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Jack Pine Barrens in New York:

A Story of Fire and Ice --

by Kenneth Adams, SUNY, Plattsburgh

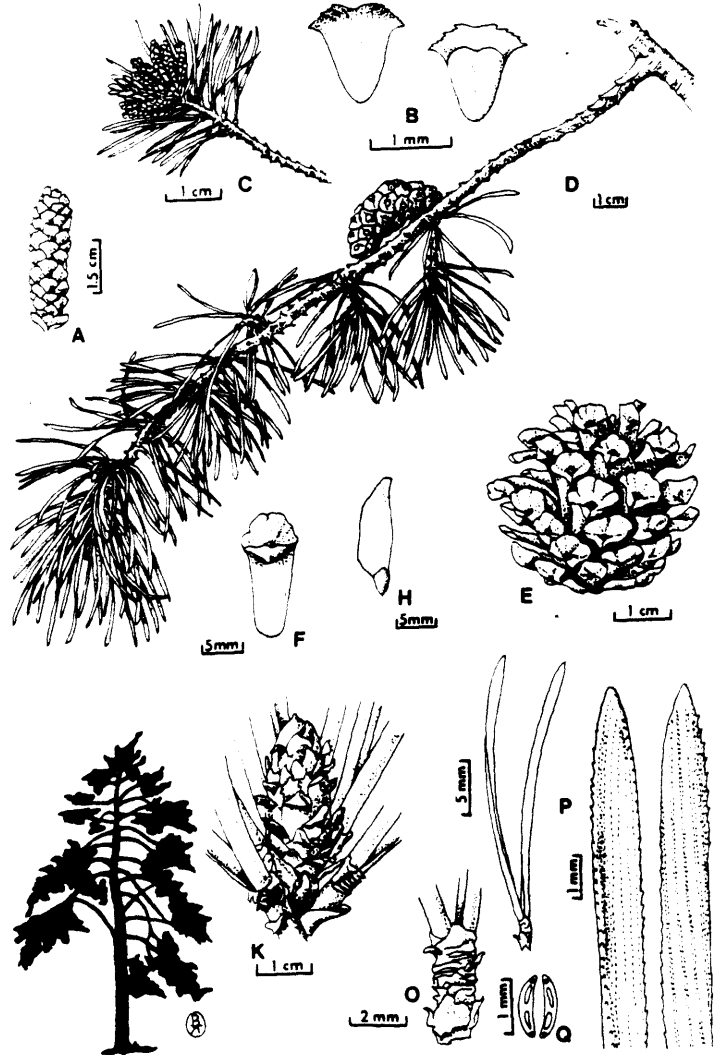
As the last glacier retreated northward about 12,000 years ago, Lake Iroquois, a large meltwater lake, was formed. When an ice dam broke loose near present-day Covey Hill, Quebec, an enormous volume of water was released from the lake, forming a raging river that flowed to the southeast across what is now northern Clinton County, New York. This torrential flow of water removed nearly everything in its path, including soil, cobblestones and boulders, exposing underlying bedrock of Potsdam sandstone. This major glacial meltwater phenomenon created two relatively large sandstone pavement exposures known locally as the "Blackman Rock" and "Flat Rock." These areas became dominated by one of the few boreal tree species that could exist on such nutrient-deficient, droughty sites, jack pine (*Pinus banksiana*).

Jack pine Sandstone Pavement Barrens are considered globally rare by the Natural Heritage Program, since that habitat is known from fewer than 20 sites in the world. The Altona-West Chazy Barrens constitutes one of the largest contiguous jack pine stands in the United States east of Michigan. Almost 1000 hectares of barrens in Altona and West Chazy are owned by the W. H. Miner Agricultural Research Institute, and New York State owns approximately 600 hectares of the barrens adjacent to the Miner Institute Preserve. The Nature Conservancy also owns approximately 325 hectares of the community near Cannon Corners.

The relationship between fire and the regeneration of jack pine is well documented. In addition to stimulating the release of seeds from serotinous cones, fire reduces competition for the shade-intolerant jack pine seedlings, and the ash layer serves to fertilize the seedbed. With an average lifespan of less than 150 years, jack pine requires periodic crown fires to regenerate new, even-aged stands. The fire history of the Clinton County jack pine barrens is not completely documented, but there have been at least four major wildfires since 1900, of which the largest,

in August 1957, burned more than 1000 hectares near the town of Altona.

Fire is also an important environmental factor in the life-histories of other plant species in the jack pine barrens. Ericaceous shrubs such as lowbush blueberry (*Vaccinium angustifolium*) and black huckleberry (*Gaylussacia baccata*) comprise the dominant fire-adapted understory species. Other shrubs include



Jack pine, *Pinus banksiana* Lamb.

black chokeberry (*Aronia melanocarpa*), sweetfern (*Comptonia peregrina*), and sheep laurel (*Kalmia angustifolia*). Herbaceous plants include cow-wheat (*Melampyrum lineare*), bastard-toadflax (*Comandra umbellata*), and moccasin-flower (*Cyripedium acaule*).

Botanical survey work remains to be done within the barrens, especially to complete an inventory of grasses and sedges. For those who enjoy botanizing in mesic and hydric habitats, these too are found in the barrens region. Glacial meltwaters and ensuing rains have carved narrow ravines and chasms in the bedrock, and bogs and fens can be found where drainage is obstructed.

While a catastrophic historical event of considerable magnitude created the sandstone pavement exposures, it is apparently periodic disturbance by fire that has served to maintain the jack pine-heath community. Maintenance of species-composition in the barrens is dependent on periodic disturbance by fire. The ecosystem is so prone to fire that its return as an influence is inevitable. Stewards of the land will be wise to develop fire management plans for these barrens that preserve both the unique species-composition of this rare community and protect the homes and property of local residents.

***Apera interrupta* (L.) Beauv. in New York**

by Edward Cope, L. H. Bailey Hortorium

In spring 1985, I received a grass specimen collected in 1983 by Karl Brooks and Phil Caswell as part of their work on the Catskill flora. The specimen turned out to be *Apera interrupta* (L.) Beauv., a species new to the state at that time. Richard Mitchell (1986) was aware of this in time for the inclusion of this taxon in the New York State checklist of vascular plants. To my knowledge, this species has appeared in only one other locality since that time, in 1987 at a turf grass farm in Saratoga County. The seeds may have been mixed with those of turf-grasses, the same apparent reason for the occurrence of *A. interrupta* at a similar site in Quebec (Solheim and Judiewicz, 1984).

Apera interrupta was earlier known to have been introduced into western North America, in Washington State (as early as 1940: Rogers 752, Ferry County), Utah, Nevada, California, British Columbia, Oregon, Idaho, and Hawaii (Crusick and Brandenburg, 1984). In addition, in the 1980s, the plant was noticed and collected in several midwestern and eastern states and provinces, including Missouri, Wisconsin, Illinois, Ohio, Ontario, Quebec and Massachusetts (Cusick and Brandenburg, 1984; Solheim and Judiewicz, 1984; Grayum and Rohman, 1986). Label data with specimens from Europe and the U. S. housed at the herbarium at the Bailey Hortorium (BH) record a variety of soils, including lime pavement, saline flats, sandy soils, wasteland, rocky flats and even moist



Apera spica-venti (left) and *A. interrupta* (upper right).
Illustrations from Hitchcock's *Manual of the Grasses of the United States*.

stream banks.

Apera is a genus of only three species, all native to Europe and western Asia. The genus has often been included in the closely related grass genus, *Agrostis* (with 220 species), but it is currently recognized by most agrostologists (Clayton and Renvoise, 1986). *Apera spica-venti* (L.) Beauv., is also rather rare in

New York, but more widespread across North America, perhaps due to its earlier introduction in the 1800s [the earliest specimens at the Bailey Hortorium (BH) are from Philadelphia in 1880, near Lansing Michigan in 1896, Washington, D.C. in 1912, Hot Springs and Conway, Arkansas in 1917].

Apera is segregated from *Agrostis* using several characteristics, the most prominent of which is the long, delicate, straight awn (2-5 times as long as the lemma) borne just below the tip of a firm, chartaceous lemma. Other features are a strong two-nerved palea, nearly as long as the lemma, and a rachilla prolonged in back of the palea as a naked bristle. *Agrostis* typically has thinner lemmas without awns or with awns borne at the middle or base of the dorsal lemma surface. These awns are often bent or short and straight. The rachilla is rarely prolonged, and the palea is usually small and nerveless or nonexistent in *Agrostis*.

Apera species are annual, the plants reaching about 50 cm in height, with their culms branched at the base. The blades are flat and only about 2 mm broad, with a 5 mm-long, truncate ligule. The paniced inflorescence can reach 20 cm in length, with the capillary branches ultimately spreading in *A. spica-venti*, but remaining more narrowed in *A. interrupta*. The spikelets are not much more than 2 mm long. Glumes are subequal, the first shorter and narrower, and the lemma is scaberulous with hairs at the callus.

Apera interrupta is similar to *A. spica-venti*, but it can be distinguished from it by close attention to the inflorescence. The panicle of *A. interrupta* is contracted and condensed, although it can diverge somewhat with age. Nearly all the panicle branches bear spikelets to the base. The somewhat "interrupted" look of the inflorescence is caused by the spacing of the branches on the main axis of the panicle. The panicle of *A. spica-venti* spreads widely at maturity, and most of its branches are bare of spikelets in the lower one-fifth to one-third.

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Prenanthes boottii DC., a very rare alpine species, was seen on the NYFA hike to Whiteface Summit

Sixth NYFA Field trip: Adirondacks -- Mt. Whiteface and Silver Lake Swamp

by Robert E. Zaremba.

On our sixth NYFA botanical hike (June 27), we climbed the short trail to the summit of Whiteface Mountain in the High Peaks. Ed Ketchledge led the party of 22, pointing out most of the plants of interest in the mountain spruce fir and alpine meadow communities and discussing the origin, composition and processes maintaining High Peaks communities. Highlights of the tour included observations of: *Prenanthes boottii*, *Empetrum nigrum*, *Lycopodium selago*, *Dryopteris campyloptera*, *Vaccinium boreale*, *Minuartia groenlandica* and *Gentiana linearis*. For many of us, this was our first encounter with many of these species, and the scenic views were spectacular as well. A second stop was made at Silver Lake Swamp,

aa TNC preserve in Black Brook. During a rapid walk through the swamp on a boardwalk, we encountered additional northern species seldom seen in other locations in the state. Debate centered on one mysterious orchid (which turns out to be *Platanthera obtusata*) and several sedges.

It was a great day. Thanks go to Ed Ketchledge for his enthusiasm, teaching skills and willingness to share detailed information, and to Kathy Regan for logistics planning.

NYFA members attending: Joanne Altre, Jane Blanchard, Skip Blanchard, Paul Brach, Steve Clemants, Bob Dirig, Nancy Eldblom, David Hunt, Lori Hunt, Anne Johnson, Ed Ketchledge, Scott LaGreca, Eric Lamont, Dick Mitchell, Norbert Quenzer, Kathy Regan, Mike Renda, Franz Seischab, Doug Schmid, Sally Underwood, Steve Young, and Bob Zarembo.

The following species were seen during the Whiteface Mountain visit. This list was compiled using a base list provided by Ed Ketchledge and field notes from David Hunt:

Species seen during the trip to Whiteface Summit:

Abies balsamea
Achillea millefolium
Agrostis sp.
Alnus viridis ssp. *crispa*
Amelanchier bartramiana
Anaphalis margaritacea
Aralia nudicaulis
Aster acuminatus
Betula cordifolia
Carex debilis var. *rudgei*
Carex brunnescens
Carex scirpoidea
Cerastium fontanum
Clintonia borealis
Coptis trifolia
Cornus canadensis
Danthonia spicata
Deschampsia cespitosa
Dryopteris campyloptera
Empetrum nigrum ssp. *hermaphroditicum*
Equisetum arvense
Fragaria virginiana
Gaultheria hispidula
Gentiana linearis
Hedyotis caerulea
Hieracium sp.
Hierochloa alpina
Juncus trifidus
Kalmia polifolia
Ledum groenlandicum
Leucanthemum vulgare
Lycopodium annotinum var. *pungens*
Lycopodium selago
Maianthemum canadense

Minuartia groenlandica
Nemopanthus mucronatus
Oxalis acetosella
Phegopteris connectilis
Picea mariana
Picea rubens
Plantago major
Poa compressa
Potentilla norvegica
Potentilla tridentata
Prenanthes bootii
Prenanthes trifoliolata
Pteridium aquilinum
Pyrola elliptica
Ranunculus acris
Ribes cynos-bati
Rubus idaeus
Salix uva-ursi
Salix bebbiana
Scirpus cespitosus
Solidago cutleri
Solidago macrophylla
Sorbus americana
Spiraea latifolia
Streptopus roseus
Taraxacum officinale
Trientalis borealis
Vaccinium uliginosum ssp. *pubescens*
Vaccinium boreale
Vaccinium angustifolium
Vaccinium oxycoccus
Veratrum viride
Viburnum cassinoides
Vicia cracca

The following species were seen during the visit to Silver Lake Swamp. This list was derived from a base list from the TNC site master plan and field notes from David Hunt:

Species seen at Silver Lake Swamp, Clinton County:

Abies balsamea
Acer spicatum
Acer saccharum
Acer pensylvanicum
Acer rubrum
Alnus incana ssp. *rugosa*
Apocynum androsaemifolium
Aralia nudicaulis
Aronia melanocarpa
Aster acuminatus
Aster puniceus
Betula alleghaniensis
Betula papyrifera
Carex gracillima
Carex leptalea
Carex trisperma
Carex stricta
Carex intumescens

Carex blanda
Carex disperma
Clintonia borealis
Coptis trifolia
Cornus canadensis
Cypripedium acaule
Dalibarda repens
Dryopteris carthusiana
Dryopteris cristata
Epilobium ciliatum ssp. *glandulosum*
Equisetum sylvaticum
Fraxinus nigra
Galium sp.
Gaultheria procumbens
Gaultheria hispidula
Gaylussacia baccata
Glyceria striata
Hieracium aurantiacum
Ilex verticillata
Kalmia angustifolia
Larix laricina
Ledum groenlandicum
Linnaea borealis
Lonicera canadensis
Luzula multiflora
Lycopodium cf. *obscurum*
Lycopodium lucidulum
Maianthemum canadense
Medeola virginiana
Mitella nuda
Monotropa uniflora
Nemophanthus mucronatus
Oenothera sp.
Onoclea sensibilis
Osmunda cinnamomea
Osmunda regalis
Oxalis acetosella
Phegopteris connectilis
Picea rubens
Picea mariana
Platanthera obtusata
Pteridium aquilinum
Ranunculus acris
Ribes sp.
Rubus pubescens
Salix bebbiana
Sarracenia purpurea
Sisyrinchium sp.
Smilacina trifolia
Sorbus americana
Spiraea latifolia
Thelypteris palustris
Thuja occidentalis
Tiarella cordifolia
Trientalis borealis
Trillium erectum
Trillium undulatum

Tsuga canadensis
Vaccinium myrtilloides
Vaccinium macrocarpon
Viburnum cassinoides
Viburnum trilobum
Viburnum lantanoides
Viola macloskeyi ssp. *pallens*



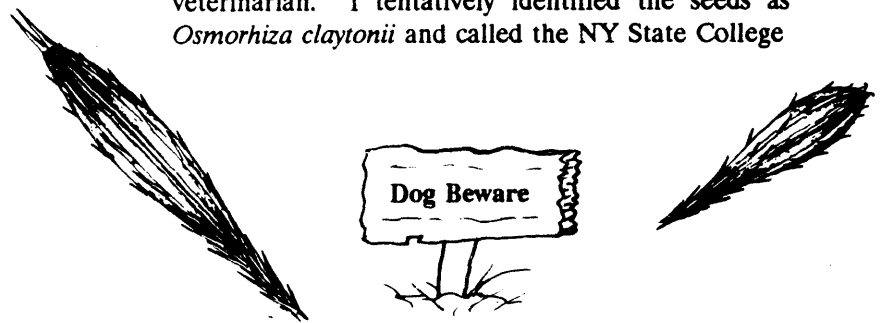
Changes at "The Conservationist" --

by Frank Knight, DEC Environmental Educator.

For three years, or 18 issues of the Department of Environmental Conservation's publication, *The Conservationist* (from Nov/Dec 1986 through Sept/Oct 1989), I had the good fortune of writing the YOUR QUESTIONS ANSWERED column. I was given the opportunity to entertain, inform and hopefully inspire students of nature as I had been in my teen years by the late *Conservationist* Field Editor Paul Kelsey, who answered questions for several decades before his retirement in 1983. Five Rivers Center Director, Alan Mapes, then set the style admirably for the mid-80's column which I was to emulate.

While the questions dealt with the whole range of environmental issues, most concerned curiosities and problems in the readers' immediate or expanded backyards: bird-window encounters, earthworms and pesticides, rodents at the birdfeeder, snow fleas and woollybears. Nearly 25% were botany related: native plant nurseries, American chestnut restoration, rare L.I. pines, corpse plant (*Monotropa uniflora*), road salt-damaged conifers, insect galls, fall foliage, and bat- and bird-capturing burdocks (*Arctium* spp.).

The most memorable of the occasional plant I.D. questions was sent in by a Samoyed dog owner, whose animal's fur and skin were penetrated by a mystery seed at the family's Adirondack camp. Seed-caused festering wounds were a new problem to the dog's veterinarian. I tentatively identified the seeds as *Osmorhiza claytonii* and called the NY State College



of Veterinary Medicine at Cornell University. A staffer checked and reported neither a record of *Osmorhiza* poisoning nor any real interest in the problem. The director of the Liberty Hyde Bailey Hortorium was much more enthusiastic. He confirmed that it was *Osmorhiza*, and that there was no record of previous mechanical poisoning attributed to seeds of plants of this genus.

With the retirement of Art Editor Wayne Trimm in April 1991 after more than three decades and Editor John DuPont in May 1992 after 15 years, we can expect to see some changes in this colorful and interesting publication. However, through freelance articles, letters to the editor or the Q & A page, New York botanists should continue to be able to share information with the magazine's large (approx. 150K) loyal lay-readership.



Vincetoxicum nigrum (L.) Moench
Illustration from Gleason (1952)

Dog-Stranglers of New York: A Look at *Vincetoxicum* Species -- by Scott Sheeley, SUNY, Syracuse

Common names for plants of the genus *Vincetoxicum* (Asclepiadaceae) have included black swallowwort, dog-strangling vine, and simply *Vincetoxicum*. The menacing designation of "dog-strangling vine" is related to the genus name *Cynanchum*, a greek derivation alluding to poisonous qualities of the plants to dogs. However, because *Vincetoxicum* is currently considered the legitimate name of the genus, it may not be appropriate to apply "dog-strangling vine" to these plants. The derivation of "black swallowwort" is obscure, but may be related to the specific epithet of one of the species, *hirundinaria*, which is similar to the name of the swallow family, Hirundinidae.

The most plausible interpretation that I have read for *Vincetoxicum* was in Gray's 1886 synoptical flora of North America: *vincens* "that which serves to bind" and *toxicum* "a poison", i.e., a "poisonous bindweed." I think I'll let someone with more culinary bravery

than myself investigate the accuracy of that designation.

Members of this genus of Asclepiadaceae are cryptophytic, herbaceous perennials which grow to heights above one meter and typically possess a twining, tangled growth form. They produce numerous comose seeds within smooth, narrow follicles. The five-merous flowers lack the deflexed corolla lobes and hooded nectaries of some of the better-known Asclepiadaceae. The five erect or rotate corolla lobes surround a double corona in the genus *Cynanchum* L. and a single corona in *Vincetoxicum* N.M. Wolf (Tutin *et al.*, 1972).

Vincetoxicum spp., in many cases spread through cultivation, have escaped and formed dense monospecific patches in southeastern Canada (McNeill, 1981; Pringle, 1973) and in central New York. The plants tend to occur in calcareous soil on rocky slopes, fencerows, forest edges, and even rocky streambanks. Plants seem to invade and persist in shaded forests although appear to reproduce with less vigor in such areas. The densely-tangled, prolific root masses and the potential for one plant to produce several closely aggregated ramets suggest that the plant reproduces vegetatively. However, with some persistence I have always been able to separate closely associated individuals without finding a vegetative connection between rhizomes. In the field, all the juvenile shoots I have observed have been vegetatively independent of more mature individuals.

Gleason and Cronquist (1991) recognize two northeastern *Vincetoxicum* species: *V. nigrum* (L.) Moench and *V. hirundinaria* Medicus. Tutin *et al.* (1972) recognize three species that fit the descriptions of Gleason and Cronquist (1991): *V. nigrum* (L.) Moench, *V. hirundinaria* Medicus, and *V. rossicum* (Kleoe.) Barb.

Both *V. nigrum* ($2n=44$) and *V. rossicum* ($2n=22$) are dark-flowered species, the former possessing pubescent, dark purple and somewhat more deltoid corolla lobes. *Vincetoxicum rossicum* produces blossoms of a maroon, brownish-wine color which are glabrous, while *V. hirundinaria* possesses glabrous to softly pubescent, yellow corolla lobes (Tutin *et al.*, 1972). Cronquist (pers. com.), however, was suspicious of the long-term validity of the *V. rossicum* description and chose to consider *V. hirundinaria* and species similar to it as a morphologically variable weed complex.

James Pringle of the Royal Botanical Gardens in Ontario, who did some early work on the distribution of the genus in Ontario (1973), uses European nomenclature in this case. He stated that although *V. nigrum* is spreading as an obnoxious weed in southeastern Ontario, it, "unlike *V. rossicum*, appears to remain confined to horticultural areas rather than spreading into successional woods and other such non-

horticultural areas" (Pringle, pers. com.). Mike Penskar, a botanist with the Michigan Natural Features Inventory has told me that even though *V. nigrum* and *V. rossicum* can both be found in Michigan, *V. rossicum* is the more aggressive of the two and is becoming problematic. There have been no reports of a yellow-flowered *Vincetoxicum* there, nor does the yellow-flowered *V. hirundinaria* appear prominent in New York.

Reports of any yellow-flowered *V. hirundinaria* occurring naturally in New York would be greatly appreciated, since evidence for the hybridization of the yellow-flowered and dark-flowered species is lacking. There is also very little information in the English scientific literature that treats the biosystematics and ecology of *V. rossicum* versus *V. hirundinaria*.

The objectives of my master's thesis work on *V. rossicum* are to characterize the demography and reproductive biology of two populations of the plant in central New York. However, a very important part of my work has been the compilation of nomenclatural references and opinions in order to sort through the ambiguity in the scientific literature and botanical manuals.

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IN MEMORIAM

Arthur Cronquist (1919-1992)

by Eric Lamont

There was never a dull moment when travelling with Art Cronquist. If we weren't talking botany, he would be telling jokes or singing; he could handle both difficult pieces and plain doggerels with ease. At a restaurant he would carefully study the menu and then order a hamburger, plain, and water, "lots of water, bring a pitcher." He loved to meet people and converse.

He had written profusely, and his writings profoundly affected the course of botanical thought. He wrote and spoke with authority, as evident in his evolution and classification book: "The book presents

taxonomy as seen by Cronquist... I make no pretense of equal time for opposing views. For other points of view, read other authors" (Cronquist, 1988).

Arthur Cronquist was born on 19 March, 1919, in San Jose, California. He was raised by his mother whose maiden name he kept for his own. As a teenager he collected plants in Utah and Idaho, and discovered several State records which led to his first scientific publication in 1939: "New plant records in Utah and Idaho" (Cronquist, 1939).

In 1938 (at 19) he earned his B.S. degree from Utah State University. He began his undergraduate studies at Idaho State University majoring in range management, but his first botany course (taught by Ray J. Davis) changed all that. One of the course requirements was the preparation of a plant collection. Prof. Davis chose the two top students to study the two largest families: the Poaceae (Grass family) and the Asteraceae (Aster family). To determine who would be assigned each family the two students flipped a coin and Art got the comps. He would eventually become a world authority on the family, and among his many publications was the Compositae treatment in Ray J. Davis' *Flora of Idaho* (Cronquist, 1952).

In 1940 Art married Mabel Allred, and during that same year he received his M.S. degree from Utah State University. He then went on to the University of Minnesota to begin work on his Ph.D. His major professor was Carl Rosendahl, a former student of the German botanist Adolf Engler. Rosendahl and Cronquist would later co-author "The goldenrods of Minnesota" and "The asters of Minnesota."

In 1943, while still working on his doctorate, Art accepted a position at the New York Botanical Garden. For one year he worked half-time on the tropical family Simaroubaceae and half-time on his dissertation, "Revision of the North American species of *Erigeron*, north of Mexico" (Cronquist, 1947). After defending his doctoral dissertation in 1944, Art continued working another two years at NYBG. However, he did not want to pursue a career in neotropical botany (which is what NYBG had in mind); so in 1946 he accepted the position of Assistant Professor of botany at the Univ. of Georgia.

Arthur Cronquist excelled at teaching. He wrote two college textbooks on botany; both went through two editions and one was translated into two foreign languages. His botany courses were always field-oriented and some of his "field trips" covered over 5,000 miles in three weeks time. His door was always open to students (and anyone else), and he never hesitated to assist students in the field. I traveled with him as my major professor to Utah, Canada, New England, and the southern Appalachian Mountains. I probably learned more botany in his pick-up truck than in any graduate level course.

After teaching two years at Georgia, he accepted the position of Assistant Professor at Washington State University. In 1951, he spent a year in Brussels, with his wife and two children, working on the flora of the Belgian Congo for the Belgian Government.

After an absence of almost five years, Art returned to the N. Y. Botanical Garden where he remained for the next 40 years. One of his first tasks was the treatment on Compositae for The New Britton and Brown Illustrated Flora. Other major taxonomic treatments (authored or co-authored) include:

1952. Compositae. In: Flora of Idaho.

1955-1969. Vascular Plants of the Pacific Northwest. Five volumes.

1960. Senecioneae. In: Illustrated flora of the Pacific states.

1963. Manual of Vascular Plants of Northeastern United States and Adjacent Canada. Edition 1.

1971. Compositae. In: Flora of the Galapagos Islands.

1972-present. Intermountain Flora. Vascular plants of the Intermountain West. Six volumes.

1973. Flora of the Pacific Northwest.

1980. Vascular Flora of the Southeastern United States. Volume 1. Asteraceae.

1991. Manual of Vascular Plants, etc. (ed. 2)

The general system of classification of flowering plants was in a moribund condition when Art published his early taxonomic works. The popular, but archaic system of Engler and Prantl no longer reflected current evolutionary thought. In the 1950's Art started to publish some of his thoughts on a new system of angiosperm classification. These thoughts culminated in his magnum opus, *An Integrated System of Classification of Flowering Plants*; currently the most widely used system of classification in North America. Some of his other publications on the general system of classification include:

1955. Phylogeny and taxonomy of the Compositae.

1957. Outline of a new system of families and orders of dicotyledons.

1960. The divisions of classes of plants.

1963. The taxonomic significance of evolutionary parallelism.

1964. The old systematics.

1965. The status of the general system of classification of flowering plants.

1968. The evolution and classification of flowering plants. (ed. 1) 396 pp.

1969. On the relationship between taxonomy and evolution.

1973. Chemical plant taxonomy: A generalist's view of a promising specialty.

1976. The taxonomic significance of the structure of plant proteins: a classical taxonomist's view.

1977. On the taxonomic significance of secondary metabolites in angiosperms.

1981. An Integrated System of Classification of Flowering Plants. 1262 pp.

1987. A botanical critique of cladism.

1988. The Evolution and Classification of Flowering Plants. (ed. 2) 555 pp.

It was a great privilege to have Art Cronquist as a friend and teacher. He will be sorely missed by all who knew him.

SUNSET

by Mabel Allred Cronquist

I know he's dead
But 'twas not he who, draped in silk and net,
They lowered deep into the narrow grave
And dropped the flowers on.

He was a man
Whose very voice was strong with fire and steel.
No silk for him, no pale and waxy flowers
But oak and granite, ice and questing winds
The restless ocean's roll, the tempst's strength
More god than man to me.

But now he's gone.
They told their grief to all the listening world.
They gathered around and praised his many deeds
Recalled his words, his power and his skill.
But I wept in the lonely silences
For he was life to me.

In solemn state
They chanted elegies above his form
To glorify his life, as when the sun
Sinks at day's end into his far-off grave
While on his path flare brilliant reds and gold
And beauty never known by day flows through the sky
To mourn Apollo's death.

As sunset comes,
So did they weep, and mark with gilded brush
His every footstep on the paths of life
Until his casket sank into the earth.
Then sunset colors faded from the clouds
To leave them gray and damp with leaden weight.
The deepening shadows come, and all alone
I face the endless night.

New York Natural Heritage Program Botanical Contracts for 1992 --

by Steve Young

This year ten botanists have been contracted by the Heritage Program to survey plants of concern in New York.

- 1) On Long Island, Eric Lamont will be looking for occurrences of *Viburnum dentatum* var. *venosum* on the South Fork and other locations on the eastern end of the island.
- 2) Chris Mangels is searching for *Carex polymorpha*, a rare, federally-listed sedge that is known historically from the southwestern and south-central part of the Long Island.
- 3) Steve Clemants will be surveying the beaches of the South Fork for *Amaranthus pumilus*, recently proposed for threatened status by the U. S. Fish and Wildlife Service.
- 4) In western New York, Al Schotz continues his detailed surveys of exemplary natural sites, where he has already found some new occurrences for that part of the state.
- 5) Anne Johnson, Jerry Jenkins and Tammy Larson are finding plants amid tank tracks and foxholes as part of the survey of Fort Drum in northern New York.
- 6) Ken Dean is carrying out a study in the Mongaup area near Port Jervis, making an inventory of rare plants and communities.
- 7) Brett Engstrom is looking for rare plants along Lake Champlain.
- 8) Edith Schrott is inventorying rare plants and communities in Zoar Valley (Cattaraugus County) and the Hanging Bog area (Allegany County).
- 9) Bob Wesley is doing plant work on wildlife refuges in St. Lawrence and Jefferson Counties.
- 10) This spring, Laurie Lyons-Swift completed her contract with Heritage to transcribe label data from the rest of the plant species listed as SH (those known only from historical records in the state) that were lacking from our database. Once these records are entered, all species actively being tracked by Heritage will be represented in our database.

A Partial List of New York State Graduate Student Projects in Botany.

A number of graduate programs in New York focus on plants and plant community issues. In the interest of sharing information and highlighting botanical work in New York, we offer the following partial list of graduate student projects that focus on New York State botany:

Sandy Bonanno. M.S. student, SUNY ESF. Advisor: Don Leopold. Plant communities of Lake Ontario's

eastern barrier dune system and response to recreational disturbance.

Anthony R. Brach. Ph.D. candidate, SUNY ESF. Advisor: Dudley Rynal. The growth and tissue nutrient response of *Dryopteris intermedia* and *Dennstaedtia punctilobula* to nitrogen fertilization and altered irradiance in northern hardwood forest ecosystems.

Andrew Fisher. Ph.D. candidate, SUNY ESF. Advisor: Don Leopold. Spatial patterns of vegetation and environmental variables during succession in abandoned agricultural wetlands (i.e. mucklands) of varying ages since abandonment.

Andra Leimanis. M.S. student, SUNY ESF. Advisor: Don Leopold. Habitat requirements of the threatened spreading globeflower (*Trollius laxus* ssp. *laxus*).

Irene Mackun. Ph.D. candidate, SUNY ESF. Advisor: Dudley Rynal and Don Leopold. The influence of watershed liming on wetland community composition, and the interspecific competition and tissue chemistry of wetland shrubs and sedges in an Adirondack watershed.

Janet Mattox. M.S. student, Bard College. Advisor: Charles Sheviak. Wetland vascular flora of the Albany Pinebush - a historical comparison.

Gregory McGee. M.S. student, SUNY ESF. Advisor: Don Leopold. The effects of prescribed fire on the understory community composition of transitional oak-northern hardwood forests of south-central NY.

Yude Pan. Ph.D. candidate, SUNY ESF. Advisor: Dudley Raynal. The influences of age, climate, and silvicultural treatments on bolewood allocation in plantation-grown red pine.

Greg Podniesinski. Ph.D. candidate, SUNY ESF. Advisor: Don Leopold. Modelling succession on natural forested and abandoned agricultural wetlands.

Al Schotz. M.S. student, Buffalo State College. Advisor: Javier Penalosa. Floristics of oak openings in Western New York.

Valerie Sharma. M.S. student, Bard College. Advisor: Erik Kiviat. An autecological study of *Mimulus alatus* (sharp-winged monkeyflower) as compared with *Mimulus ringens* (common monkeyflower).

Scott Sheeley. M.S. student, SUNY ESF. Advisor: Dudley Rynal. The taxonomy, demography, and reproductive biology of the invasive, perennial, *Vincetoxicum rossicum* (Kleoe.) Barb. (*Asclepiadaceae*), and considerations for its control.

Peter Smallidge. Ph.D. candidate, SUNY ESF. Advisor: Don Leopold. The effect of watershed liming on soil chemistry and juvenile red spruce in an Adirondack watershed.

Lisa St. Hilaire. M.S. student SUNY ESF. Advisor: Don Leopold. The role of bryophytes in tree germination and establishment in a forested

minerotrophic peatland in Madison County, NY.

In future issues of the NYFA Newsletter, we will expand this list of student projects and add brief descriptions of other ongoing botanical research projects in New York State. If you are conducting botanical research or monitoring a plant species or community, and would like your work to be known to other botanists, contact: **Bob Zaremba**, TNC NYRO; 518-869-6959 or 1736 Western Avenue, Albany, NY 12203.

NYFA Fall Field Trip: Sept. 12 --

Hudson River Estuary --

The fall NYFA field trip will be held Saturday, Sept. 12, 1992, at North Bay, Tivoli, in northern Dutchess County. We will meet at 9 a.m. at the DEC canoe launch along the road to Cruger's Island of Rt. 9-G in Red Hook. We will see *Plantago cordata*, the giant heartleaf plantain, and estuary beggar-ticks, *Bidens bidentoides*, which have both been considered for federal listing. We will also visit North Bay, where the last known population of a possibly extinct species, *Micranthemum micranthemoides* was seen over 50 years ago. There will be plenty to see and possible discoveries.

Annual Meeting: Sept. 12 --

After the field trip (and dinner and a shower we hope) we will reassemble at 7:30 p.m. at the main entrance of the New York State Museum (Madison Ave. at the south end of the Empire State Plaza), Albany, for our annual meeting. For further information or directions to the field trip, call **Bob Zaremba** at (518) 869-6959.

NYFA Field Study Awards --

In 1992, NYFA made its first two awards in support of botanical work in New York State:

Andrew Greller, Queens College. \$350. Floristic study of a Long Island oak forest containing three taxa new to New York State.

Carol Johnston, Long Island Botanical Society. \$500. An Atlas of ferns and fern allies of Long Island, New York.

NYFA continues to seek proposals for botanical research or floristic surveys with funding up to \$500. Proposals will be accepted until April 1993 with awards announced in May 1993. Send proposals to **Dr. Steven Clements**, Brooklyn Botanical Garden, 1000 Washington Ave., Brooklyn, New York 11225.

The nominated slate of officers for 1993 for NYFA is:

Director	Orland (Skip) Blanchard
Secretary	Gordon Tucker
Treasurer	Breta Sisson

Appointed Officers:

Liaison to the State Museum: Dick Mitchell
Liaison to the Museum Institute: Claire Schmitt

Nominated for seats on the NYFA Council for a three year term ending 1996:

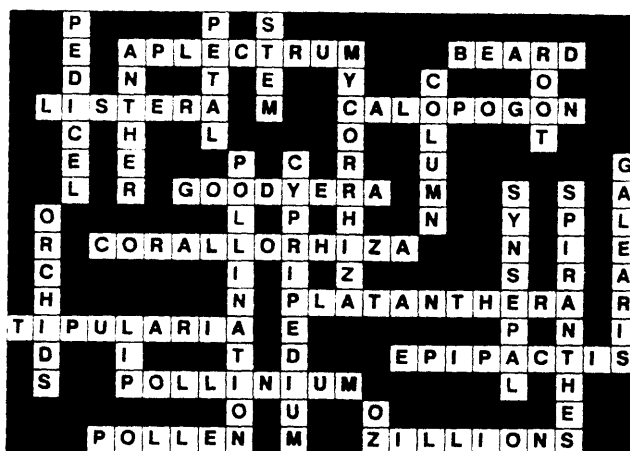
Bob Smith
Les Mehrhoff
Steve Clements
Breta Sisson
Steve Young

Additional nominations for officers and five council member seats will be accepted until the annual meeting on September 12, 1992. Send nominations to **Steven Clements**, Brooklyn Botanic Garden, 1000 Washington Ave, Brooklyn NY 11225. Ballots for the entire NYFA membership will be distributed in the Fall 1992 NYFA Newsletter. Council members and officers will begin their terms in April 1993.

Orchid Crossword Solution

by Chuck Sheviak & Cliff Lamere

Puzzle Published in the 1992 Spring Newsletter



New Publications on New York State Flora and Fauna

Gymnosperm Volume Now Available from the State Museum--

This eighty-page, soft-cover book is the tenth and latest in the series, Contributions to a Flora of New York State. It treats all gymnosperms known to occur naturally or escape cultivation and become naturalized in the State. Each species is illustrated in beautiful detail, including enlarged line-drawings of all parts, a habit sketch and silhouette of the tree or shrub. Edward Cope of Cornell University has gone to great lengths to produce a comprehensive survey of this important tree group that will serve all of northeastern North America. In addition to keys and exhaustive descriptions, infraspecific variation and hybridization within the groups, horticultural forms and economic botany are detailed as well. The extensive bibliography and appendices on insect and fungal pests of conifers make this an invaluable volume to anyone interested in gymnosperms.

To order: send a check for \$8.50 to New York State Museum Publications, 3140 CEC, Albany, NY 12230.

Citation:

Cope, Edward A. 1992. Pinophyta (Gymnosperms) of New York State. *Contr. to a Flora of New York State X. New York State Mus. Bull* 483. 80 pp.

A New Book on Upland Flora of the Adirondacks --

Dr. Michael Kudish, a forestry professor at Paul Smiths College has written a hard-cover book that is a welcome expansion of his earlier works on the flora of the upland area where he has lived, botanized and taught for some time. An accomplished teacher and lecturer, Michael has now produced a beautiful book that incorporates his personal knowledge of the mountainous terrain and flora he knows best. It includes 20 stunning full-page color photographs of Adirondack plants, an annotated checklist of over 500 species, with notes on soils and habitats, and additional chapters on the ecology of this fascinating Adirondack area. Students at Paul Smiths College will find the volume especially useful, and it is a delightful addition to any coffee table as well.

To Order: The Chauncy Press, Silver Lake Rd., Saranac, NY 12981. Price: \$45

Citation:

Kudish, Michael. 1992. *Adirondack Upland Flora: An Ecological Perspective*. The Chauncy Press, Saranac, New York. 320 pp.

A New Booklet on the Butterflies of New York State:

This short, colorful booklet discusses 151 species of butterflies that occur in New York State. Butterfly anatomy and ecology are reviewed with reference to significant sources of additional information. Food plants, nectar sources and habitats are discussed, with suggestions for butterfly research and management.

To order: send \$6.25 payable to Cornell University to Resource Center; 7-8 Business and Technology Park; Cornell U.; Ithaca, New York 14850.

Citation:

Klass, Carolyn and Robert Dirig. 1992. *Learning about Butterflies*. Cornell Cooperative Extension Publications, Ithaca, New York. 36 pp.

-- Dues Information --

As always, dues are \$10.00 per year, due October 1 to pay for the coming year, and payable to The New York State Museum Institute. Our address is on the banner of the newsletter. Please send your dues as early as possible, but even if you forget, just double the amount the next year. People who send incorrect amounts are credited with whatever they sent (in half-year increments). How do I know how much I should send?

Check the envelope this newsletter came in. Just above and to the left of your address you will find a number.

If it is:

93 - you are paid up. (send large cash gifts if you are so-inclined)

92.5 - pay \$5.00

92 - like most of us - pay \$10.00

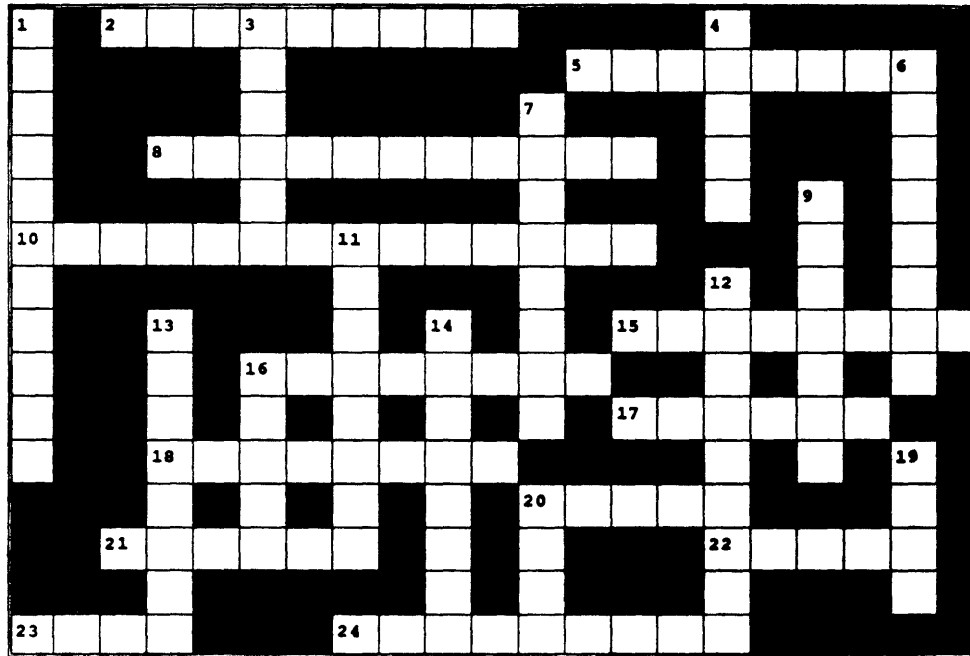
91.5 - pay \$15.00

91 - like too many of us - pay \$20.00

Red Fruits and Seeds

A Crossword by Clifford W. Lamere

The solution for each clue is the scientific name of a genus. The type of propagule of each is shown in parentheses.



ACROSS

- | | |
|-----------------------|---------------------|
| 2. Cranberry | (berry) |
| 5. Cranberry-bush | (drupe) |
| 8. Lily-of-the-valley | (berry) |
| 10. Bearberry | (drupe) |
| 15. Chinese-lantern | (fruiting calyx) |
| 16. Yellow mandarin | (berry) |
| 17. Mountain ash | (berry-like pome) |
| 18. Barberry | (berry) |
| 20. Wildred currant | (berry) |
| 21. Red baneberry | (berry) |
| 22. American yew | (aril & naked seed) |
| 23. Staghorn sumac | (drupe) |
| 24. English hawthorn | (pome) |

DOWN

- | | |
|--------------------------------|--------------------------|
| 1. Mountain holly | (drupe) |
| 3. Bunchberry | (drupe) |
| 4. Raspberry | (aggregate of drupelets) |
| 6. Cucumber-tree | (seed only) |
| 7. Stinking Benjamin | (berry) |
| 9. Climbing nightshade | (berry) |
| 11. Jack-in-the-pulpit | (berry) |
| 12. Golden-seal | (berry) |
| 13. Red or stinking elderberry | (berry) |
| 14. Fly honeysuckle | (berry) |
| 16. Leatherwood | (drupe may be red) |
| 19. Pasture rose | (hip) |
| 20. Sweetbrier | (hip) |