

# LONG ISLAND BOTANICAL SOCIETY NEWSLETTER

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## GUIDE TO THE GOLDENRODS OF LONG ISLAND, NEW YORK

by,

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**INTRODUCTION.** Goldenrods were formally included in the genus *Solidago* by Carl Linnaeus in 1753. The scientific name is from the Latin *solidus*, meaning "to make whole or-strengthen;" probably in reference to medicinal properties described by ancient herbalists. In 1818 Thomas Nuttall first split out a distinct subgroup of goldenrods (which included species with resin-dots on narrow leaves and a flat-topped inflorescence), and proposed a new genus *Euthamia*. Traditionally, taxonomists have included *Euthamia* as a distinct section within *Solidago*; recently, however, many synantherologists (botanists who study composites, including goldenrods) recognize the distinct genus *Euthamia*.

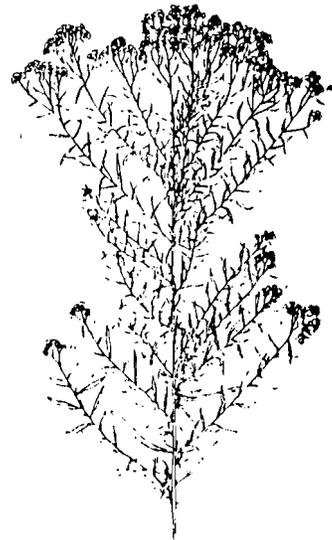
The genus *Solidago* consists of about 100 species in North America, 28 species in New York, and 19 species on Long Island. The genus *Euthamia* consists of about 6 species in North America and 3 species in New York, all of which have been reported from Long Island. Only four species of *Solidago* and only one species of *Euthamia* occur in all of Europe, north Africa, and western Asia.

The goldenrods as a group are easy to recognize, and some species are also fairly distinctive. But most species are separated by technical characteristics (because features of the leaves, stems, and flowers are very variable). Often making identification difficult. Even professional botanists do not agree on just how many species there are nor how they may be separated. Moreover, some species certainly hybridize, yielding intermediate plants which add to the confusion. Intergeneric hybrids between *Solidago* and *Aster* also occur and have been placed in the genus *Solidaster* (from the names of the parents).

The following guide to goldenrods has been prepared to help the interested amateur identify the 22 species reported from Long Island. The key is not overly technical. For example, there are over 40 different terms that describe the different types of plant hairs, the key uses only one: "hairy". Conversely, the term "glabrous" technically refers to a surface devoid of all vestiture; the key uses the non-technical term "smooth." Unfortunately, the technical terms are more accurate than the colloquial ones, and therefore the key is imprecise in several areas.

The key is based upon several traditional keys found in major manuals of North America flora. Therefore, after the key to L.I. goldenrods is mastered, the transition to technical keys should be relatively easy.

Since a few unavoidable technical terms are used in the key (inflorescence, involucre, petiole, etc.) reference to other texts and manuals is recommended.



*Euthamia gymnospermoides* [= *Solidago g.*]  
a very rare goldenrod from L.I., not recently  
observed. Illustration from Fisher (1988).

## PROGRAMS

See back of newsletter for information.

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## KEY TO THE GROUPS OF SPECIES

1. Inflorescences axillary:  
flower heads in clusters from axils  
of ordinary foliage leaves..... Group I
2. Inflorescence thyrsoid:  
flower heads in erect, compact, terminal  
clusters; inflorescence cylindrical, longer  
than broad; the branches of the inflorescence  
never in curved, one-sided clusters..... Group II
3. Inflorescence paniculiform:  
flower heads produced on one side only  
of a spreading, usually recurved branch..... Group III
4. Inflorescence corymbiform:  
flower heads forming a flat-topped or  
convex-topped, inflorescence, resembling  
a candelabra or branched candlestick..... Group IV



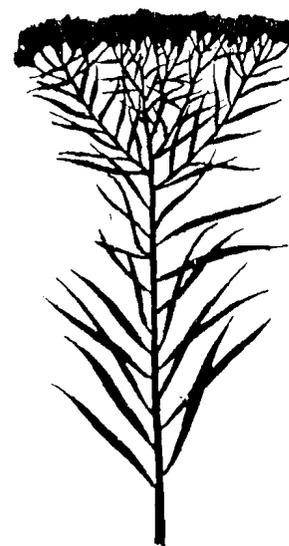
Group I  
Inflorescence



Group II  
Inflorescence



Group III  
Inflorescence



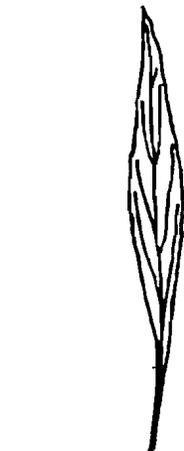
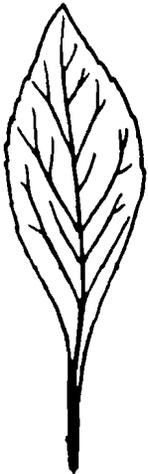
Group IV  
Inflorescence

**GROUP I**

A single species (frequent)..... *S. caesia*

**GROUP II**

- 1. Stem hairy..... 2
- 2. Ray flowers yellow..... 3
  - 3. Stem finely hairy with minute spreading hairs; bracts of involucre very narrow, less than 0.75 mm wide at midlength (frequent)..... *S. puberula*
  - 3. Stem coarsely hairy; bracts of involucre more than 0.75 mm wide at midlength (rare)..... *S. hispida*
- 2. Ray flowers white (frequent)..... *S. bicolor*
- 1. Stem smooth..... 4
  - 4. Lowest leaves narrow, 7-15 times as long as wide; bog plants (infrequent)..... *S. uliginosa*
  - 4. Lowest leaves' broader, less than 7 times as long as wide; plants of upland habitats..... 5
    - 5. Inflorescence very narrow; stem-leaves 5-20 mm wide (very rare)..... *S. erecta*
    - 5. Inflorescence broader; stem-leaves more than 2 cm wide (frequent)..... *S. speciosa*



broad basal leaves  
***S. speciosa***

narrow basal leaves  
***S. uliginosa***

broad inflorescence  
***S. speciosa***

narrow Inflorescence  
***S. erecta***

GROUP III

- 1. Maritime plants with thick, fleshy leaves;  
(frequent)..... *S. sempervirens*
- 1. Plants neither maritime nor with markedly  
fleshy leaves..... 2
  - 2. Leaves mostly basal; stem-leaves  
progressively reduced upwards..... 3
    - 3. Stem minutely hairy (frequent)..... *S. nemoralis*
    - 3. Stem smooth..... 4
      - 4. Stem strongly 4-angled, at least  
below; plants of inland swamps  
and marshes (rare)..... *S. patula*
      - 4. Stem round, sometimes marked  
with fine lines, never strongly  
4-angled..... 5
        - 5. Basal and lower stem-leaves  
gradually tapering to the petiole  
(frequent)..... *S. juncea*
        - 5. Basal and lower stem-leaves  
abruptly contracted to the petiole..... 6
          - 6. Leaves hairy at least on the  
midrib and main veins  
beneath, sometimes across  
one or both surfaces as  
well (infrequent)..... *S. ulmifolia*
          - 6. Leaves smooth, or merely  
a little hairy above (rare)..... *S. arguta*
- 2. Basal leaves mostly smaller than the  
well developed and more crowded middle  
and upper ones..... 7



leaves mostly basal  
reduced upwards



basal leaves smaller  
than the upper ones



leaves gradually tapering  
to the petiole



leaves abruptly contracted  
to the petiole

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GROUP III (continued)

- 7. Leaves with 3 principal longitudinal veins..... 8
  - 8. Stem smooth below the inflorescence (infrequent)..... *S. gigantea*
  - 8. Stem short-hairy, at least above the middle (frequent)..... *S. canadensis*
- 7. Leaves pinnately veined, with 1 principal midvein..... 9
  - 9. Leaves all entire and 1-nerved (frequent)..... *S. odora*
  - 9. At least the principal leaves toothed, with visible lateral veins..... 10
    - 10. Stem hairy (frequent)..... *S. rugosa*
    - 10. Stem smooth..... 11
      - 11. Leaves sessile; swamp plants (very rare)..... *S. elliotii*
      - 11. Leaf blade tapering to a petiole-like base; woodland plants (infrequent)..... *S. ulmifolia*

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GROUP IV

- 1. Stem leaves more than 1 cm wide, pinnately veined (very rare)..... *S. rigida*
- 1. Stem leaves less than 1 cm wide with 1-5 principal longitudinal veins..... 2
  - 2. Leaves 3-5 veined, 4-8 mm wide (frequent)..... *E. graminifolia*
  - 2. Leaves 1-veined or obscurely 3-veined, 2-4 mm wide..... 3
    - 3. Leaves relatively thin and lax, often with axillary fascicles (tiny leaflets in axils of leaves where they join the stem) (frequent)..... *E. tenuifolia*
    - 3. Leaves relatively thick and firm, without axillary fascicles (very rare)..... *E. gymnospermoides*

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## DISCUSSION

The following brief discussion of species and infraspecific taxa includes: scientific name; common synonym, where appropriate; (meaning of specific epithet); common name (s); general habitat preferences; frequency of occurrence, based upon personal observations; general locality of occurrence; optional comments.

1. **Solidago arguta** Ait. (sharp; referring to teeth of leaves), Sharp-leaved Goldenrod; open woods and dry meadows; rare; reported from L.I. by Stanley Smith but no vouchers have been located, no extant populations known.
2. **Solidago bicolor** L. (two-colored), Silver-rod, White Goldenrod; dry open woods; frequent; especially common throughout eastern Suffolk Co.
3. **Solidago caesia** L. (bluish-gray), Blue-stem Goldenrod; rich deciduous or open woods; frequent; especially common along north shore.
4. **Solidago canadensis** L. (Canadian), Canada Goldenrod; moist or dry open places and thin woods; variety *canadensis*, with sparsely hairy stems and leaves with hairs only on the midrib and main veins beneath, is rare on L.I. and is often confused with var. *scabra* and species no. 7; variety *scabra* T. & G. [= *S. altissima* L.], with densely hairy stems and leaves densely hairy across the surface beneath, is abundant throughout all 4 counties.
5. **Solidago elliotii** T. & G. (for its discoverer, Stephen Elliott, 1771-1830), Elliott's Goldenrod; fresh or brackish swamps; rare in N.Y. State; historical collections from Queens, Nassau, and Suffolk Cos., currently known from eastern Suffolk Co.
6. **Solidago erecta** Pursh (erect), Erect Goldenrod; dry woods; rare in New York State, no extant populations currently known from L.I.
7. **Solidago gigantea** Ait. (very large), Late Goldenrod; moist open places; infrequent; currently known from Kings & Suffolk Cos.; (often confused with no. 4).
8. **Solidago hispida** Muhl. (stiffly hairy), Hairy Goldenrod; dry woods and open places; rare; only collected a few times from L.I., not recently observed.
9. **Solidago juncea** Ait. (stiff, like a rush), Early Goldenrod; dry open places and open woods, especially in sandy soil; frequent; more common in Suffolk Co. The first species to bloom, usually begins to flower on July 4th.
10. **Solidago nemoralis** Ait. (of woodland), Gray Goldenrod; dry woods and open places, especially in sandy soil; frequent; throughout all 4 counties.
11. **Solidago odora** Ait. (fragrant), Sweet Goldenrod; dry open woods, especially in sandy soil; frequent; Nassau & Suffolk Cos.
12. **Solidago patula** Muhl. (spreading), Rough-leaved Goldenrod; swamps and wet meadows; rare; only collected a few times from L.I., not recently observed.
13. **Solidago puberula** Nutt. (minutely short-pubescent), Downy Goldenrod; open places, especially in sandy soil; frequent; Queens, Nassau, & Suffolk Cos.
14. **Solidago rigida** L. (stiff), Stiff Goldenrod; dry open places, especially in sandy soil; rare in N.Y. State, only one collection from L.I. (Brooklyn, 1899), not recently observed.
15. **Solidago rugosa** Mill. (wrinkled), Rough-stemmed Goldenrod; various habitats: thickets, borders of woods, roadsides, and open places; frequent. The typical variety *rugosa*, with hairy stems and relatively thin, sharply toothed leaves, is widespread and common; variety *sphagnophila* Graves (Sphagnum-lover), with a smooth stem, occurs in swampy places and is historically known from L.I. but has not been recently observed; subspecies *aspera* (Aiton) Cronq., with thick and firm leaves, is also historically known from L.I. but has not been recently observed. *Solidago x asperula* Desf. is a common hybrid between *S. rugosa* and *S. sempervirens*.

16. **Solidago sempervirens** L. (evergreen). Seaside Goldenrod; saline places along the coast and along highways (L.I. Expressway) that are salted in winter; frequent; throughout all 4 counties. Variety *mexicana* (L.) Fern., with smaller heads and narrower leaves, is historically known from L.I., but has not been recently observed.
17. **Solidago speciosa** Nutt. (showy), Showy Goldenrod; open fields and woodland borders; frequent; reported from all 4 counties.
18. **Solidago uliginosa** Nutt. (of marshes), Bog Goldenrod; wet woods; infrequent; only collected a few times from L.I., not recently observed.
19. **Solidago ulmifolia** Muhl. (elm-leaved), Elm-leaved Goldenrod; woods; infrequent; (often confused with several other species that can have a spreading, elm-branched inflorescence).
20. **Euthamia graminifolia** (L.) Nutt. [= *Solidago graminifolia* (L.) Salisb.], (grass-leaved), Lance-leaved Goldenrod; open, usually moist ground; frequent; throughout all 4 counties.
21. **Euthamia gymnospermoides** Greene [= *Solidago gymnospermoides* (Green) Fern.], (resembling the genus *Gymnosperma*), Great Plains Flat-topped Goldenrod; open sandy places (dry prairies); rare, in N.Y. State, historical collections from Nassau & Suffolk Cos., not recently observed.
22. **Euthamia tenuifolia** (Pursh) Nutt. [= *Solidago tenuifolia* Pursh], (slender-leaved), Slender Fragrant Goldenrod; open sandy places and edges of salt marshes; frequent; throughout all 4 counties.

## L.I.B.S. Field Trips

26 September 1992, 9 a.m. - Shinnecock Hills in Southampton. Eric Lamont will lead this joint trip with the Nature Conservancy (South Fork-Shelter Island Chapter). Shinnecock Hills supports one of New York's last remaining maritime grassland and maritime heathland communities: 'Meet at the north entrance to Southampton Tuckahoe Road. Directions from western Suffolk Co.: take Sunrise Highway (Rte. 27) east over Shinnecock Canal; the highway narrows from 4-lanes to 2-lanes just east of the Lobster Inn; proceed east for about 1.7 miles turn right on Tuckahoe Road, cross the RR tracks and immediately turn right into the parking lot. The walk will probably end about 12 noon. For information contact Eric Lamont at 516-722-5542.

17 October 1992, 10 a.m. - Hook Mountain, Rockland County. Eric Lamont will lead this joint field trip with Greenbrook Sanctuary. Hook Mt., overlooking the Hudson River at Upper Nyack, supports a diverse number of goldenrods, asters, and other fall wildflowers. Meet at the C. W. Post Campus in Old Brookville, East Gate parking area for carpooling at 7:30 a.m. Or meet in the parking lot which is about 0.1-0.2 miles north of the junction of 9W and Old Mountain Road on west side of 9W. Please notify Eric Lamont (516-722-5542) if you plan to attend.

## L.I.B.S. Programs

8 September 1992 - 7:30 pm, Steven Jay Sanford, "NYS's Fish and Wildlife Habitat Protection Programs: Opportunities & Limitations," Uplands Farm Nature Center, Cold Spring Harbor.

This slide lecture discusses the various regulatory programs which DEC uses to safeguard the habitats of fish and wildlife. Steve Sanford is the Regional Manager of the Bureau of Environmental Protection with DEC in Stony Brook.

13 October 1992 - 7:30 pm, Dr. Gordon Tucker, "Natural History of Fishers Island, N.Y.," Uplands Farm Nature Center, Cold Spring Harbor.

The current flora of Fishers Island will be discussed and compared with the 1940 flora published by Charles C. Hanmer. Ecological communities of the Island will also be described and discussed. Gordon Tucker is Senior Scientist (Botany) at the New York State Museum, Albany

**LONG ISLAND BOTANICAL SOCIETY**

Founded: 1986; Incorporated: 1989.

The Long Island Botanical Society is **dedicated** to the **promotion** of field **botany** and a greater understanding of the plants **that** grow wild **on** Long Island, New **York**.

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Membership is open to all, and we welcome any new members. Annual dues are \$10. For membership, make your check payable to LONG ISLAND BOTANICAL SOCIETY and mail to: Lois Lindberg, Membership chairperson, Welwyn Preserve, Crescent Beach Road, Glencove, NY 11542.

**PROGRAMS**

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\*Refreshments start at 7:30 p.m., the program starts about 8:00 p.m.

**LONG ISLAND BOTANICAL SOCIETY**

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