

A new lily and the Southeast's unique flora

by Director Peter S. White

Stop the presses! A new lily species, *Lilium pyrophilum* (the sandhills lily), has just been reported from North Carolina, documented by M. W. Skinner and Bruce Sorrie. It is not just the distant tropical rain forest that harbors species new to science, but the rich flora of our own state still has undiscovered treasures.

Alan Weakley, Curator of the UNC Herbarium, calculates that since the last publication of our State's flora in 1968, there have been several hundred additions to the state flora — yes, some are new, invading weeds and some are extensions of range from neighboring states. But some, like the new lily, are rarities that tell a story about the diverse botanical kingdom we call North Carolina.

The Southeast's unique plants are legendary:

- ◆ *Dionaea*, the Venus flytrap, which Darwin called the most wonderful plant in the world.
- ◆ *Franklinia*, named for Benjamin Franklin, which father and son botanists William and John Bartram found in the 1700s and which was last seen in the wild in 1812 (meanwhile, it spread through botanical gardens and is one species said to be saved from extinction by gardeners).
- ◆ *Shortia*, found, lost, and found again in the North Carolina mountains, so intrigued the great 19th century botanist Asa Gray that he got involved in the hunt.
- ◆ *Torreya*, a unique gymnosperm related to a California tree, confined to a few gorges in southern Georgia and adjacent Florida.
- ◆ I could add many more to my list — and fill out the description of each one with many words.
- ◆ All of these plants, like the new lily, are narrow endemics. A narrow endemic is a plant with a very narrow natural range. Though the Venus flytrap is known — and cultivated — the world over, it is native only to a small circle of radius 100 miles from Wilmington, North Carolina.

The Southeast is rich in narrow endemics. Let me set the context. As you move from South to North, the number of plant species drops — part of an overall pattern of decrease from the tropics to the poles. For example, New England is about as large as North and South Carolina, has a similar elevation range (Mount Mitchell is about 400 feet taller than Mount Washington) and is, like the Carolinas, a landscape with a wet climate and extensive coastline. However, the Carolinas have about one-third higher plant diversity than New England as a result of being farther south. That's a total of about 700 more species for the Carolinas!

The story for narrow endemics is even more dramatic. While the Carolinas have one-third more plant species than New England, we have five times as many narrow endemics. Could there be a connection to the Ice Age?

Possibly — first, any narrow endemics before the Ice Age would have survived in the South (none could survive in the North) and, second, although the South was not glaciated, it did have a much cooler climate, and some species may have been limited to narrow ranges from which, for various reasons, they never spread. The Ice Age may have been both protector and creator of narrow endemics in the Southeast.

One lesson we can learn from this is that, not only does contemporary environment matter, but there is often an imprint of history in the distribution of life. Our landscape is the richer and more interesting for this fact.

This also gives the North Carolina Botanical Garden one of the world's most interesting floras to explore and display, and from which to derive good garden plants. As you might imagine, narrow endemics, being limited to very few areas, are also among those most vulnerable to human impacts — and thus among those we work to conserve, whether in the wild or in the germ plasm collections we hold as a last resort against extinction for The Center for Plant Conservation and the North Carolina Plant Conservation Program.