THE RARE VASCULAR PLANTS OF TENNESSEE
Committee for Tennessee Rare Plants*

ABSTRACT

It has become increasingly obvious that much of Tennessee's landscape has been heavily altered or destroyed by man's activities. Few natural areas are adequately protected and without judicious land and water management in the future, most of the State's natural heritage will soon be destroyed. Recent national concern for the future quality of the earth's environment is reflected in the federal Endangered Species Act (Public Law 93-205), state, regional (Styron, 1976), federal plant and animal lists, and local environmental controversies. In Tennessee, concern for the production of a rare plant list has come about from a variety of sources: interested individuals, state committees, other state programs, programs on the national rare plant list, the scientific community, and those involved in the preparation of environmental impact statements. The list of Tennessee rare plants included heretofore attempts to indicate their present state of endangerment and known county distribution. It was preceded by those of Smith (1948, 1974) and Goff, Stephenson, & Lewis (1975).

During the past months, consideration was given as to how Committee for Tennessee Rare Plants should begin preparation of this list, using as reference sources the Herbarium of Vanderbilt University and the Department of Botany, University of Tennessee, Knoxville. Although by no means the only important collections of the State flora, these two herbaria represent by far the largest collections of Tennessee.

Our procedure was to catalog all vascular plants which are reported from three or fewer counties. Regional manuals, monographs, and other pertinent taxonomic papers were then consulted to determine the geographic distribution of each taxon. All introduced, cultivated, and escaped taxa were eliminated from the list. The remainder was then subjected to scrutiny by the committee and additional taxa were eliminated based on known weed characteristics that would make their inclusion superfluous. In a few cases, we have included taxa known to occur in more than three counties. In general, these are taxa that are either commercially exploited (e.g., Panax quinquefolium and Hydrastis canadensis) or regionally endemic species with limited distributions and little or no possibility of further range extension (e.g., Condradina verticillata, Central Basin endemics, Southern Appalachian endemics). The resulting list is therefore not an all-inclusive list of what is known of the county distribution and endangerment of our least frequently collected taxa, recognizing that working with these particular taxa represents a peculiar combination of both knowledge and ignorance. The final list includes some subjective judgments by the committee concerning inclusion or exclusion based on true rarity versus infrequent collection and the application of the criteria used below in assembling the list.

In September 1976, a letter was distributed to the State's botanists with the list appended. In November, a public workshop was held in conjunction with the Tennessee Academy of Science meeting and the list was examined and amended by approximately 40 participants. Since then we have had additional verbal and written communications and a few records have been added from other herbaria and from the literature.

The present list consists of four categories of taxa: Potentially Extinct, Endangered, Threatened, and taxa which have not been seen in Tennessee within the last 20 years. Endangered—Species now in danger of becoming extinct in Tennessee because of:

(a) their rarity throughout their range,
(b) their rarity in Tennessee as a result of sensitive habitat or restricted area of distribution.

Threatened—Species likely to become endangered in the immediate future because of a result of rapid habitat destruction or commercial exploitation.

Special Concern—Species requiring particular attention because:

(a) they are rare or distinctive in Tennessee because of their geographic range,
(b) their status is undetermined because of insufficient information.

Of the 58 rare Tennessee plants in the Federal Register (U. S. Dept. of the Interior, 1975, 1976), we have excluded the following:

ENDEANGERED

Clematis additio Britton—does not occur in Tennessee (Denslow, 1978)
Clematis gattingeri Sloss—sympomorph with Clematis virginia (Denslow, 1978)
Drosa incisa—a non-native species
Erodium linariaeforme (Rhode) M. H. John—of doubtful validity, known only from the type
Geum canadense Michx.—no Tennessee specimens seen although it occurs on Roan Mountain in North Carolina
Helianthus eggersii Small—not uncommon
Phrymophyllum tenellum B. Grout & Eglin—not a Tennessee specimen seen
Siplochila scoparia (Michx.) var. gattingeri Perry—of doubtful validity, known only from the type
Sisymbrium pimpinelloides M. A. Cherub—in Tennessee specimen seen

THREATENED

Carex purpurascens Mackenzie—not uncommon
Platanthera flaviflora (L.) R. E. Huang & A. H. Cheng Gray—not uncommon
Rhododendron barclayi (Scheele & P. P. E. Hope)—apparently conspecific with Rhododendron luteum L. E. Bron
Saxifraga cernua Gray—not uncommon
Saxifraga caroliniana Gray—does not occur in Tennessee (Lord, 1960)
Sempervivum hiap挫折 (Michx.) Baillon—not uncommon

The absence of cultivated plants on this list should not suggest that these taxa are of little value, as much of our native flora is already in cultivation (Bailey, 1961). Similarly, concern for rare plants need not be based solely on their uniqueness or esoteric value. The absence of these rare plants from local curiosities, but today are cultivated for drugs such as the rhubarb root, is significant. However, the antimetastatic properties of Eupatorium of the southeastern U. S. Several of our native plants are collected and sold as drug sources (Kochrel, 1968), thus depleting these natural resources. Several taxa in this text designated as commercially exploited are so indicated because of overcollection by herb and nursery collectors, and wildflower growers.

The list in its present form represents approximately one-fifth of the Tennessee flora and should be considered tentative. New collections will uncover additional plants in need of protection while other species will be found to be more common than on our current information indicates. Rare plants are known to occur in each of the State's major geographic provinces with higher frequencies in the southern, eastern, and northern Highland Rim, the Cumberland Plateau, and the Unaka Mountains. The patterns of distribution indicate that these taxa often occur together in unique landscape features which provide sound justification for permanent preservation of these unique habitats. Interested persons across the State who find these plants are encouraged to notify staff of the University of Tennessee and/or the Herbarium of Vanderbilt University. Such information contributes not only to this project but also to State and regional projects underway. However, care should be taken to protect new populations, and collections should not be made from currently known localities.

It is also hoped that this publication will generate educational programs, lobbying, public awareness, and general concern for this significant portion of Tennessee's natural heritage.

POSSIBLY EXTINCTED

ASTERACEAE
Aster pinaster Poir.—Davidson, Johnson
Eupatorium leucocarpum (DC.) T. E. & G.—Davidson
Helianthus spathulatus (Nut.) Woolson occurring
Helianthus glaucophyllus D. M. Smith.—Johnson
Ratibida columnifera (Woot. & Stand.—Davidson, Richards (1965)—Redbud subsecundiflora Pursh—Montgomery
Teriogonotha heliandesolus L.—Knox
CAMPAULACAE
Lobelia amanda Michx.—Polk
CAPRIFOLIACEAE
Limnanthes borealis L.—Sevier
CARYOPHYLLACEAE
Parnassia floridana Michx.—Nutt—Cumberland
Silene ovalis Pursh—Cooke, Marion
CRASSULACEAE
Sedum rosea (L.) Scopoli—Carter, Gattinger (1901)
CYPERACEAE
Cladium mariscus (Muhl.) Torr.—Middle Tennessee, Sharp, Tipton
Dicksonia luidiai Bailey—Coffee, Gattinger (1901)
Rhynchospora capitellata (Ehr.) S. C. Carter—Coffee
Rhynchospora ruthvenii (Michx. Ell.—Van Buren, Warren
Rhynchospora wrightii B. M. B. Gould—Bledsoe
Schrebera atrovirens (Br.) Stone—Bledsoe
ERIACEAE
Kocherostoma L. var. caroliniana (Small) Fern.—Johnson
EUPHORBIAE
Cotula campestris E. A. Smith—Coffee, Farmer & Thomas (1949)
FABACEAE
Aplectana robiniae—Davidson, Montgomery
Cistus latiusculus DC.—Blount
HYPERICACEAE
Hypericum majus (Gray) Brit.—Blount
DODECATHEON
Joelcina melosperma Gay & Durrieus—Rutherford
LAMIANACEAE
Prenanthes vermiculata (Michx.) Pers.—Fentress
Scutellaria montana Chapman—Hamilton
LILIACEAE
Malathion hybridum Walt.—Sevier, Unicoi
Mtkcuma virgina (L.) L.—Lincoln
Zigadenus densiflorus (Des.) F. & C.—Coffe
LYCOPODIACEAE
Lycopodium uncinatum L.—Blount
MYRTACEAE
Comptonia pergrata (L.) Coulter—Scott
ORCHIDACEAE
Listera Pace Lindl.—Coffee
Liparis undulata Wieg.—Johnson, Sevier
Platanthera barbata (Nut.) Gray ex Beck—Coffee
POACEAE
Tritium spicata (L.) Richter var. mollis (Michx.) Brat—Carter, Lamar-Scriver (1904)
NYCTAGINACEAE
Polygala clintonii Michx.—Blount
PONTEDERIACEAE
Helophyllum spicatum (Sw.) Wild.—Davidson, Montgomery
*Certain taxa for which we have seen no specimens are cited from the literature.