

References

- Ramos, J. 1999 - The 1998 roseate tern breeding season. In Bowler, J. & Hunter, J. *Aride Island Nature Reserve, Annual Report 1998*. RSNC unpublished.
- Venis, S. 1999 - Skink populations on Aride. In Bowler, J. & Hunter, J. *Aride Island Nature Reserve, Annual Report 1998*. RSNC unpublished.

NOTES

The arrowhead vine, *Syngonium podophyllum* Schott (Family Araceae), a potential invader in Seychelles

Pat Matyot,
P.O. Box 321, SEYCHELLES

There appears to have been no record of the occurrence in Seychelles of *Syngonium podophyllum* Schott (Family Araceae), the so-called arrowhead vine ("patte d'oie" in French) of the foliage plant industry, before it was mentioned by Robertson (1989) in her annotated checklist of the flowering plants of these islands. Robertson found the species growing on Mahé some time between September 1975 and the end of 1981.

By 1987 *S. podophyllum* had become a widespread cultivated "ornamental" in gardens all over Mahé; in 1991 it was found to be growing as an escape near the houses on the eastern side of Frégate; in 1993 some specimens were found growing among coco-de-mer palms in the Vallée de Mai nature reserve on Praslin, and a vase containing shoots of the plant was observed in the guest-house on Silhouette (all personal observations). It is extremely likely that it occurs on La Digue as well.

In Robertson (1989) the specific name of the plant is preceded by a question mark ("*S. ?podophyllum*"), indicating that the author was uncertain of its specific status. Most of the specimens I have examined certainly appear to be *S. podophyllum*, displaying the heterophylly for which it is notorious: young plants have simple arrow-shaped dark green leaves with pale, almost whitish, markings along the major veins; while on mature plants the leaves are entirely green and range from those that consist of three leaflets (a larger central one with a pair of smaller ones at its base) to those with up to eleven leaflets arranged palmately. There are also "intermediate" leaves with three or more lobes that retain the pale markings. Some of the plants examined had slightly different leaves (some were almost heart-shaped, with the pale coloration extending beyond just the main veins) but they were probably cultivars of the same species – which would mean that there have been more than one introduction to Seychelles.

It is now clear that *S. podophyllum* has the potential to become invasive in the

granitic islands of Seychelles. Lush stands covering many dozen square metres occur in escape situations in the vicinity of residential areas at Le Niol, Bel Ombre, Mont Buxton and other parts of Mahé. Preliminary observations suggest it thrives best in conditions of moisture and partial shade. In such situations it grows aggressively, climbing up rocks and trees by means of its "adhesive" adventitious roots, and smothering all other vegetation.

A combination of factors favours the further spread of *S. podophyllum* in Seychelles. It is currently a particularly popular "house" plant, probably not only because of its variegated juvenile leaves but also because it is extremely hardy, cut shoots being able to survive for several months in vases containing only water. Discarded portions are often thrown onto rubbish heaps and on waste ground, and there they root and sprout new shoots readily, displaying a strong capacity to resist desiccation, even in times of drought (pers. obs.). The species is also deliberately cultivated in gardens from cuttings. Wherever it grows, secondary shoots bearing roots may become separated from the mother plant, resulting in vegetative propagation, but the presence of juvenile plants some distance from old stands suggests *S. podophyllum* can also produce viable seed. Certainly it flowers regularly in Seychelles, the inflorescences appearing to be concentrated on shoots creeping up tree-trunks and other supports.

S. podophyllum, a native of tropical America, is one of several species of climbing plants of the family Araceae introduced to Seychelles. One of them, *Epipremnum pinnatum* (L.) Engl. (also known under the synonyms *E. aureum* (Lind. & André) Bunting; *Philodendron nechodomii* Britt.; *Pothos aurea* Lindl. & André; *Rhaphidophora aurea* (Lind. & André) Birdsey; *Scindapsus aureus* (Lindl. & André) Engl.), the "*Philodendron*" of some authors, is already a pestilential invader in parts of the Vallée de Mai on Praslin (Beaver and Chong-Seng 1992). In the United States, the Exotic Pest Plant Council of Florida lists *S. podophyllum* under "Category II", i.e. as one of the "species that have shown a potential to disrupt native plant communities" (EPPC Invasive List Committee 1997). No disruption of native plant communities by the species has yet been observed in Seychelles but its tendency to develop readily into extensive monospecific stands in areas of secondary vegetation next to residential areas does not augur well for natural habitats.

Those plants that have been examined harbour an extremely reduced insect fauna, made up mostly of the ant *Technomyrmex albipes* (Smith, 1861) and the mealy bug *Icerya seychellarum* (Westwood, 1855). A newly-hatched hawkmoth larva, probably *Hippotion eson* (Cramer, 1779) was found on a leaf that bore no sign of insect attack. In captivity the caterpillar refused to feed on *S. podophyllum* and died.

An additional consideration is that *S. podophyllum*, like many other aroids, contains crystals of calcium oxalate (Souder 1963), the ingestion of which may cause irritation of the mucous membranes and swelling of the mouth and tongue in mammals, including humans. Even the outer skin may become irritated if it comes into contact with the cut ends of stems and shredded leaves (André Lucas and Rosemary Mathiot, pers. comm.).

In view of the potentially harmful impact that *S. podophyllum* could have on native biodiversity in Seychelles, it is recommended that its rate of spread ("invasiveness") and impact on other species be monitored so that a control programme can be developed if necessary.

References

- Beaver, K. & Chong-Seng, L. 1992 - *Vallée de Mai*. SPACE, Seychelles, 60 pp.
- EPPC Invasive List Committee 1997 - *Exotic Pest Plant Council's 1997 List of Florida's Invasive Species*. Published on WWW at <http://www.fau.edu/divdept/biology/people/eppc97.htm>
- Robertson, SA. 1989 - *Flowering plants of Seychelles*. Royal Botanic Gardens, Kew.
- Souder, P. 1963 - In: Keegan, HL & Macfarlane, WV (Eds.) *Venomous & poisonous animals and noxious plants of the Pacific region*. Pergamon Press, New York.

NOTES

Productivity and energetics of giant tortoises on Aldabra, a reappraisal of existing data.

Justin Gerlach

PO Box 207, Victoria, SEYCHELLES/133 Cherry Hinton Road, Cambridge, UK.

The wild Aldabran giant tortoises, *Dipsochelys dussumieri* (Gray, 1834), have been studied in considerable detail. Much of the data collected has been combined into models and analyses of ecological and physiological processes. Data on food consumption, digestive efficiency and reproduction have been particularly useful in furthering our understanding of the ecology of this population. However, re-examination of one analysis has revealed a number of short-comings in both the data and the analysis. These are reappraised and new conclusions suggested below.

The energetics of digestion were used to predict productivity patterns on Aldabra by combining curves of size specific assimilation efficiency and respiration to provide a predictive production curve (Hamilton & Coe 1982). The published study found a marked difference between the predictive curve and real production values, with higher than predicted production in both small and large tortoises. These differences were suggested to result from errors in the assumption used to model the predictive curve, namely the linear change in consumption rates with only a crude seasonal aspect and the laboratory origins of the respiration rates.

The origins of the respiration data may affect the precise values but appear to be sufficiently robust to determine a reliable pattern (Hughes *et al.* 1971) which is all that is needed in this instance. In contrast the assimilation curve is derived from statistically non-significant regressions (Hamilton & Coe 1982). These data are insufficient to determine a true curve and more plausible patterns can be proposed.

As the true values of production have been calculated separately (Coe *et al.* 1979) it