



NATIVE PLANT SOCIETY OF NORTHEASTERN OHIO

Founding Chapter Of

THE OHIO NATIVE PLANT SOCIETY

6 Louise Drive
Chagrin Falls, Ohio 44022
(216) 338-6622

On the Fringe

Volume No. 5

January/February 1987

Number 1

PROGRAMS AND EVENTS:

January 4 (Sunday) Dayton Chapter - 1:30 p.m. - Winter hike through the rich woods and spacious meadows of Caesar's Creek State Park.

January 9 (Friday) Cincinnati Chapter - 8:00 p.m. - Jim Innis shares his Summer 1986 bicycle trip through Newfoundland at the height of wildflower bloom.

January 10 (Saturday) Cincinnati Chapter - Vic Soukop leads a trip through the U. of Cincinnati herbarium. An unusual opportunity.

January 10 (Saturday) Wilderness Center - 2:00 p.m. - At center, best slides of 1986 on plant lore and discoveries.

January 17 (Saturday) 10:30 a.m. - Eagle Creek Nature Preserve - Cross Country Ski Hike.

January 18 (Sunday) Cleveland Chapter - 2:00 p.m. - Solon Library - Tom Yates and Gretta Pallister will give us their highly regarded slide lecture "A. Naturalist Looks at N.E. Ohio, Past and Present". The first part is field notes and slides from the collection of C.M. Shipman, showing our area as it was before development destroyed much of our natural beauty. Tom Yates follows with slides showing what has been saved, and what might be saved in the future.

January 18 (Sunday) 2:00 p.m. - Tinkers Creek State Nature Preserve - Cross Country Ski, or foot hike if no snow, around Seven Ponds Area.

January 19 (Monday) Dayton Chapter - 7:30 p.m. - Cox Arboretum - Best slides of 1986.

January 19 (Monday) Columbus Chapter - 7:30 p.m. - Sharon Woods Metro Park - A program describing the legendary hikes of a remarkable lady, Grandma Gatewood, and the nature plants she knew and commonly used.

January 31 (Saturday) 11:00 a.m. - Kyle Woods - Cross Country Ski.

February 1 (Sunday) Dayton Chapter - 1:30 p.m. - Clifton Gorge hike with winter decorating the cliffs and falls.

February 1 (Sunday) 2:00 p.m. - Jackson Bog and Nature Preserve - Winter Bog Walk.

February 8 (Sunday) 2:00 p.m. - Tinkers Creek State Nature Preserve - Midwinter hike in search of signs that animals leave along trails.

February 13 (Friday) - Cincinnati Chapter - Slide lecture "Spring in the Smokies."

February 14 (Saturday) Wilderness Center - 2:00 p.m. - Program on Vermont flowers plus a presentation on vitality in plant life.

February 14 (Saturday) - Cleveland Chapter - 1:00 p.m. - Cleveland Museum of Natural History - Don Dean presents a class: "Lower Plants Are Living Things". Registration Limited. Cost \$5.00. Biology of lower plants: mosses, ferns, algae, liverworts.

February 14 (Saturday) - 10:30 a.m. - Eagle Creek State Nature Preserve - A walk around preserve in search of animal activity in winter.

February 16 (Monday) - Dayton Chapter - 7:30 p.m. - Bogs and ferns of Ohio slide show by Guy Denny.

February 16 (Monday) - Columbus Chapter - 7:30 p.m. - Sharon Woods Metro Park - Prairie Relics and Restorations, a lecture on Columbus Metro Parks searches for remnant population of native prairies, and the techniques of tall grass prairie restoration.

February 28 (Saturday) - Columbus Chapter - 10:00 a.m. - Field trip to S.E. Ohio in search of small evergreen plants and spectacular ice formations.

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|------------------|------------------|------------------------|------|
| Athens | - Ingrid Chorba | - 614/592-2543 | Eve. |
| Cleveland | - Tom Sampliner | - 216/932-3720 | Eve. |
| Cincinnati | - Jim Innis | - 513/385-0670 | Eve. |
| Columbus | - Jim Stahl | - 614/882-5084 | Eve. |
| Dayton | - Ellen Fox | - 513/897-8139 | Eve. |
| Toledo Organizer | - Denise Gehring | - 419/535-3058 | Work |
| Wild. Center | - Bobbie Lucas | * * * * * 216-644-7682 | Eve. |

BRUCE PENINSULA BOTANICAL TRIP - Friday, June 19, 1987 thru Sunday, June 28, 1987.

Four nights at Wildwood Lodge near Red Bay - the remainder of the time at Tobermory Lodge at the end of the peninsula. See nearly 22 species of orchids, a special day for ferns, boat trip to Flowerpot Inland. **Cost: \$325.00** American based on group size and exchange rate. Limit - 25 persons. **January 20th for deadline for \$50.00 deposit.** Call Tom Sampliner: 216/932-3720 evenings.

EDITOR'S NOTE:

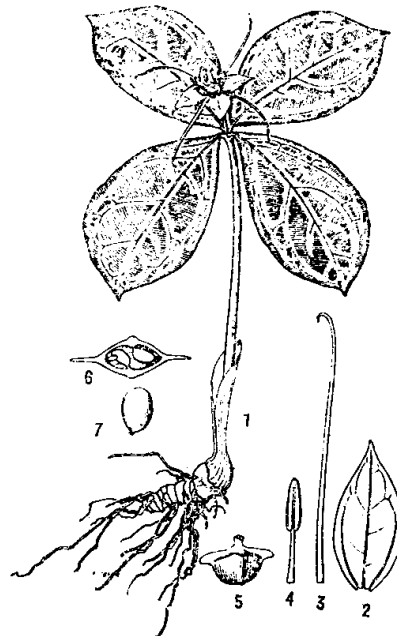
Vic Soukup is Associate Curator of the Herbarium at the University of Cincinnati. He writes of his fascinating experience while traveling in China, as well as his collecting adventures. He is widely known as an expert on orchids and chemistry and genetics of plants.

TRILLIACEAE: COLLECTING SPECIMENS IN YUNNAN, CHINA

For eight years I have been carrying on systematic chemotaxonomic studies in Trilliaceae, the family that includes **Trillium** and **Paris**. **Trillium** occurs in North America and eastern Asia while **Paris**, with the exception of one species wide spread throughout Europe and one other narrowly endemic in the Caucasus Mts., is restricted to Asia from the Himalayas to Siberia. There are about fifty-five species in Trilliaceae. The center of variation of **Trillium** is in the southern Smoky Mts. while that of **Paris** is in Yunnan in southwestern China.

My chemotaxonomic studies have involved the determination of (1) leaf hydrocarbon profiles, (2) compounds responsible for floral fragrances, and (3) fatty acid profiles of the seeds and of the seed elaiosomes. They were undertaken to provide data which might be useful in defining species and/or species groups and ultimately, in conjunction with other data, in construction of a comprehensive phylogeny of Trilliaceae. Because the morphologies of **Trillium** and **Paris** are so simple, difficulties occasionally arise in the determination of individual specimens. The chemical data, it seemed, might also be useful in helping to resolve these difficulties.

In order to conduct the chemical studies it was necessary to collect a large number of the required specimens. This has involved making several extended trips every spring to all the various areas where **Trillium** grow in North America. Fortunately, because of the latitudinal variation in the U.S., it is possible to collect specimens from mid-February in northern Florida and central, coastal California to mid-June in northern Michigan



Paris luquanensis H. Li, sp. nov.

and Minnesota. In this manner it was possible to collect specimens of each species over most of its range. It also permitted sampling some populations in successive years. Over 1000 **Trillium** leaf specimens (one leaf per plant from each of about six to ten plants in an extensive colony) were collected and analyzed to determine the percentages of the various saturated, straight chain, aliphatic hydrocarbons present in the waxy cuticular layer. In 1979 a month was spent collecting **Trillium** and **Paris** specimens in Japan and Taiwan. The leaf hydrocarbon profiles of these were also determined.

Even before going to Japan and Taiwan it had been my intention eventually to go to China in order to study and collect **Paris**, and to that end I began a correspondence with Dr. T. Tang of the Chinese Academy in hopes that I would be able to persuade him to officially invite me (the only condition under which plant collecting by a Westerner may legally be done in China). However, after four years of alternately raised hopes and deep despair, I met Dr. Wu, Director of the Kunming Institute of Botany (now retired) when he was a guest speaker at the Annual Systematics Symposium at the Missouri Botanical Garden. Dr. Wu recommended that I begin a correspondence with Dr. H. Li, the foremost expert on **Paris** in China. After three years of correspondence and exchange of specimens and data we were able to arrange a meeting. Dr. Li visited me in spring 1985 and was then able to arrange to have the Chinese Academy invite me to come to Yunnan for almost three weeks of intensive field work in spring 1986.

It was with great anticipation then that I deplaned in Kunming on May 24 after my direct flight from Hong Kong. Customs proved to be a minor hassle since I had brought four TI solar-powered, scientific hand calculators to give as gifts to various people at the Institute. I learned that I would have to pay a very sizeable duty unless I chose instead to give the calculators as a group directly to the Institute instead of to individuals. Needless to say I chose to give the calculators to the Institute. Later, in order to be allowed to leave the country, I had to give the customs service a letter from the Director of the Institute stating that he had indeed received the calculators.

As soon as I had cleared customs and had paid for my almost four weeks of room and board, we drove off for the Kunming Institute which is located in a suburb on the northeast side of the city. Because the airport is on the south side, this meant we had to cross the city. Traffic was fierce. The motorized part consisted in large part of buses and trucks with some tractors and a few small cars. Mostly though, it consisted of pedestrians and bicyclists each jockeying for positions to enable them to move faster through the crowd. Then there were the animals — cows, oxen, water buffalo, horses, pigs (lots of pigs), goats, sheep, and family and stray dogs — usually herded along in small groups. I have searched for a better description of the apparent chaos than the one which first came to me that day but to no avail. It still seemed like two groups of skiers moving toward each other on opposing slalom courses **in which the gates are continually moving**. Moving pedestrians are regularly passed within one or two

inches, without flinching, by vehicles moving at 30 mph. Yet I never saw an accident happen.

My room in the Institute dormitory was comfortable, and as I was to learn later, large, by Chinese standards. It had a private bath. The morning of my first day at the Institute was spent touring the **Paris** Garden where plants of **Paris** species from various parts of China are being cultivated and where various methods to speed propagation are being studied. Like **Trillium**, **Paris** normally requires 8 - 12 years to reach blooming size from seed sowing. At the University of Cincinnati we have been developing tissue culture methods to speed propagation of **Trillium** species. The details of these methods are being made available to the Chinese to employ in their study of **Paris** propagation. The reasons for this activity surrounding **Paris** are not altruistic. The rhizomes of **Paris** species may well be the most widely used botanical medicines in China since they are used not only for human ailments but also for pigs.

In the afternoon we took a combination sightseeing, collecting trip to West Hill, a wooded mountain on the outskirts of Kunming. There are several Buddhist shrines on West Hill and for that reason mature forest trees are still to be found there. A small fee is charged to allow visitors to walk around on West Hill. We saw the Chinese walking there from five miles away and the trails were very crowded with people who had come here to enjoy the natural scenery or to experience the religious atmosphere.

Early the next morning we departed from Kunming via the Burma Road to search for **Paris** species in the western and northwestern parts of Yunnan. We were going first to Lijiang which is about 380 miles northwest of Kunming and then to Dali (Tali) which is about 295 miles about due west of Kunming. Our party consisted of Dr. H. Li, two undergraduate students who would assist with collecting and pressing, our driver, and myself. Our vehicle was a Toyota Hiace truck, the back of which was filled with cases of drinks (beer and a kind of orange soda), some food, our clothes and other gear, and most importantly, presses and pressing materials to handle collected specimens. It seemed as if every cubic inch of space was full.

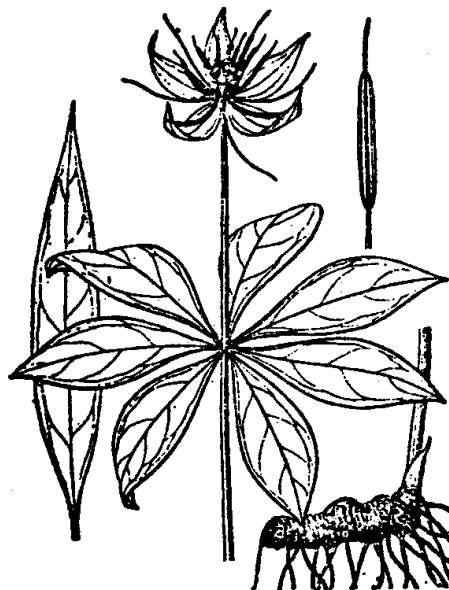
The truck did not provide a particularly comfortable ride. Leg space was inadequate and the slick vinyl seats made for sliding around as the driver maneuvered in tight city traffic, or followed the contours of hills or rivers in the mountainous countryside. I'm certain that jet lag contributed to my discomfort because on the return drive three weeks later, the journey was much more pleasant, though still not a picnic.

The condition of the roads was generally not a problem since they were paved and of a quality comparable to secondary federal or state highways in the U.S. Most of the central and northwestern parts of Yunnan lie on a high plateau with average elevation about 2100 meters. The road regularly ascended and descended, reaching 3000 meters or higher. Our first day of travel covered 295 miles and took 10½ hours. On the second day we drove only 180 miles but

it still took six hours. That brought us in mid-afternoon to our destination of Lijiang which sits on a plain at 2250 meters surrounded by mountains. The largest of these, Yulongxue Shan (The Dragon Snow Mt.) at 5596 meters (over 18,000 feet) is an imposing massif about 12 miles north of Lijiang. The Chinese claim it to be the farthest south mountain in the northern hemisphere to have glaciers. It is not a beautiful mountain like Mt. McKinley, in Alaska, for example. Also although it is only 2000 feet lower than Mt. McKinley, it is not nearly as tall as our mountain because Mt. McKinley sits on a plain only 1500 feet high while the Dragon Snow Mt. sits on a 10,500 foot high plateau. Nevertheless, it gave me great pleasure to see it looming above the roof tops as I opened the door of my room in the guest house each morning.

There were two briefly disturbing experiences, one on the first day's drive and the second soon after reaching Lijiang. As we were driving around curves in the mountains in an area with regenerating forest, I heard an automatic weapon being fired ahead, and almost immediately we encountered a man with a sub-machine gun pointed into the low woods. He was accompanied by a woman and two young children. In response to my excited question of "What's going on?", the unperturbed attitude and reply of "Oh, he's hunting", made it apparent this was not an unusual incident. The next day after we had reached Lijiang, Dr. Li and I walked to the City Park, which because it is a Buddhist Shrine, has some nice mature trees. Just as we had about reached the Park gate, a man with a rifle jumped out of a car and ran toward one of the near trees, the upper branches of which projected well out over the street. His eyes scanned the branches at least 70 feet overhead for his prey but no shots were fired on this occasion.

Our first full day in Lijiang was spent collecting miscellaneous specimens as we toured the city of about 110,000 population. The old section, with small houses, shops tightly bunched together, and its narrow dirt streets, is certainly picturesque, but not pretty. The modern side of the city, where our guest house was located, has larger buildings in the utility style and broad, paved or cut-stone streets. Whatever



Paris thibetica Frauch.

one may think about Chinese politics, it is my opinion that the government is doing a good job, at least in Yunnan, to put a decent roof over everyone's head. Probably over 25% of all buildings, dwelling and others, which I saw have been built in the last ten years or are under construction at this time. While the Chinese use much ceramic ware, green or fired, in their building constructions, framing is still mostly wood. And what an effect this unprecedented need for wood has had (is having) on the landscape! In a country which had already cut over a large portion of its arable land to enable production of food to feed the teeming masses, this new push is eliminating the last vestiges of mature forests. These remaining forests are usually above 3500 meters and on steep slopes or in inaccessible gullies. Reforestation is being practiced but is lagging. Where one sees trees, they are usually regenerating forest, usually **Pinus yunnanensis**, about 8 - 15 feet tall. And even these trees have all their lower limbs stripped off to provide fuel for cooking. Because of the mild climate throughout most of the Yunnan plateau, resulting in only occasional dips below freezing temperatures, home heating is not practiced.

During the next nine days we made daily excursions into the mountains surrounding Lijiang. We went first to Wen-Bi-Fong which lies to the west of the Dragon Snow Mt. where I collected my first plants of **Paris (Mairei and polyphylla v. yunnanensis)**. On several other occasions we collected on the east lower slopes of the Snow Mt. itself, up to about 3500 meters. We also worked our way north and east of the Snow Mt. along some of the larger rivers. We always found plants of **Paris** species but they were always only the same two although we should have been able to find three or four others in addition.

Paris plants were never abundant and in some cases were downright scarce. It had been my understanding that Dr. Li was taking me to locations where **Paris** was a dominant member of the herbaceous flora. When I queried her on why the plants were so scarce rather than abundant like the **Trillium** which she had seen in the Smoky Mts. in 1985, her reply was, "You should have been here four years ago". That statement pretty well summarizes what has been going on and I was to hear it repeated several other times during the trip. **Paris** species, because of their uses in folk medicine, are disappearing like the passenger pigeon as the peasants, to make a few cents, dig out the plants. In the shops where botanical medicines are sold one can find gunny sacks full of rhizomes, each containing perhaps 250 pounds of the product. Multiply that figure by the number of such shops in China and it is indeed amazing that any plants of **Paris** remain in the wild.

We, of course, found and collected many other interesting plants in this area. In a very open forest in almost full sun below the Dragon Snow Mt. at about 3000 meters, we found three species of **Roscoea (chamaeleon, cautleoides, and yunnanensis)**, low growing plants of the Zingiberaceae (Ginger Family) with large orchid-like flowers. They were growing here with **Incarvillea delavayi**, the so-called hardy gloxinia. All of these are hardy in southern Ohio but might fare better in northern Ohio near the lake where summer temperatures are

cooler.

On another hike we found an extensive colony of ladyslipper orchids. There were about 40 plants of **Cypripedium flavum**, a tall growing species with pale cream to lemon yellow slipper lip, sometimes spotted with deep maroon spots. The petals and dorsal sepal were either pale cream to yellow or overlaid with a deep maroon suffusion. There were also many plants of the deep purplish red wine-flowered **C. thibeticum** which has been reduced by some to **C. macranthum**, but which is unlike any **C. macranthum** plants I have seen in Japan or Taiwan. A third species in this mixed group **C. margaritaceum**, was represented by only one specimen which unfortunately had been stepped on. We found other orchids in this vicinity; several nice patches of **Calanthe tricarinata**, which is hardy in southern Ohio, and in an area of sheltered rock outcrops, the crevices were crowded with the expanding leaves of **Pleione yunnanensis**, the flowers must barely past bloom.

On another day we drove about 40 miles to the small town of Soo-Dee situated on a small bit of flat ground next to the river in the Yangtze River Gorge. The Gorge is about one miles deep here with the river at only 1400 meters elevation, or cut way down into the Yunnan plateau. The last part of the road as it leads to the Gorge and on the descent into the Gorge is narrow, seldom two car widths wide, and has no safety guard rails. The vegetation, includes many introduced weeds and shrubs which are adapted to the aridity of this area. **Opuntia** sp. (beaver tail cacti) were taking over the hillsides and once again I heard, "You should have been here four years ago when these hillsides were covered with mature forest". Dr. Li was unaware of the changes which had occurred since her last visit to the area. Incidentally, a common fern among the rocks near the river was **Adiantum capillus-veneris** which is also native to North America where it reaches central Kentucky.

From Lijiang we drove south to Dali which is on the west shore (near the south end) of Erhai (Ear Lake). After a day of visiting the new provincial botanical garden and taking an extended boat ride with local botanists on the beautiful lake, we again settled into our routine of daily hikes into the mountains in search of **Paris**. These mountains were the Cang Shan (highest peak 4350 meters) which run north-south about 4 miles west of Dali and reach their southern terminus about 20 miles south of the south end of Erhai. There are many places one can ascend and we tried several with little success in finding other **Paris** species (let alone any) although six species are listed for the southern Cang Shan. We always found interesting plants to photograph and collect, one being the Chinese ladies-tresses, **Spiranthes sinensis**, with its pale pinkish-purple flowers. Finally at 3450 meters on the east flank of Lingle Peak (in the Cang Shan) I found two additional **Paris** (**polyphylla** v. **alba** with a white ovary, and **thibetica**, a species in which the another connectives are prolonged beyond the anthers about $1\frac{1}{2}$ cm). They were quite common in this location indicating that the peasants had not yet found this population. Here they grew together along a dry water course on the steep east-facing slope high above extensive

marble mining pits together with several interesting **Smilacina** (Solomon's Plume) species and a small **Corydalis** with large flowers. Just below this location, in a slightly less steep meadow, were gardens full of **Nomocharis pardanthina**, a member of the lily family rather closely allied to **Fritillaria** with large pale white flowers with deep maroon spots and of the tall-growing royal blue **Iris delavayi**.

Our final day in the field was spent exploring an area unfamiliar to Dr. Li in the terminus of the Cang Shan at 2400 meters. Here we found extensive meadows which still had quite a few **Paris polyphylla** v. **yunnanensis** growing among bracken ferns. This was a form with broad (up to 5 mm) petals rather than the usual filiform petals. **P. mairei** was also present but scarce. On a small wet seep-slope with sphagnum which I insisted on exploring, I found **Paris forrestii**, a newly described species. It is quite a striking looking plant with upright pointing petals. It was a new one for Dr. Li, who previously had seen only pressed specimens referable to this species.

As we came down the mountain (it was more nearly a hill here in the terminus) it began to rain lightly but not hard enough to get us very wet before we reached our vehicle. It was a much needed rain. In our three weeks of field work it was the only rain we encountered and by the time it had stopped about dark, almost three inches had fallen. Rain here tends to be somewhat seasonal, coming during well-defined periods and was about seven weeks overdue.

No account of this trip would be complete without at least a mention of the fantastic **Arisaema** (Jack-in-the-Pulpit) species. There are about two dozen species in Yunnan province, of which we found seven. Some have the leaf divided into three leaflets as we know it in our North American species, but some have leaves which are divided verticillately into 15 to 20 leaflets, some with long acuminate tips. In **A. elephas**, which has a red and white striped pulpit, the white colored "jack" is very elongated and usually presented upraised like an elephant trunk.

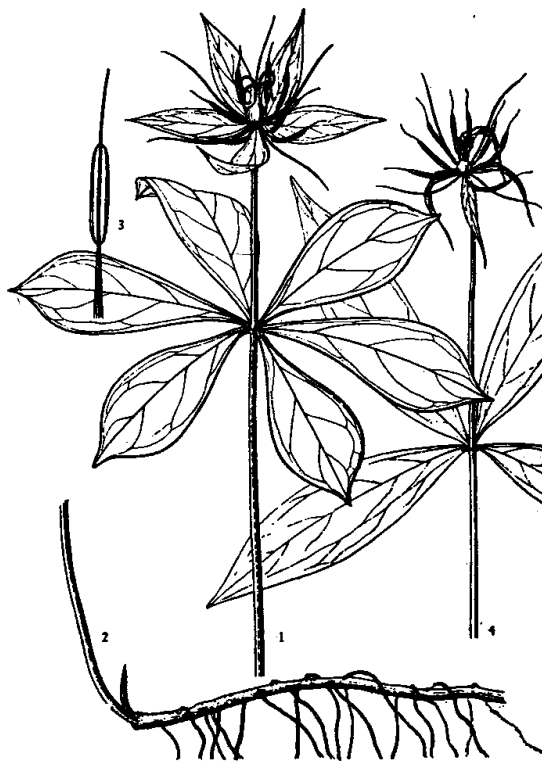
On our return to Kunming I had three days to meet with some of the other botanists and chemists of the Institute and to discuss mutual interests. I also presented, on rather short notice, a lecture on my chemical systematics work to the combined faculties of the Kunming Institute, Yunnan University, and the Kunming Branch of the Chinese Academy. This proved to be somewhat of a tour-de-force in that almost half of the audience was unable to follow English and as a result there were many interruptions and explanations in Chinese.

In retrospect, the trip was an intense bit of botanizing. The daily expeditions into the mountains usually covered 6 to 9 miles of walking which included a substantial climb of 1/4 to almost 3/4 of a mile. Of course, we always drove to the nearest point from which to begin our walk and three times we were able to drive almost right to our collection area. Our returns to base camp were timed to get us there for late supper after which we pressed and identified collected plants till close to midnight.

We collected over 550 specimens of herbaceous and woody plants of which I have received thus far only a few of the monocots (including all of the **Paris**). The rest are scheduled to arrive in early 1987. The term "collected plants" as used throughout this account refers to dried-pressed plants. It is against the law to take live material, plants, or seeds, out of the country. And as previously stated, it is even against the law to take out dried specimens unless they have been collected in a joint program with Chinese scientists. Many great plant collectors like Delavy and Forrest worked in these same areas in the early part of this century. In 1984 botanists from Harvard and the University of California collected in the Cang Shan. It was my privilege to be the first westerner to collect in the Yulongxue Shan since Forrest.

With regard to food, we had a great variety to eat. We regularly had beef, pork, carp, eel, mushrooms and others. In addition to various leaf and stem vegetables, which always were served cooked, we had chu-jo (**Amophophallus riversii**), a relative of Jack-in-the-Pulpit, prepared in various ways. I had a problem with the various breads, baked or steamed, which we had with almost every meal (especially in our trail pack lunches with hard-boiled eggs) because they were so very sweet. In a similar vein, when they served tomato you could only be sure it was a tomato because you couldn't see any red. It was a pile of sugar, literally! I was amazed by the large amounts of hot pepper the Yunnanese put over everything they eat. Based on my sampling of the hot pepper concoction they use, and knowing the strength of our commercial Tobasco Sauce, I would venture that many of the Yunnanese use the equivalent of 1/4 bottle of Tobasco Sauce at each meal.

I ended up collecting or receiving from the collection being cultivated in the **Paris** Garden, nine species of **Paris**. When my **Paris** specimens were received, I set about analyzing their leaf hydrocarbons. The results were exciting. The western Chinese **Paris** species are clearly distinguishable from the Japanese or Taiwanese **Paris** species on the basis of their leaf hydrocarbon profiles. These results will be submitted for publication to Phytochemistry.



Paris verticillata M. Bieb.,

EDITOR'S COLUMN:

The new president has declined to continue the President's Column due to the pressure of his schedule, so I shall continue it as an Editor's Column with news from our Chapter and the State.

December 5th was an unqualified success. Both the dinner and the lecture were sell-outs. Peter Raven struck a chord in many people and is a marvelous human being, generous and down to earth. It may interest those of you who were there to know that near the beginning of the lecture, when the two slides stuck in the projector, the projectionist dropped the whole tray all over the floor. Naturally, in putting them back in they were all out of order, so Raven never knew what slide would come up next. It was a magnificent job of extemporaneous speaking!

How lovely to see so many of your faces that evening. Your notes and comments at the dinner meant a great deal to me. All of you members in the N.E. Ohio Chapter have become as familiar to me as my own family, and indeed you are an extension of it. We have built a lot together, but much remains to be done.

The first Ohio Native Plant Society State Meeting was held at 2:00 p.m. the day of the dinner. Representatives from all the Chapters were there, with the Toledo organizers arriving in time for the dinner. Election of officers was held: President Ann Malmquist, Vice President, Vic Soukup (Cinci), Secretary/Treasurer, Marian Larson (Cleveland). A Constitution Committee was appointed.

The State Society is also sponsoring a trip to the Bruce Peninsula on June 18-25, 1988 at Red Bay Lodge. There will be at least four leaders covering various plant families, plus a leader. Limit is 60 people with each chapter having equal allotment of spaces.

The next meeting of the State Society will be Saturday, April 11 at 11:00 a.m. in Columbus. By then we hope to be able to adopt a contribution and have a better fix on the financing of the newsletter. Perhaps we'll even pinpoint one or two more chapters to add to our numbers.

At the Annual Lecture Representative Bob Clark of Geauga County presented us with the Trillium Bill that Governor Celeste signed into law the day before. Barb Andreas had proposed this project in September of 1983. The wheels of government grind very slowly! But now our Trillium grandiflorum has official status beside the red carnation as an Ohio flower.

Enclosed is your 1987 program. Let's have a better turnout for lectures and field trips this year. If you don't come, you will be missing a lot of fun and a lot of learning.

ENDOWMENT FUND

The Executive Board of the Native Plant Society has established an endowment fund to honor the accomplishments of Ann K. Malmquist and her devotion to the Society. The purpose of the endowment is to fund the \$500 Annual Grant given to deserving Ohio botanists. The interest from the Fund will, when the fund is complete, provide the money for the Annual Grant instead of having to deplete the treasury of operating funds at the end of each year. Many of you have already been contacted, but we would like all the members to be represented in this Fund.

If you have not been personally contacted, you may send your contribution to: Laurel G. block, 7611 Noble Road, Windsor, OH 44099. Otherwise, I will be contacting the entire membership after the first of the year and you may donate at that time.

Laurel G. block

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DUES ARE DUE!

As I told those of you who were at the Dinner: At the next full moon, I will howl outside your bedroom window at 2:00 a.m. in the morning if you don't ante up. Seriously, please know that even if you can't be actively involved; your membership enables us to fund the Annual Grant, publish the newsletter, and carry on other good works. EACH ONE OF YOU IS ESSENTIAL. Please renew at the next highest category you can manage.

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NEW OFFICERS FOR 1987:

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|----------------------|---|----------------|
| President | - | Tom Sampliner |
| Vice President | - | Jim Bissell |
| Secretary | - | Jeanne Furst |
| Treasurer | - | John Augustine |
| At Large | - | Tom Yates |
| | - | Don Dean |
| Ex. Secy. Appointed: | | Ann Malmquist |

Executive Board to be announced in the March newsletter.

U.S. LOSES TROPICAL FORESTS by Erik Van Lennep

In June the U.S. House of Representatives passed \$10 million in aid to help preserve the world's tropical forests. With over 100 acres of rain forest disappearing every minute around the globe, the measure, now under Senate consideration, is badly needed.

Unfortunately, what politicians seem not to have recognized is that thousands of acres of tropical forest on the United States' own soil are in mortal danger as well.

In the U.S. Virgin Islands loss of forest cover has caused streams to dry up, and water must now be either imported from Puerto Rico, or distilled from sea water.

In Puerto Rico some 200,000 acres of the island have been deemed suitable for commercial forestry, including the 28,000-acre Caribbean National Forest, which contains three-fourths of Puerto Rico's virgin timber. This tropical rain forest is home to over 225 native tree species and at least three endangered animal species; the Arctic peregrine falcon, Puerto Rican parrot, and the Puerto Rican boa. The Puerto Rican parrot, whose population since the 1950s has dwindled from 200 to about 16, is found nowhere else on Earth.

A number of International bodies, including the United Nations, have recommended that most of the Caribbean National Forest be declared an "international biosphere preserve," and clearly as such the park offers Puerto Rico and the world far more than the meager revenue expected from timber sales. The National Forest Service's own socioeconomic impact assessments indicate that local employment would not be boosted significantly by new logging.

Meanwhile new roads will be built, increasing access to previously undisturbed areas, and what were once forest habitats will come to be regarded as crops. In an attempt to regulate tree growth, NFS has proposed an integrated pest management system that would bring an arsenal of toxic chemicals to a relatively pristine area.

In Hawaii, the situation is just as grim.

The Hawaiian archipelago is one of the most isolated island systems in the world. After millions of years of evolution, more than 95% of its flowering plants and 90% of its animals are unique to Hawaii. Yet of the 57 species of birds once found in the islands' forests, 23 are now extinct, 23 more are endangered. Eight hundred of Hawaii's estimated 3,000 native plant species are endangered, and 270 are already extinct.

The cause is deforestation, which began when the Polynesians arrived 1,500 years ago, but increased dramatically with the coming of Europeans and Americans in the 18th century.

Now local environmental groups are fighting what they term "a new boom

in deforestation." Most of the destruction takes place on private land, encouraged by federal and state policies that provide tax advantages for conversion of rain forests to cattle pasture. Typically, the trees are chipped and sold to Hawaii Electric Light Co. to fuel power plants.

Last year the Campbell Estate, a large landholder near Hilo, converted 1,000 acres of what University of Hawaii botanist Dieter, Mueller-Dombois described as "the best lowland rain forest left in Hawaii" into pasture and wood chips.

The Campbell Estate is also the site of Hawaii's most controversial development, a 9,000-acre geothermal energy complex located in the Wao Kele O Puna rain forest preserve. The facility is to be developed upon the slopes of Kilauea Volcano.

Environmentalists say the project could wipe out the home of several endangered species. For native Hawaiians, the development would be like drilling for oil in the Vatican's Sistine Chapel.

The big island does not even need the estimated 100 megawatts of new power, so the state and federal governments are funding a \$27 million study on the feasibility of laying the world's longest deep-sea power cable, to send electricity to Oahu. The project is estimated at \$400 million.

Why, one may well ask, are federal and state governments, and by proxy all of us, willing to fund the same destruction on U.S. soils that we discourage overseas?

Van Lennep is a charter member of the San Francisco-based Rain Forest Action Network. This is a reprint dated 9/3/86 from the Cleveland Plain Dealer.

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WILDFLOWER SEEDS AVAILABLE

Gardeners wanting to grow wildflowers or ferns from seeds or spores can select from the more than 150 varieties offered by the New England Wild Flower Society in their 1987 Seed-Sale List.

By offering for sale a large number of native plant seeds, the Society hopes to encourage gardeners to use more wildflowers in their home landscapes. This program is an adjunct of the Society's worldwide botanical garden seed distribution effort.

All requests for seed lists must be received by March 2 because seed sales close March 16. Requests will be filled in the order received.

Send a self-addressed, 39¢ stamped envelope (#10, business size) to Seeds, New England Wild Flower Society/Garden in the Woods, Hemenway Road, Framingham, MA 01701. **No requests for lists will be honored without the stamped envelope.**

Members of the new England Wild Flower Society will **automatically** receive the seed list in January 1987.

1986-87 CHANGES TO OHIO RARE PLANT LIST

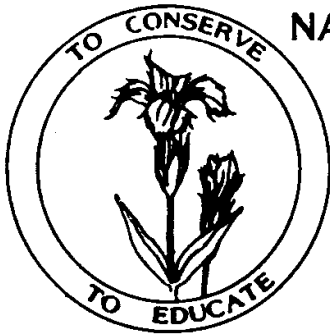
On July 8 the Division of Natural Areas and Preserves amended the administrative rules for the Ohio Endangered Plant Law. Changes include amending the lists of endangered and threatened plants, modifying the definition of "endangered" to delete reference to "100 or fewer individual plants," and strengthening and clarifying the collecting permit requirements. Public comment on the changes was taken at a June 5 public hearing and from written comments through June 6. The rule changes were adopted on July 8, with an effective date of July 18.

The 1984 list of 182 endangered and 185 threatened plants was reduced to 177 endangered and 173 threatened species. Changes include adding 13 species and deleting 17 species from the endangered list. In addition, a nonmenclatural revision subsumes two endangered taxa into one endangered species (Agalinis purpurea var. parviflora). The threatened species list added 17 species and deleted 29. Changes to the presumed extirpated list reduced it from a 1984 total of 104 species to a 1986 total of 100. As of November, 1986, four of the 100 presumed extirpated species have been rediscovered. They are Carex limosa (Mud Sedge) by Barb Andreas, Heteranthera reniformis (Mud-plantain) by Allison Cusick and Marilyn Ortt, Fraxinus tomentosa (Pumpkin Ash) by Stan Stine, and Aureolaria pedicularia var. pedicularia (Woodland Fern-leaf False Foxglove) by Susan Munch. The potentially threatened species list went from 186 species in 1984 to 197 in 1986. Pyrola virens (Green Pyrola) was added to the list of native flora with its discovery in Lucas County, and will undoubtedly be listed as an endangered plant in 1988.

Copies of the general distribution rare species list and new administrative rules are available and will be provided to all chapters of the Ohio Native Plant Society for distribution to interested members.

The 1986 list is the fourth version of the legal list of Ohio endangered and threatened plants. Previous lists were adopted in July, 1980; March, 1982; and April, 1984. In 1980, there were 417 endangered and threatened plants; in 1982, 392 species; and in 1984, 367 species. The 1986 list has 350 species, or 16% fewer species than the 1980 list. This reduction in number of listed species is a credit to the many fine Ohio botanists who have searched for and found additional occurrences of rare Ohio plants. This additional information makes it possible for the Division and The Nature Conservancy to more accurately evaluate potential natural areas and to determine preservation priorities.

The 1986 changes are based upon the Natural Heritage Program data base as of March 1986. A total of 6,963 rare plant occurrences from 1960 to the present were considered. There were 544 occurrences of the 177 proposed endangered plants, 1,685 occurrences of the proposed 173 threatened plants, and 4,736 occurrences of the 197 potentially threatened plants.



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Founding Chapter Of

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Memberships are **DUE FOR RENEWAL** on January 1, 1987. Please continue to support your Society and [REDACTED]. Those of you who send us Sustaining and Patron memberships are enabling us to go on with our worthwhile projects. An active membership just about pays for the newsletter costs. However, economics aside, we need **EACH** of your memberships and each year we get stronger and better. The 1987 Program and Field Trips schedule will be worthwhile.

Please enroll me as a member of the NATIVE PLANT SOCIETY OF NORTHEASTERN OHIO.

- ACTIVE.....\$ 7.50
- FAMILY\$15.00
- SUSTAINING ...\$25.00
- PATRON.....\$50.00



Membership runs from January through December and is not pro-rated.

Make checks payable to: NATIVE PLANT SOCIETY
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