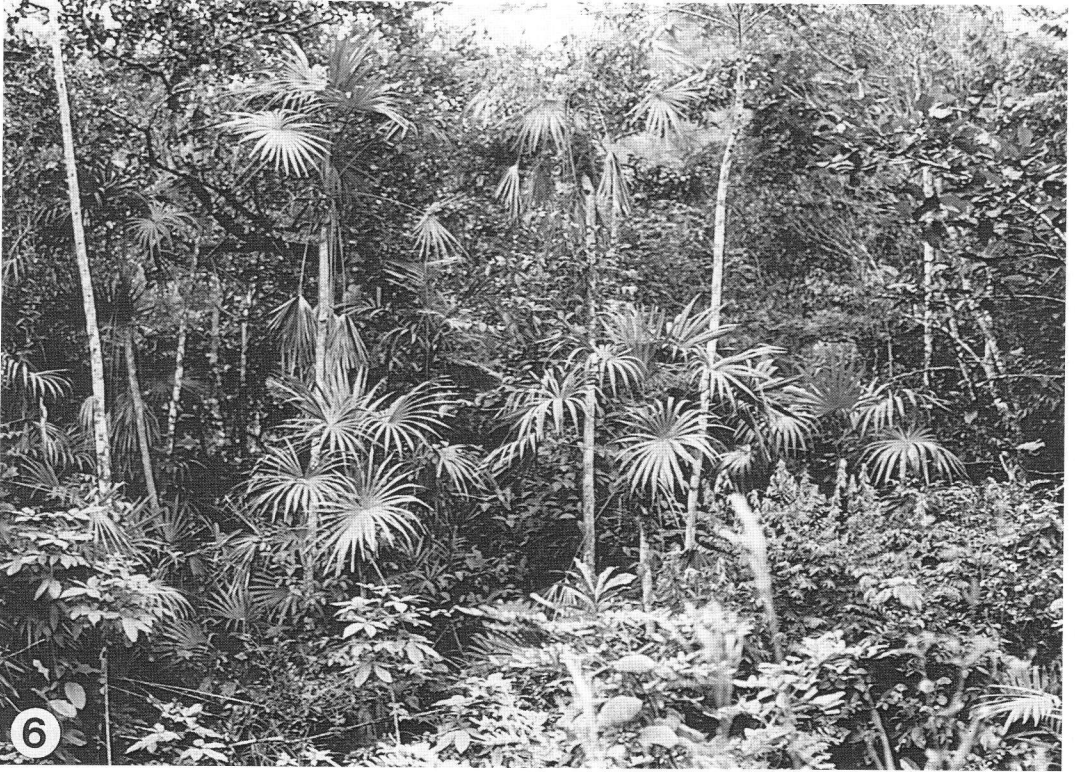
*Schippia concolor* was also noted at Ix Chel Farm, 10 km south of San Ignacio (Cayo District). This is in primary forest in association with *Cryosophila argentea* and *Thrinax radiata*. A col-



2. Inflorescence and fruits of *Schippia concolor*. (Photo by M. Balick.) 3. Stem of *Schippia concolor* growing in habitat exposed to frequent fires. (Photo by M. Balick.)



4. Seedlings of *Schippia concolor* growing under adult tree. (Photo by M. Balick.) 5. *Schippia concolor* in scrub forest environment near Belize Zoo. (Photo by M. Balick.)



6. *Schippia concolor* in subtropical moist forest habitat at base of Mountain Pine Ridge. (Photo by M. Balick.) 7. Destruction of *Schippia concolor* habitat along the Western highway. Pine trees are being logged out. (Photo by M. Balick.)

lection was made (*M. J. Balick et al.* 1976), although no fruits or flowers were included. This represents a new locality for the species and further extends its range within Cayo District.

Other sites where *Schippia* was observed or collected include the Cockscomb Basin Jaguar Preserve in Stan Creek District, 10 km west of Maya Center and Vaca Falls in the Cayo District, growing on the rocky cliffsides overlooking the Rio Macal.

Fruiting of *Schippia concolor* occurs in September. By November, only remnants of fruits, as well as a very few fruiting mature panicles are to be seen. This palm has no reported economic use, apart from being grown for ornamental purposes.

### Conservation Status in Belize

According to Hartshorn et al. (1984) Belize is not subject to the high rates of deforestation as are other areas of the tropics, although pressures for farmland are increasing. The influx of tens of thousands of political refugees from neighboring countries in recent years has placed a great deal of stress on the forests along the Belmopan–Stann Creek road and south to Punta Gorda. Recently there has been implementation of large agricultural projects in other areas that are resulting in massive forest clearing (Fig. 7). For example, a major hydroelectric project will also destroy some of the populations of *Schippia concolor* in the Rio Macal Valley. All of this could change the current validity of Hartshorn et al.'s 1984 assessment.

While it appears that no immediate threat to the existence of *Schippia concolor* in Belize exists at the present time, the fate of individual populations appears more questionable. The most protected populations are found in a forest reserve, Mountain Pine Ridge. It should be noted that, due to the frequent fires, the palms do not appear to be regenerating in sufficient numbers to maintain extensive populations over the long term. Another protected site is the Ix Chel Farm, where the owners (Drs. Rosita Arvigo and Gregory Shropshire) are intent on preserving the forest where the species has been discovered. Palms in areas such as the base of Mountain Pine Ridge or along the Western Highway are at far greater risk of

destruction because of the pressures for development of this area, with the exception of the land owned by the Belize Zoo. In conclusion, it appears that while some populations are in danger of extinction, the genus as a whole in Belize is probably safe for the near future. Given the circumstances described above, it is recommended that the conservation status of *Schippia concolor* be changed from "Endangered" to "Vulnerable" in Belize. Increased harvest of the seed for cultivation of this ornamental tree in other regions is recommended as a way of encouraging the wider scale distribution of the Belizean endemic palm. According to Botanic Gardens Conservation International, *Schippia concolor* is in cultivation at Royal Botanic Gardens, Kew, and Fairchild Tropical Garden, Miami (BGCI 1993).

### Acknowledgments

We are grateful to Drs. Rosita Arvigo and Gregory Shropshire for their interest and companionship in the field and to the Forestry Department of the Ministry of Agriculture, Forestry and Fisheries for granting permission to undertake fieldwork in Belize. The kindness of Mick and Lucy Fleming of Chaa Creek and Lou Nicolait is also acknowledged. We are grateful to Dr. Andrew Henderson for his comments on the manuscript.

### LITERATURE CITED

- BGCI. 1993. Rare and threatened palms of the world in botanic garden cultivation report. Botanic Gardens Conservation International, Richmond, Surrey, U.K.
- BURRET, M. 1933. *Schippia*, eine neue Palmengattung aus Brit. Honduras. Notizblatt des Botanischen Gartens und Museums zu Berlin-Dahlem 109: 867–869.
- HARTSHORN, G. ET AL. 1984. Belize: country environmental profile. Trejos. Hnos. Sucs. S. A., San José, Costa Rica.
- JOHNSON, D. V., R. W. READ, AND M. J. BALICK. 1986. Economic botany and threatened species of the palm family in Latin America and the Caribbean. Final Report to the World Wildlife Foundation. No. 3322.
- STANDLEY, P. C. AND S. J. RECORD. 1936. The forests and flora of British Honduras. Field Museum of Natural History, Bot. Series XII: 1–432.
- STANDLEY, P. C. AND J. A. STEYERMARK. 1958. Flora of Guatemala. *Palmae*. Fieldiana: Botany 24(1): 196–299.
- UHL, N. W. AND J. DRANSFIELD. 1987. *Genera Palmarum*: a classification of palms based on the work of Harold E. Moore, Jr. The L. H. Bailey Hortorium and The International Palm Society. Allen Press, Lawrence.
- ZONA, S. 1990. A monograph of *Sabal* (Arecaceae: Coryphoideae). *Aliso* 12(4): 583–666.