



BIG THICKET ASSOCIATION
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Dr. Robert Egan

Big Thicket Lichens and Dr. Robert Egan, University of Nebraska at Omaha

The origins of Dr. Egan's research on Lichens in the Big Thicket dates to 1975-79 when serving as a faculty member in the Biology Department at Texas A&M. With funding from the National Park Service, he began collecting and documenting lichens in the Big Thicket National Preserve (BTNP) and adjacent areas. In early 1981 Dr. Egan partnered with Dr. Virginia Gordy of Houston to conduct a baseline lichen survey with reference to air pollution applications. In 2006 with financial help from the Big Thicket Association, Dr. Egan returned to the area and served as the Lichen Taxonomic Working Inventory Group leader for the Thicket of Diversity All Taxa Biodiversity Inventory.

With the assistance of graduate students, field collections were conducted in 2006, 2007, 2008, 2010 and 2011. From the Big Thicket National Preserve and adjacent areas Dr. Egan has documented 1089 lichen specimen records representing 137 species in 65 genera. Lichen species catalogued from official units in the BTNP currently total 869 specimens representing 123 species in 59 genera. To date, two species, *Bulbothrix isidiza* and *Pseudoparmelia uleana*, are first reports for the state of Texas.

Dr. Egan has conducted workshops in Saratoga at the BTNP Field Research Station in 2008 and 2010.

A poster was created and presented at the annual meeting of the American Bryological and Lichenological Society in Snowbird, Utah in July 2009.



In the Thicket of Diversity project, Dr. Egan assisted Dr. Rick Hammer's class from Abilene's Hardin Simmons University with lichen presentations, field work and identification in the lab. The group visited the BTNP in May 2011 and 2012 and utilized Saratoga's Field Research Station's dorms, classroom and laboratory.

Homepage for Dr. Robert Egan:
<http://avalon.unomaha.edu/lichens/>

**The Lichen Herbarium at University
Nebraska Omaha**

Egan's personal lichen collection is currently housed in the Biology Department in Allwine Hall 523 at UNO. There are approximately 20,000 named specimens arranged alphabetically by genus and species (as is standard practice in most lichen herbaria). Label data from all specimens reside in a searchable database (FileMaker Pro) and can be accessed on his office computer. This searchable database is also available on the web at <http://symbiota.org/nalichens/>. The collection at UNO also houses the lichen collections of the Nebraska State Museum from UN-L (another approximately 8,000-10,00 specimens). They have also acquired lichen collections from Texas A&M University and Southern Illinois University.



"Recent Literature on Lichens" Database

For over 25+ years Egan has been involved in compiling annotated references for the "Recent Literature on Lichens" articles published quarterly in *The Bryologist*, the journal of the American Bryological and Lichenological Society. Articles 1-100 were done by Dr. William Culberson at Duke University (covering years 1950-1978); He compiled lists 101-143 (1978-1991); and Dr. Theodore Esslinger at North Dakota State University continued the project from 1991 to 2006 (lists 144-200). He reassumed the responsibility for these publications and completed lists from 2006 to 2011 (nos. 201-221). Egan databased lists 1-143 and Dr. Esslinger continued to add computerized references as the lists were published. There are now over 30,000 literature references on lichens in this database. In 1997 Dr. Einar Timdal in Oslo, Norway, successfully placed these database files (in searchable form) onto a WWW site located at:
http://www.toyen.uio.no/botanisk/bot-mus/lav/sok_rll.htm

Student Thesis under Dr. Egan:

LeGrand, L. 2011. Macrolichens of the Big Thicket National Preserve and surrounding piney woods region of southeast Texas. M. S. Thesis, University of Nebraska at Omaha.

ABSTRACT. Southeast Texas is an area of rich biodiversity including lichen populations. A floristic survey of the area was conducted in which 100 species in 25 genera of macrolichens were collected and identified (88 species in 24 genera from the Big Thicket National Preserve). Several new records were found including new reports for Texas of *Bulbothrix isidiza*, *Heterodermia crocea*, *Pseudoparmelia uleana*, *Pyxine coralligera*, and *Usnea subscabrosa*. New records from the Big Thicket Region include *Candelaria concolor*, *Cladonia parasitica*, *Cladonia sobolescens*, *Cladonia subcariosa*, *Collema subflaccidum*, *Dirinaria confluens*, *Heterodermia speciosa*, *Leptogium chloromelum*, *Parmelinopsis spumosa*, *Phaeophyscia rubropulchra*, *Physcia millegrana*, *Punctelia graminicola*, *Ramalina complanata*, *Teloschistes chrysophthalmus*, and *Usnea trichodea*. Pre-1980 and post-2005 collections from the region are summarized and compared.



Photographs: Michael Black

Studies on the Lichen-Forming Fungi (Lichens) of the Big Thicket National Preserve and Surrounding Region

Report on Activities --- Dec. 2006 to present (2011)

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History

My initial work in the Big Thicket area took place while I was a faculty member in the Biology Department at Texas A&M University from 1975-1979. During this time, with funding from the National Parks Service, I began collecting and documenting the lichens of the BTNP and adjacent areas. Collections were deposited in the TAMU herbarium at Texas A&M. These lichen collections, many years later, were transferred to the University of Nebraska at Omaha Lichen Herbarium (OMA) where they remain today. All specimen records at OMA have been databased and are currently accessible online through the Consortium of North American Lichen Herbaria at <http://symbiota.org/nalichens/>.

In the early 1981 I also worked with Dr. Virginia Gordy (Houston) on a baseline lichen survey with reference to air pollution applications. She continued with a follow-up survey of our original plots a few years later (1986).

Big Thicket Lichen Activity

Field Collecting:

In 2006 with financial help (\$6,000) from the Big Thicket Association, I again turned attention to the work in the area. An initial field collecting trip was carried out by two of my graduate students (Todd Widhelm and Robert Harms) in December of that year making collections at 10 sites in various units of the BTNP. These collections are housed and documented here at UNO, and we continue to identify material from this initial and subsequent field excursions.

Field collections were made during March 2007 with the assistance of two undergraduate students from UNO (Rebecca Moshman and Paula Benevides). Several additional BTNP sites were investigated, including the new Canyonlands Unit.

Additional field work was done in August 2008 with an undergraduate student Lacey LeGrand. These collections formed part of the material used for her undergraduate honors thesis at the University of Nebraska at Omaha, completed in December 2008.

Lacey LeGrand and I returned for additional field work in the area in July 2010, concentrating our collecting efforts in nearby National Forest areas surrounding the BTNP. These collections are now part of her M.S. thesis project on the macrolichens of the BTNP and environs (expected completion date December 2011). Additional collections were made during the recent (May 2011) workshop with Hardin-Simmons students.

Meeting Presentation:

A poster was presented at the annual meeting of the American Bryological and Lichenological Society annual meeting at Snowbird, Utah, July 2009. A copy of this poster is on display at the Big Thicket Association Field Station, Saratoga, Texas.

Teaching Workshops:

A “Lichen Identification Workshop” was conducted at the Saratoga Field Station for several days in January 2008 with the assistance of my graduate student Todd Widhelm.

“Liking Those Lichens” (a 3-day workshop) was conducted with the help of my former graduate student Robert Harms at the Saratoga Field Station from April 24-26, 2010.

Presentations, field work, and laboratory identification work at the Saratoga Field Station for Dr. Rick Hammer’s class from Hardin-Simmons University, Abilene, Texas, May 23-24, 2011.

The Cynthia Troxell Collections:

In the fall, 2010 I was received an email from Daniel Murphy of Boulder, Colorado, informing me of the death of his wife, Cynthia Troxell. He had found many boxes of lichen specimens from Louisiana, Texas, Minnesota and Colorado which he knew had been associated with her work in the 1970s for her

undergraduate and graduate studies. He asked if I (and Larry St. Clair of Brigham Young University) would be interested in these specimens. We both expressed interest in her collections and arranged over the next couple of months to have the specimens and her notes and collection books sent to us – Minnesota, Louisiana and Texas lichens to me at UNO and the Colorado material to Larry St. Clair at BYU.

Cynthia was an undergraduate student at Louisiana State University working with Dr. Shirley Tucker in the mid 1970s, and I had met her on at least one occasion while working in the BTNP. As I discovered, her undergraduate thesis at LSU concerned lichens from the BTNP area, and the specimens Daniel had sent from Colorado were the collections which formed the basis for her study. The Colorado collections were part of her M.A. work at the University of Colorado-Boulder under Dr. Sam Shushan.

By piecing together specimen packet notes, collection numbers, and data from her field notebooks, I have been able to create new, complete labels for over 400 SE Texas specimens and to prepare the material for identification/verification and deposit into the UNO Lichen Herbarium. My M.S. student Lacey LeGrand is incorporating these collections along with our recent field specimens as part of her current thesis project. Several of these collections appear to be rare early records for SE Texas.

Miscellaneous Results

New additions to the lichen flora of Texas:

Two species (so far), *Bulbothrix isidiza* (Nyl.) Hale and *Pseudoparmelia uleana* (Müll. Arg.) Elix & T. H. Nash are first reports for the state of Texas. Many of the collections represent new county records.

Data on Species currently known from the BTNP and adjacent areas (BTNP Counties):

The UNO Lichen Herbarium (OMA) currently (as of 6/14/11) has **1089** databased lichen specimen records representing **137** species in **65** genera (see Excel spreadsheet summary BTNP Counties List.xls).

Data on Species currently known catalogued from official UNITS of the Big Thicket National Preserve:

The UNO Lichen Herbarium (OMA) currently (as of 6/14/11) has **869** databased lichen specimens representing **123** species in **59** genera.

Dr. Robert Egan's Lichen research data is also housed on the Thicket of Diversity All Taxa Biodiversity Inventory Database. To see the most recent counts go to the ATBI TAXA TALLY at www.thicketofdiversity.org