NYFA Newsletter

New York Flora Association - New York State Museum Institute

Steve Young and Laura Lehtonen, Editors

Correspondence and dues to NYFA, 3140 CEC, Albany, NY 12230 **Join $15 - Dues $10/Yr**

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NYFA Resumes Small Grants $$$

The New York Flora Association is again soliciting proposals for small grants to foster field botany in New York State. It is estimated that we will have about $1,500-$2,000 available for grants. Below are some examples of the kinds of projects that NYFA would like to fund:

- Botanical studies of rare plant communities or unusual community types such as the inland salt marshes near Syracuse.
- Botanical surveys of under-studied or under-surveyed areas of the state that are likely to produce many new county records
- Field research of under-studied groups such as lichens or liverworts
- Studies of specific taxa
- Field trips, workshops, or other educational activities
- Invasive plant studies
- Development of botanical tools or software
- Herbarium research on New York State flora

In the past, NYFA grants have funded a study of the West Hills County Park in Suffolk County (Greller and Clemants, NYFA newsletter, Aug, '94); a study of the flora of French Creek Drainage (Douglas Goldman, NYFA Newsletter, June, '96); and software to develop herbarium labels for the the New York Natural Heritage Program.

In addition, NYFA has funded portions of the on-line flora atlas and the NYFA website.

Applicants should be either NYFA members or students. Proposals should be less than five pages long and include: a needs statement, methods to be used, a schedule, a budget, statement of goals, expected products of research, and resume of the applicant(s). Grants will be in the $200-$1,000 range, and can cover equipment, travel expenses, etc. but cannot be used to for salaries. Award winners are expected to write a report for publication in the NYFA Newsletter and deposit high quality specimens in a public herbarium. Email proposals are preferred. Proposals or questions should be sent to **smallgrants@nyflora.org**.

Rediscovery of Spiny Naiad (*Najas marina L.*) in New York

Joseph M. McMullen - Terrestrial Environmental Specialists, Inc., Phoenix, NY

Spiny naiad (*Najas marina L.*) is a state-listed endangered species previously only of historical record in New York. During the summer of 2002 a large colony of *Najas marina* (*Najadaceae*) was discovered by the authors at the Montezuma National Wildlife Refuge (MNWR) in the Town of Tyre, Seneca County. Details of that find and a historical perspective of the species are provided in this article.

Najas marina is an annual, submerged, rooted aquatic vascular plant. As indicated in the thorough account of the species by Stuckey (1985), it has a rather odd distribution and is frequently local. He reports it as distributed locally across the Great Lakes region from New York to Wisconsin and further west in Minnesota and the Dakotas; and in the Gulf Coast areas in Texas and Florida; the West Indies and southwest to Mexico and Central America.

The last verified record of *Najas marina* in New York (see more on page two)

NYFA 2003 Field Trips

See Page 8 for more details!

- **May 24** Bryophtye Workshop, Adirondack old growth forests
- **June 14** Joralemon Woods, Albany Co.
- **June 28** Spring Pond Bog, Franklin Co.
- **August 9** Altona Flat Rock and Gadway Sandstone Pavement Barrens, Clinton Co.
- **September 6** Hudson Highlands including Round Hill & Moodna Creek, Orange Co.

Inside this issue:

was a 1948 Cayuga County collection of Clausen (NYNHP data). It was historically known from Onondaga, Cayuga, Seneca, Wayne, and Monroe counties in the central portion of the state (NYFA 1990). These historical populations represent the northeastern extent of the species in North America. It occurs in no other state in the northeast U.S.

Najas marina was first discovered in New York in 1864 growing in Onondaga Lake by Judge George W. Clinton (son of Governor DeWitt Clinton and one of the first State Botanists). Clinton's original citation is as follows: *"Naias major, Allioni. In the Onondaga Lake, and in the mouth of a stream and pools on the beach of the lake at Liverpool, Onondaga County, September 1864. G.W.C"* (Clinton 1865). His records and other original distributional history information for New York are discussed in Fernald (1923).

The Rev. John Paine quickly added additional records in Onondaga Lake. In Paine (1865), he states *"Naias major, Allioni. Borders of Onondaga Lake. Discovered by G. W. Clinton, in October 1864, growing in a stream emptying into the lake near Liverpool. It abounds, however, in the lake in water ten to twenty-five feet deep; most luxuriantly along the edge of a sudden descent of the bottom, at a distance from shore."* He further references a few locations from Florida and states *"The above habitats, with our own are the only stations of this plant known on the American continent."*

From these initial New York findings, there were a series of additions to the distributional record in the late 1800s and early 1900s. These findings were mostly from the northern portion of the Finger Lakes region and the area around Rochester. Locations include: Irondequoit Bay, Monroe County (originally in 1865 by Booth (as reported by Fernald 1923), and later by Beckwith and McCauley 1896, and Beckwith *et al.* 1917); Seneca River near Savannah, Wayne County (Peck 1874); Black Lake and foot of Cayuga Lake, Cayuga and Seneca? counties (Dudley 1886); Tully Lake, Onondaga County (an 1895 report in Goodrich 1912); Canoga marshes, Duck Lake, and Crusoe Lake, Cayuga County (Weigand and Eames 1926); Mendon Ponds, Monroe County (Clausen 1940); and eventually Clausen's 1948 record from Cayuga County.

As noted by Stuckey (1985), the recent records of the species in New York are scarce. Between 1923 and 1936, Clausen (1936) reports that no new findings were made for the species in the eastern United States, north of Florida. There are some potentially valid reports of the species unsubstantiated by voucher specimens. These include the report from the MNWR, Seneca County by Cowardin (1965), and potential findings by Rawinski from the northern end of Cayuga Lake (Stuckey 1985). No other recent records or reports are known for the state.

Although the NYNHP's last reported record was that of Clausen, a September 15, 1981 collection was made by Tom Rawinski in Cayuga Lake, across from Canoga Marshes, Seneca Falls, Seneca County. This collection went unnoticed by the NYNHP because the specimens were not deposited in a New York herbarium, although they were deposited at the Gray Herbarium (T. Weldy, *pers. com.*).

From a habitat standpoint, *Najas marina* is a species traditionally known from brackish, saline, subsaline, or alkaline waters of ponds, lakes, and marshes (Stuckey 1985, Crow and Hellquist 2000, Haynes 2000). Faust and Roberts (1983) report that it occurred in central New York in saline portions of Onondaga Lake and marshes in association with several halophytic species.

Water depths reported for *Najas marina* populations varies. Paine (1865) noted it abounding in Onondaga Lake in ten to twenty feet of water. However, our more recent records are from shallow, quiet water, usually 2 to 3 feet in depth. Substrate types are reported to be muddy or sandy.

The currently discovered population from the MNWR, Seneca County may be from the same area originally reported by Dudley (1886), and the more recent report of Cowardin (1965). This large population was found growing in shallow, quiet water on a substrate of muck. Summer water depth was 0.4 to 0.6 meters. The species occurred in a dense aquatic bed; which included associated species of coontail (*Ceratophyllum demersum*), sago pondweed (*Coleogeton pectinatum*), bladderwort (*Utricularia vulgaris*), duckweed (*Lemna minor* and *L. trisulca*), and milfoil (*Myriophyllum* sp.).

Najas marina is obviously a rare species of sporadic distribution in the northeastern United States. Its habitat requirements likely include a narrow range of conditions that may be negatively influenced by man's manipulation. Saline, subsaline, and alkaline habitats in areas of limited disturbance where historical populations occurred should be further searched for this interesting aquatic species.

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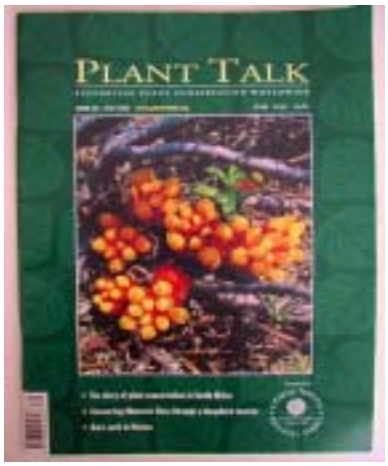

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Eleocharis aestuum (Cyperaceae) in New York

Arthur Haines, 441 Dead River Road, Bowdoin, ME 04287
arthurhaines@gwi.net http://arthur_haines.tripod.com

The *Eleocharis ovata* (Roth) Roemer & J.A. Schultes complex is a small group of hydrophytic spikesedges. Members of the complex can be found in a wide variety of open, wetland plant communities (excluding deepwater and saline systems). The annual, cespitose habit combined with smooth, biconvex achenes crowned by dark, compressed tubercles mark the group. Tremendous taxonomic confusion has surrounded forms of the *E. ovata* complex with reduced or obsolete perianth bristles. This confusion has been the result of environmentally modified character states and cryptic morphology (i.e., possession of few characters on which to base theories of identity and relationship). This note summarizes the taxonomic history of the recently described *E. aestuum* A. Haines, provides updated information for identification, and summarizes known occurrences in New York.

TAXONOMIC HISTORY

Among the earlier reports of *Eleocharis aestuum* from New York was Svenson (1939; Figure 1). Svenson reported the species from the Hudson River Valley, unfortunately using the name *E. diandra* Wright (a separate, globally restricted species). *E. diandra* was described from the Connecticut River (Wright 1883) and differs from *E. aestuum* in tubercle and floral scale morphology as well as habitat (see below). Both species share the character state of reduced or obsolete, smooth perianth bristles (in contrast to the well formed, minutely retrorse-barbellate bristles of *E. ovata*). Based on this single character (perianth bristle stature), *E. aestuum* and *E. diandra* were united in the literature under the latter name for many years.

Figure 1. Habit of *Eleocharis aestuum* from the mouth of the Roeliff Jansen Kill, New York.

Svenson (1939) considered *E. aestuum* (under the name *E. diandra*) conspecific with *E. ovata*, as both of taxa had bifid stigmas, two stamens per flower, and tubercles less than ⅔ the width of the achene body. He later changed his mind after observing a mixed population from the Roeliff Jansen Kill in New York that contained both *E. aestuum* and *E. obtusa* (Willd.) J.A. Schultes (Svenson 1953). The variation he observed led him to believe that a full range of intermediate morphologies existed between *E. aestuum* and *E. obtusa* and that they should be united. From that point forward, Svenson placed the name *E. diandra* in the synonomy of *E. obtusa*. Later review of those same specimens by Hines (1975) and myself (Haines 2001) do not show any intermediacy.

Hines (1975) revised the *E. ovata* complex in his monograph on the group. He was first to note that material referred to as *E. diandra* consisted of more than one species. One of these taxa had very short tubercles, pointed and keeled floral scales, and grew in non-tidal habitats (*E. diandra*, in the strict sense). The other taxon had relatively taller (though still short) tubercles, blunt and un-keeled floral scales, and grew in fresh tidal habitats. This latter species he called *E. pallidostachys* D.M. Hines, in reference to the pale floral scales. Though he annotated specimens from the east coast using the name *E. pallidostachys*, Hines never published this name and therefore it is a *nomen nudum*. As Hines did not widely publish his findings, most regional field botanists continued to use the name *Eleocharis diandra* incorrectly (i.e., too inclusively). Of important note is that Hines' concept of *E. pallidostachys* included multiple taxa. He relied exclusively on pale floral scales to define *E. pallidostachys*. This means that he ignored perianth bristle stature, tubercle width, stamen number, style number, etc. (all critical characters in this complex). Therefore, his concept of *E. pallidostachys*, as evidenced from specimens cited in his thesis, included *E. obtusa* and *E. ovata* (as well as *E. aestuum*). In fact, the type he selected for *E. pallidostachys* (*Hines 6835* MICH) is *E. obtusa* var. *peasei* Svenson.

Gleason and Cronquist (1991) appeared to put the situation to rest when *Eleocharis diandra* was included in *E. ovata* as an intertidal ecotype. However, this treatment is incorrect as *E. diandra* does not occur in tidal communities (though *E. aestuum* does, still without a valid name at this time).

During preparation of the *Eleocharis* contribution to the *Flora of North America* (Smith *et al.* 2002), it was realized that a still unnamed spikesedge required an effective and validly published name. Haines (2001) provided the name *E. aestuum* A. Haines for the distinctive fresh tidal species, designating a specimen from the Roeliff Jansen Kill as the type. Though he realized that perianth bristle stature was an important defining criterion, Haines still relied heavily of floral scale coloration, noting that style and stamen number, as well as tubercle width was variable. Though he selected an appropriate type, at least one of his paratypes was *E. obtusa* var. *peasei* (this a form of *E. obtusa* with reduced perianth bristles).

Now we come to present day. Further field and herbarium study, as well as a fresh look at type specimens, has revealed some interesting facts. First, floral scale coloration in the *Eleocharis ovata* complex is largely modified by environment. Most interior collections of *E. obstusa* and *E. ovata* have pale brown to red-brown or purple-brown floral scales (the midrib ranging from brown to green). Tidal populations of these same species (which are quite rare) show very pale, somewhat translucent floral scales. Re-examination of specimens of *E. aestuum* from the Kennebec River drainage shows that specimens from further upstream have relatively more brown and red pigmentation in the floral scales than collections from downstream (i.e., the greater the tidal fluctuation, the less pigmented the scales are).

As alluded to above, it was realized that *Eleocharis aestuum* could be confused with *E. obtusa* var. *peasei* (as had been done in the diagnosis). The two can be separated by style and stamen number and tubercle width (see identification key).

It is also now realized that *Eleocharis aestuum* is not entirely restricted to fresh tidal river shores. Two collections are known from interior lakes, both are impounded water bodies with altered hydrology. One collection is from Vermont (*Gilman 2K158.5* VT!) and the second is from Minnesota (*Moore and Moore 11294* GH!; the type locality of *E. ovata* var *aphanactis* Moore). There has also been a global range extension of *E. aestuum* to the St. Lawrence River, Quebec (*Fernald 2510* GH!).

IDENTIFICATION AND ECOLOGY

Eleocharis ovata is a relatively northern spikesedge, in the east extending as far south as Pennsylvania and a disjunct occurrence in Tennessee. It is rare throughout the eastern United States, including New England and New York, most commonly found on river shores and lake borders, particularly in high pH bedrock regions. It is extremely rare in the intertidal zone—I have seen one collection from the Hudson River and possibly two collections from the Delaware River. It is identified by well-formed perianth bristles (i.e., minutely retrorse-barbellate and exceeding the combined length of the achene and tubercle), flowers with bifid stigmas and two stamens, and narrow but tall tubercles mostly 0.3–0.5 mm high (Figure 2). The floral scales vary from rounded to pointed and keeled at the apex.

Figures 2 (left), 3 (middle), and 4 (right). Achenes of *Eleocharis ovata* complex, scale bar=0.3 mm. 1—*E. ovata*. 2—*E. aestuum*. 3—*E. diandra*.

Eleocharis aestuum is certainly closely related to *E. ovata* and shares a number of characteristics, including stigma and stamen number and tubercle width. *Eleocharis aestuum* is largely confined to the eastern seaboard, occurring from Quebec south to Pennsylvania. It almost always occurs on fresh tidal river shores, though rare collections are from interior lakes with altered hydrology. The substrate of these habitats ranges from mud to silt and sand. The most obvious difference between *E. aestuum* and *E. ovata* is the perianth bristle stature—the bristles are absent or number 2–4, are smooth, and much shorter than the achene body in *E. aestuum* (Figure 3). Also, the tubercles are shorter than in *E. ovata*, measuring mostly 0.2–0.3 mm tall. The floral scales are always rounded and unkeeled at apex.

Eleocharis diandra is another taxon closely related to *E. ovata*, though it is the most globally restricted of the three discussed here. It occurs only in New York and New England in the world and is known from less than 15 total sites. It is primarily found on wet sand shores of moderate to large rivers, though in New York it also occurs on the eastern shores of Oneida Lake (extremely rare there now). *Eleocharis diandra*, similar to *E. aestuum*, has obsolete or very reduced and smooth perianth bristles (Figure 4). It has very short tubercles, mostly 0.1–0.2 mm tall. The floral scales are pointed and keeled at the apex.

In summary, *Eleocharis ovata* can be seen to consist of a wide-ranging core species from which two specialized races have separated. Both of the segregates differ from *E. ovata* in perianth bristle stature and tubercle height and occur over a narrower range of habitats. Various authors have debated the importance of perianth bristle stature in defining taxa within this complex. It is clear that perianth bristle morphology is correlated with other taxonomically important characters and is used for defining taxa in other sedge species (Schuyler 1972, Strong 1994; see Schuyler and Ferren (1975) for a possible explanation of the advantage of sedge fruits with reduced perianth bristles in intertidal habitats). Both *E. obtusa* and *E. engelmannii* Steud. also have forms with obsolete or reduced perianth bristles. However, in those taxa, the reduced bristle forms do not appear to have other obvious distinctions nor reduced environmentally amplitude. For example, the reduced bristle form of *E. obtusa* (var. *peasei*) is equally distributed on fresh tidal rivers and unaltered interior lakes. Therefore, recognition of this taxon as a variety is appropriate.

DISTRIBUTION OF *ELEOCHARIS AESTUUM* IN NEW YORK

Based on the herbarium and field surveys of Hines (1975) and myself (Haines 2001), *Eleocharis aestuum* in New York appears to be confined to the fresh tidal shores of the Hudson River and tributaries. Historical collections show that *E. aestuum* is known from ca. 16 km of river, from Hudson downstream to Saugerties. The one population that is known extant is that at the mouth of the Roeliff Jansen Kill, observed in 2001 by myself and again in 2003 by David Werier (personal communication). *Eleocharis aestuum* is to be expected along a larger stretch of the Hudson River. It should be sought along undeveloped shorelines with gentle slope at mid- to high-tide level in the intertidal zone.

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IDENTIFICATION KEY TO THE SPECIES OF THE *ELEOCHARIS OVATA* COMPLEX IN THE NORTHEASTERN UNITED STATES

1a. Perianth bristles numbering 5–7 per achene, retrorsely-barbellate, exceeding the length of the achene body (and often the tubercle as well)
- **2a**. Tubercles 0.5–0.9 mm wide, 0.65–0.97 times as wide as the achene; flowers usually with 3 stamens
  - **3a**. Styles usually trifid; tubercles 0.2–0.4 mm tall, 0.29–0.67 times as tall as wide; perianth bristles usually exceeding tubercle in length; spikes commonly ovoid . . . . . ***E. obtusa* var. *obtusa***
  - **3b**. Styles bifid or sometimes trifid; tubercles 0.12–0.23 mm tall, 0.1–0.38 times as tall as wide; perianth bristles often not exceeding the tubercle; spikes commonly ellipsoid to ellipsoid-cylindric . . . . . ***E. engelmanii* var. *engelmanii***
- **2b**. Tubercles 0.35–0.5 mm wide, 0.46–0.72 times as wide as the achene; flowers usually with two stamens . . . . . ***E. ovata***

1b. Perianth bristles lacking or, if present, numbering 2–4, smooth, and shorter than the length of the achene body
- **4a**. Tubercles 0.48–0.83 mm wide, 0.65–0.97 times the width of achene; flowers usually with 3 stamens
  - **5a**. Tubercles 0.12–0.23 mm tall, 0.1–0.38 times as tall as wide; styles bifid or sometimes trifid; plants occurring on lake borders and in pools and seepages . . . . . ***E. engelmanii* var. *detonsa***
  - **5b**. Tubercles 0.2–0.4 mm tall, 0.29–0.67 times as tall as wide; styles trifid or sometimes bifid; plants occurring on river shores and lake borders . . . . . ***E. ovata* var. *peasei***
- **4b**. Tubercles 0.24–0.45 mm wide, 0.46–0.68 times the width of the achene; flowers with 2 stamens
  - **6a**. Floral scales acute and somewhat keeled at the apex; tubercles mostly 0.1–0.2 mm tall; perianth bristles absent or up to 0.15 mm long; plants occurring on sand shores, not or only minimally tidal . . . . . ***E. diandra***
  - **6b**. Floral scales rounded and not keeled at the apex; tubercles mostly 0.2–0.3 mm tall; perianth bristles absent or up to 0.45 mm long; plants occurring on sand, silt, or mud shores, usually fresh tidal (rarely on impounded lakes) . . . . . ***E. aestuum***

Development of Herbarium Label-Making Software *

By Troy Weldy, botanist, NY Natural Heritage Program weldy@nynhp.org

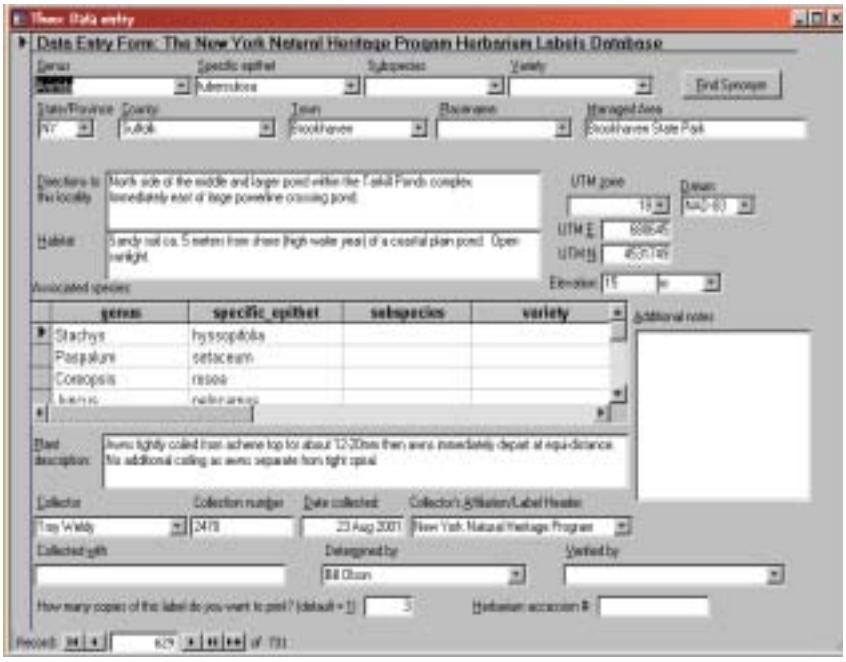
* This project received funding from the NYFA Small Grants program.

Various new tools like GPS units, handheld computers, and digital cameras are becoming more a part of botanists' everyday tools. These tools aid in locating areas and collecting data. One tool that has lagged behind is easy-to-use herbarium label making software. Various options are available for herbarium collection management, but few products have been designed for individual collectors.

For many years, PLABEL has been the herbarium label maker of choice within the NY Natural Heritage Program. This is an excellent MS-DOS program designed at the University of Florida. While this has been a great program, the MS-DOS platform creates a few drawbacks, the biggest of which is no spell checking capability.

In our first move from PLABEL to a Windows-based program, the NY Natural Heritage Program purchased LabelQuest. After testing this unsatisfactory program, we moved back to PLABEL.

The need for a Windows-based herbarium label making program has been great for a number of years. Without a good label-making program, many individuals and organizations have amassed a back-log of herbarium material. To address this need, a small group within the NY Natural Heritage Program began designing an MS-Access database for the purpose of cataloging voucher collections and printing herbarium labels. This process began in January 2002 with the original intent of designing a database/herbarium label-making tool for the personal use of the botanists and ecologists of the NY Natural Heritage Program. As we developed the software, we began to realize that we had something that would have mass appeal within the botanical community. Our focus shifted from developing a database for our program's use to something worth broader distribution.



Theo Data Entry window

In November 2002, Theo, the name chosen for the program, was officially released at a regional Heritage conference held in southern New Jersey. It has also been available via download from the NYFA website. This first release brought about many positive comments, but also some suggestions for additional improvements. These improvements have been incorporated and an updated version has recently been released.

Theo has numerous built-in base plant checklists, including Mitchell's NY checklist, regional checklists from the USDA Plants Database, lichens checklist, and a bryophyte checklist. There is also a user checklist where species not on the base checklist may be entered. We have also included a geographic names database which includes all states/provinces, counties for each state/province, and placenames from the USGS GNIS database. With this structure, once you select a state, your county choices are limited to that state. Likewise, once you select a county, your placename choices are limited to that county. The genus, species epithet, and subspecific names work in a similar manner. You can always deviate from the choices listed as the pre-populated data are only present to speed data entry. Most fields have an auto-fill feature, meaning users need only enter a few characters before the desired name appears. The authorities and family names are automatically populated.

Theo's interface is very easy to use and includes many features beyond simple herbarium label creation. Theo has evolved into a collection management software tool for individual botanical collectors. We have included synonym look-up, customizable data entry setup, streamlined data export, and database maintenance tools. As an herbarium label maker designed by botanists, we have tried to include all of the features that we ourselves wanted to see.

While Theo was designed within MS Access, the end user need not have MS Access to use Theo. The user simply needs a PC computer with Windows 95 or better. Thanks in part to a contribution from the NY Flora Association, the NY Natural Heritage Program is disturbing this software at no charge. You may download Theo from the NY Flora website. Those without MS Access or without a computer with a fast internet collection may request a CD by sending either an e-mail to weldy@nynhp.org or a note to Theo CD Request, NY Natural Heritage Program, 625 Broadway, 5th Floor, Albany, NY 12233-4757.

Theo was developed by Shane Gebauer, Tim Howard, and Troy Weldy, all on staff at the NY Natural Heritage Program. This work was supported by the NY Natural Heritage Program and the NY Flora Association.

New York People / New York Plants

An update of who is doing what across the state

Dr. Cheryld L. Emmons, emmonsc@alfred.edu, is an assistant professor of biology teaching botany at Alfred University. Her research interest is in secondary metabolites of plants, especially those with potential health benefits. Her current projects are with oats and yellow trout lily (potentially antimutagenic). She intends to include more native species with folklore history in future studies. She is also preparing a habitat description for a bird nesting study being conducted in Allegany county.

During this summer she will have one or two students working on an independent field project. They will be estimating the genetic diversity of Eastern Hemlock and American Beech in the region between Wellsville and Hornell (with Alfred between the two) using molecular techniques. They have chosen these two species because of the threat of disease from introduced pests.

Dr. Kerry Barringer, herbarium curator at the Brooklyn Botanic Garden, will soon be publishing his work on the Flora of the Black Rock Forest near Cornwall NY. Since 1990, Brooklyn Botanic Garden has conducted research there. More information about this project can be seen at the web site http://www.bbg.org/sci/blackrock.

Dr. Andrew Greller, retired biology professor at Queens College, is planning to publish a checklist of plants at Caumsett State Park on Long Island and a summary of the vascular plant communities there. Another article, already accepted by the Jour. Torrey Bot. Soc., is one he co-authored with his former grad student/new PhD, **Dr. Maureen Levine**. It is a study of vegetation on disturbed serpentine in Bloodroot Valley, Staten Island.

Over at the New York State Museum: **Chuck Sheviak**, curator of botany, reported on the reorganization of herbarium specimens. For the last three years **Jerry Haller**, a semiretired medical doctor and herbarium volunteer, has been going through all of the specimens of New York folder by folder and bringing plant names up to the current usage based on Dick Mitchell's checklist and the national checklist of John Kartesz. He also searched for type specimens and found over 300. They were able to identify the oldest specimen in the herbarium as a Rafinesque type specimen of *Drosera filiformis* from 1802! He also was able to find the specimens that made up the valuable James Eights Antarctic collection. **Krista Loffredo**, herbarium assistant, followed up Jerry's work and produced a list of name changes made. These were verified by Chuck who settled on the final name under which they would be filed (for example *Crataegus* names were kept and not lumped). Krista then printed new folder labels and replaced old folders when needed. All of the New York folders are now complete and work has begun on the rest of the North American specimens extending Dick Mitchell's concepts outside New York State. Unfortunately Krista will be leaving in June so the remaining work will be slowed. This will also result in the extension of the policy of not accepting new specimens until further notice. **Lori Leonardi**, collections manager, has been working on three genera of liverworts for the Flora of North America project while managing the bryophyte and mycology collections. **Norton Miller**, principal scientist botany, has been studying the late glacial tundra to boreal forest transition sentiments associated with the Hyde Park mastodon discovered in 1999. He has discovered seeds of the arctic species *Saxifraga aizoides*, *Salix herbacea* and *Dryas integrifolia*. This vegetation disap-

NYFA 2003 Field Trip Schedule

May 24th Bryophtye Workshop, Adirondack old growth forests, sites to be determined. Cost $10. (trip leader: Nancy Slack, professional bryologist and botany professor)

June 14 Joralemon Woods, Albany Co. (trip leaders: Susan Brent and Troy Weldy)

Trip co-sponsored with the Capital District Botany Club, we will visit a hot-spot for ferns and spring wildflowers.

June 28 Spring Pond Bog, Franklin Co. (trip leader: Dan Spada)

We have the rare opportunity to explore one of New York's largest peatlands. This 500 acre patterned peatland is a globally rare community with various rare plants including *Carex wiegandii* and *Scheuchzeria palustris*.

August 9 Altona Flat Rock and Gadway Sandstone Pavement Barrens, Clinton Co. (trip leader: Greg Edinger, ecologist)

Visit the unique and globally rare sandstone pavement barrens. This unusual area was formed when glacial till was scoured off the flatrock some 12,000 years ago by a catastrophic flooding event from two nearby glacial lakes.

September 6 Hudson Highlands including Round Hill and Moodna Creek, Orange Co. (trip leaders: Richard Mitchell and Spider Barbour)

After numerous NYFA articles detailing the wonders of the area, Dick and Spider will lead us to their favorite areas. Numerous rare species have been documented by Dick and Spider throughout the Hudson Highlands over the past 10 years.

For more information, visit our website or contact Troy Weldy (e-mail: weldy@nyflora.org or phone: 518-402-8952). Directions and additional information will be provided when you sign-up. All dates are subject to change.

New On The NYFA Net
www.nyflora.org

Old NYFA Newsletters now online

Thanks to the efforts of John Ozard (NYS Department of Environmental Conservation) and Troy Weldy (NY Natural Heritage Program), all back issues of the NYFA Newsletter are now available on line. These are posted on NYFA's website under the Newsletter section. All issues are posted as PDFs. If you are missing previous issues or recently joined NYFA, please visit the website to view these past issues.

From the Editors

We are pleased to have the opportunity to compile this newsletter. It will only continue to serve the membership with your participation. Send us your articles, book reviews, event listings, and suggestions for newsletter features you would like to see. We look forward to hearing from you. The deadline for the next issue is May 16th.

Steve Young & Laura Lehtonen

Future articles include:

The Mycology Program at the NY State Museum
The Status of Ginseng in New York
Forest Pathogens Affecting Woody Plants in NY
More NY People and Plants (feel free to send us a note on your current and future projects)

Test Your Plant Knowledge!

In the next column are four photographs of similar-looking wildflower leaves. Can you match the letters with the following list?

1. ***Hydrastis canadensis*** **goldenseal**

2. ***Petasites palmatus*** **var. *frigidus* sweet coltsfoot**

3. ***Podophyllum peltatum*** **mayapple**

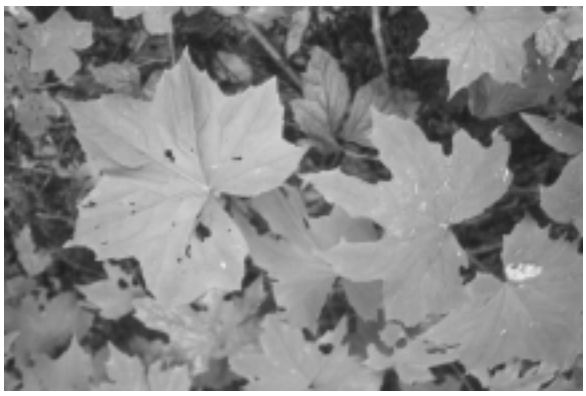
4. ***Hydrophyllum canadense*** **Canada waterleaf**

See back cover for answers.

A

B

C



D

New York Flora Association Membership Form

Your membership expires at the end of year listed on your address. Please keep your dues up to date.

Annual Membership dues: _____ Renewal $10 _____ New Member $15
Additional donation to support NYFA's efforts $_____ **Total** $_____

Name: _____

Address: _____

Address: _____

City: _____

State: _____ Zip Code: _____

Make checks payable to the **New York Flora Association** and mail to:

NY Flora Association
3140 CEC
Albany, NY 12230

How can you make a beautiful plant label like this?

See page 7.

Plants of Suffolk County, New York, USA

***Aristida tuberculosa* Nutt.**

Poaceae SEASIDE THREE-AWN

Town of Brookhaven. Brookhaven State Park. North side of the middle and larger pond within the Tarkill Ponds complex. Immediately east of large powerline crossing pond. Habitat: Sandy soil ca. 5 meters from shore (high water year) of a coastal plain pond. Open sunlight. Associated species: Stachys hyssopifolia, Paspalum setaceum, Coreopsis rosea, Juncus pelocarpus, Hypericum canadense, and Euthamia graminifolia.

UTM zone 18, 680645mE, 4531749mN (NAD-83) Elev: 15 m

Characters: Awns tightly coiled from achene top for about 12-20mm then awns immediately depart at equi-distance. No additional coiling near base.

Troy Weldy # 2470 23 August 2001

Det: Bill Olson

New York Natural Heritage Program

Quiz answers

1. B
2. A
3. D
4. C