FROM THE EDITOR

ROOT GORELICK

While the contents of each issue of *Haseltonia* primarily reflect the interests of the authors of the papers, quite serendipitously in this instance, they also reflect my interests. For example, two-thirds of the papers are on cacti, with the extreme irony that I contributed one of the few 'other succulent' papers. But, more importantly, *Haseltonia* is building a reputation for papers on basic biology of cacti and succulents, rather than just on plant exploration and taxonomy. Please don't misconstrue this: discovery of new taxa and new understanding of relationships (i.e. classification) is still important. But we are gradually realizing that cacti and succulents can teach us important things about the natural world, things that can often be quite generalizable in ecology, evolution, anatomy, and physiology. "Darwin admonished us not to ignore the 'oddities and peculiarities' of life as we see it today. It is by the analysis of such oddities that evolutionary history can be reconstructed" (Margulis & Sagan 1988). The plants we study have potential to tell some incredible stories. And the authors of the papers herein have done a beautiful job translating and transmitting those stories. I sincerely hope that *Haseltonia* will remain the flagship journal for peer-reviewed primary literature on the biological 'oddities and peculiarities' of cacti and succulents.

The first section of this issue features four papers on reproductive isolation in cacti. We begin with a paper that challenges a paradigm of pollination biology. Botanists often think of scarlet flowers with long tubes as being hummingbird pollinated, but Urs Eggli and Mario Giorgetta conducted meticulous work to show that the statuesque Argentine *Denmoza rhodacantha* is pollinated by bees. The back cover features a flower of *Borzicactus madisoniorum*, which looks like what most people would call a typical hummingbird pollinated flower, but in reality might be pollinated by something else. *Denmoza* and *Borzicactus* are probably closely related, as highlighted by Myron Kimnach over fifty years ago (Kimnach 1960). The next meticulous paper documents both pre-zygotic and post-zygotic reproductive isolation between two sympatric *Astrophytum* taxa. While not the primary purpose of this paper, Richard Montanucci highlights an important horticultural novelty: *Astrophytum* hybrids often result in offspring that are deficient in chlorophyll. I wonder whether the same thing happens in *Gymnocalycium* and other vibrant achlorophyllous cacti, many of which have been extensively propagated by grafting? The third paper is on a plant that grows a mere 200 km west of my current home – yes, a cactus inexplicably growing in eastern Canada – and how its flowers lack functional female parts. While this Canadian specimen may be an aberrant form, I only know of one other opuntioid with imperfect flowers, namely the gynodioecious *Opuntia quimilo*. What opposite ends of the size and geographic range spectra: the massive tree of *O. quimilo* in Argentina and the diminutive *O. fragilis* in Canada. The fourth paper in this section is on chromosomal banding of some epiphytic cacti in the Hylocereinae. Not only are karyological studies important for determining taxonomic relationships, as the authors of this paper suggest, but chromosomal bands may also contribute to or be an indication of reproductive isolation.

The second section of this issue features three papers on anatomy and physiology, beginning with a very important paper on mescaline concentration in peyote. The authors show that the green (well, often greyish green) above-ground parts of peyote have high concentrations of the hallucinogenic compound mescaline, but parts of the plant that are not photosynthetic have much lower mescaline concentrations. This has major policy implications, including for conservation, as nowadays people who harvest these plants often remove plant parts with very little mescaline and also consequently render the remaining parts of the plant incapable of vegetatively regenerating. This paper is co-authored by our previous editor, Martin Terry, to whom I owe a huge thanks. Next we read about stomata on cactus stems. Stomata are essential for regulating the amount of CO_2 that gets into a plant for photosynthesis and the amount of water that leaves the plant, truly conflicting demands that each plant must somehow balance. The final paper in this section attempts to explain why we can grow some – but not all – plants with succulent leaves from leaf cuttings and why we cannot propagate plants with non-succulent leaves from leaf cuttings.

The third section of this issue features a pair of papers on succulent taxonomy. First is a short but sweet manuscript on a new species of *Sedum*. This is followed by a majestic and almost monograph-length treatment of the genus *Agave* in Baja California. In these two papers, the following new combinations are made in *Haseltonia* 20:

Agave aurea var. *capensis* R.H.Webb & G.D.Starr
Agave aurea var. *promontorii* R.H.Webb & G.D.Starr
Agave cerulata var. *nelsonii* R.H.Webb & G.D.Starr
Sedum piaxtlaense Reyes, Etter & Kristen

Each paper in this issue was vetted by at least two reviewers and many by three or four reviewers. My sincere thanks to the reviewers of the papers herein and to reviewers of papers we rejected. Most of the reviewers are anonymous, although several chose to waive their anonymity, in which case their names appear in the acknowledgments sections of the respective papers. One of those reviewers was Myron Kimnach, the founding editor of *Haseltonia*, who still remains active in our field, although I suspect not quite as active as he would like to be. This 20th issue of *Haseltonia* is dedicated to Myron, who had the amazing vision to include deliberative scientific peer-review as an integral part of what for so many of us is also a hobby.

With that, I bid a fond farewell to *Haseltonia*, making way for a new editor. It has been a true pleasure working with the cactus and succulent community for a half-dozen issues of *Haseltonia*, especially authors, reviewers, and our managing editor Tim Harvey and, before him, the inimitable Russell Wagner. While I may no longer be editor, I promise to keep in contact with many of you. Being editor has helped reinvigorate my interests in cacti and succulents, making these plants a vital part of my research. Finally, a special thanks to our subscribers for all your years of support, which has allowed *Haseltonia* not only to continue, but to flourish.

Literature Cited

Kimnach M (1960) A revision of *Borzicactus. Cactus and Succulent Journal* 32: 8-13, 57-60, 92-96, 109-112.

Margulis L & Sagan D (1988) Sex: the cannibalistic legacy of primordial androgynes. Pages 23-38 *in* Bellig R & Stevens G (eds.), *The evolution of sex.* Harper & Row, San Francisco.