

A new lily in the Carolinas — and goldenrod, azalea, ferns . . .

by Herbarium Curator Alan Weakley

North Carolina's botanical diversity is high — in the eastern United States, only Florida and perhaps Georgia have more native species.

How many unique plant species, subspecies and varieties are there in North Carolina? The current count is at about 4,200 for North Carolina (of which about 3,400 are native), and about 4,650 for the Carolinas (of which about 3,700 are native). The landmark *Manual of the Vascular Flora of the Carolinas* by A. E. Radford (former Director and Curator of the Herbarium), H. E. Ahles (former Curator of the Herbarium), and C. R. Bell (former Director of the North Carolina Botanical Garden), published in 1968, documented 3,542 unique species, subspecies, and varieties for the Carolinas, or over 1,000 species fewer than the more recent count.

A third of a century has passed between the two estimates, but a thousand species is a big change! So, where do all these “extra” species come from? There are four main sources of the additional species, and they are roughly equal in magnitude:

- ◆ The discovery and description of new native species;
- ◆ The “re-recognition” of species previously named, but subsequently “lumped” or disregarded;
- ◆ The discovery that a known native species occurs in the Carolinas, when previously it had been thought to occur only north, or south, or west of our area; and
- ◆ The invasion and establishment of additional alien species.

Garden Director Peter White writes (see below) about the discovery and naming of the sandhills lily (*Lilium pyrophilum*) by National Plant Data Center botanist Mark Skinner and University of North Carolina Herbarium Associate Bruce Sorrie. First noticed several decades ago, botanists were unsure whether to regard the bog-inhabiting sandhills lily as a mere form of more common and widespread lily species (*Lilium michauxii* or *Lilium superbum*), as a range extension of the panhandle lily (*Lilium iridollae*) from Florida and Alabama, or as a new species.

In the early 1990s, the U.S. Department of Defense contracted The Nature Conservancy and the North Carolina Natural Heritage Program to conduct a rare plant inventory of Fort Bragg Army Base. The study of the lily populations at Fort Bragg and in other places in the North Carolina sandhills by Sorrie and Skinner convinced them that the plants were indeed a distinctive new species. Imperiled by habitat destruction and disruption of the natural fires that maintain sandhills bogs, only several hundred individuals of this sandhills lily remain, making it upon its discovery one of the rarest plants in the United States.

Numerous other new species have been discovered and named in the Carolinas in the last decade, and many of them are imperiled habitat specialists, discovered as they declined towards oblivion. North Carolina Natural Heritage Program botanist and UNC Herbarium Associate Richard LeBlond discovered and named Coastal Goldenrod (*Solidago villosicarpa*), restricted to forests near tidal creeks in several counties in southeastern North Carolina, where it is threatened by resort development. South Carolina Department of Natural Resources employee Mike Creel and Wake Forest University professor Kathleen Kron discovered a new native azalea, the May White Azalea (*Rhododendron eastmanii*) growing on bluffs in many counties of central South Carolina — overlooked by generations of botanists.

In the ferns and fern allies alone, the last decade has seen the naming of ten new species that occur in the Carolinas, as new techniques allow previously unrecognized species to be reliably distinguished.

We cannot conserve our wealth of plant species without knowing what they are and where their critical habitats lie — and time is running out. It is not just in uncharted jungle wildernesses where uncataloged plants remain to be discovered — they are literally all around us in the Southeastern United States. At the Herbarium, we are reminded that this is an urgent and sacred calling — understanding, documenting and conserving the spectacular diversity of our native flora.