

Digitization of the Albion College Herbarium

Matthew Kleinow



Albion College

What is a Herbarium?

- Reference collection of dried or liquid-preserved plant specimens
- World's largest herbarium is at National Museum of Natural History in Paris (8 million specimens)
- In the U.S., the largest herbaria are New York Botanical Garden (7.3 million specimens), Missouri Botanical Garden (5.9 million), Harvard University (5 million), Field Museum of Natural History (2.7 million)

What is a Herbarium?

- University of Michigan Herbarium (MICH) has 1.7 million specimens
- Michigan State (MSC) has 560,000 specimens
- Albion (ALBC) has 14,000 specimens, about 10,000 vascular plants plus algae, mosses, fungi, etc.
- Core of Albion's collection from alum Charles Wesley Fallass '73
- 1873, that is!







Importance of Herbaria

- Document variation of form in plant species
- Store type specimens designated when a species is named
- Document changes in vegetation in an area
- Increasingly used as a record of changes in climate based on timing of leaf flush, flowering & fruiting over time
- Many herbaria are now digitizing their collections – making available online

Michigan Small Herbaria Digitization Effort

- Sponsored by the Clarence and Florence Hanes Foundation of Kalamazoo
- Participants include Albion College, Calvin College, Central Michigan University, Eastern Michigan University, Grand Valley State University
- Grant funds purchased portable work station from SilverBiology in Colorado

Goals of My Study

- To learn more about plant species, variation, and classification
- To make ALBC specimens widely available on the internet
- To write a short historical paper on the holdings of ALBC

Work Flow:

- Go through all specimens, checking name information and using databases to update names



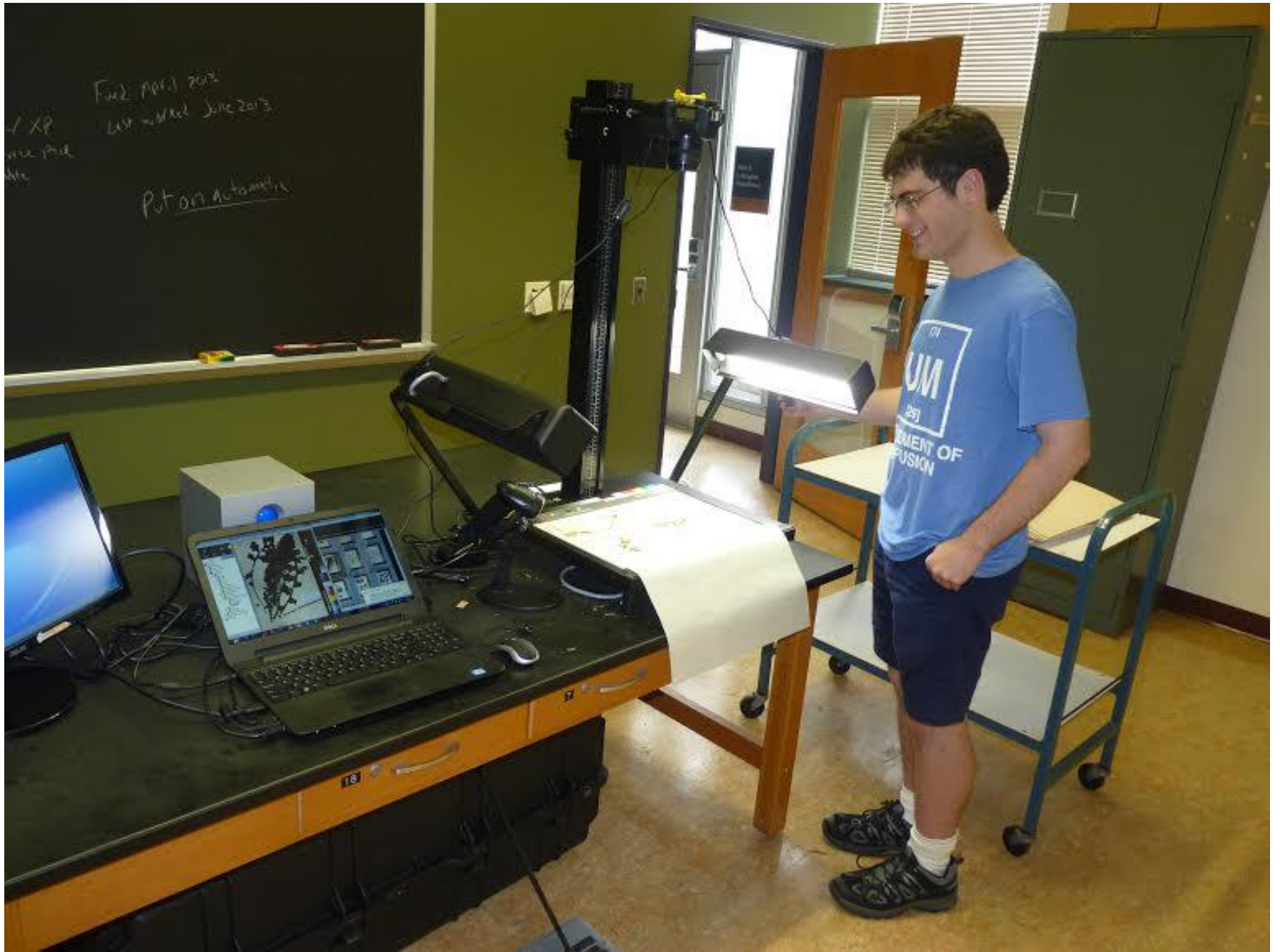
Work Flow

- Barcode specimens to enable indexing



Work Flow

- Photograph specimens using Canon EOS 5D camera with a 50mm macro lens
- <https://drive.google.com/a/albion.edu/?tab=mo#starred>
- “Batch” the specimens to a portable hard drive
- Eventually uploaded to server at Central Michigan University



Contributors to ALBC



CHARLES W. FALLASS

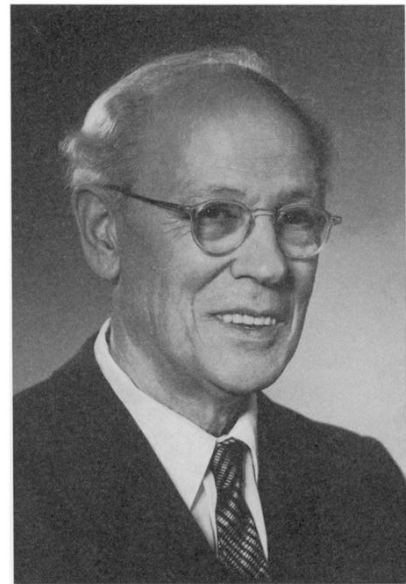
- Charles Wesley Fallass (1854-1942)
- Albion Class of 1873
- Businessman who collected plants for a hobby
- Had a private herbarium of over 4,000 specimens
- Donated his herbarium to Albion College
- Most of his specimens are in very good condition, but names need to be updated

Contributors to ALBC

- Emma Jane Cole (1845-1910)
- Taught at Grand Rapids Central High School (1881-1907)
- Corresponded with leading botanists, including Charles Sargent of Harvard University, who named Michigan endemic hawthorn *Crataegus coleae* Sarg. for her
- Wrote *Grand Rapids Flora* (1901), the earliest botanical census for the Grand Rapids area
- Traded specimens with Fallas, resulting in ALBC holdings from her
- Elected into the Michigan Women's Hall of Fame in 2007.



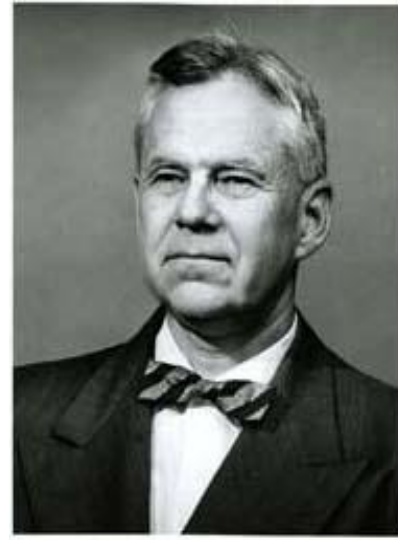
Contributors to ALBC



- Earl Edward Sherff (1886-1966)
- Albion Class of 1907
- Taught at Chicago Teachers College (1923-1951)
- Research Associate in Plant Systematics, Field Museum
- Published over 140 papers, mostly on tropical plants
- Collected over 14,000 specimens for herbaria

Contributors to ALBC

- Leonard Peter Schultz (1901-1986)
- Albion native and Class of 1924
- Made collections as a student
- Schultz became a world-class ichthyologist at the Smithsonian Institution, where he led the Division of Fishes (1938-1965), retiring as Senior Zoologist in 1968



Contributors to ALBC

- William James Gilbert (1916-1994)
- Albion faculty (1946-1981)
- Expert on tropical algae of the South Pacific
- Secured the Fallas herbarium for Albion College
- Made many plant and algal collections while at Albion





HERBARIUM
of
WILLIAM JAMES GILBERT

Acanthopora spicifera (Vahl) Borgs.

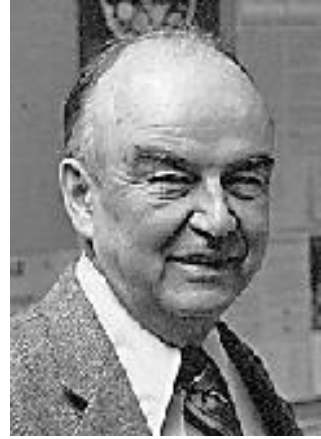
In wash on sandy shore
Labuhan, West Java

Coll. W. J. Gilbert
Det.

No. 21-11-68
Date 68-02



Contributors to ALBC



- Ewell Addison “Doc” Stowell (1922-2009)
- WWII Medical Corps veteran
- Albion Biology faculty (1953-1988)
- Collected plants and fungi while at Albion



HERBARIUM OF ALBION COLLEGE
ALBION, MICHIGAN, U. S. A.

Polyporus pubescens Schum. ex Fr.

Habitat On fallen Fagus trunk.

Locality Hardwoods stand in Bay View woods, Bay
View, Sect. 33, T.35N, R.5W, Emmet County,
Michigan

Collector E. A. Stowell
No.

Date October 14, 1989

Contributors to ALBC

- Maynard C. Bowers (1930-)
- Albion Class of 1956
- Taught at Northern Michigan University (1966-1998)
- Donated 4000+ moss specimens to ALBC ca. 2002
- Nephew of ichthyologist Leonard Schultz



bb-594

HERBARIUM OF M. C. BOWERS

POHLIA NUTANS (Hedw.) Lindb.

Flathead Co., Montana

Sect.

T. 32 N R. 18 W

Along north bank, Middle Fork, Flathead
River, Glacier National Park, Elev. 3100
ft. Lat. 48° 30' N., Long. 113° 58' W.

Collector M. C. Bowers

No. bb-594

Date 12 June 1963

bb-594



Thanks to:

- FURSCA
- Dr. Dan Skean, my faculty advisor
- Dr. Ed Voss, for making my job a lot easier by labeling many ALBC specimens in the past fifty years.
- The Michigan Small Herbaria Digitization Effort funded by the Clarence and Florence Hanes Foundation.

References

- Angiosperm Phlogeny Group. 2009. An update of the Angiosperm Phylogeny Group classification for the orders and families of flowering plants: APG III. *Botanical Journal of the Linnean Society*, 161: 105–121.
- Cole, Emma J. 1896. *Grand Rapids Flora: a catalogue of the flowering plants and ferns growing without cultivation in the vicinity of Grand Rapids, Michigan*. Grand Rapids: A. van Dort. 212 p.
- Evans, T, Monfils, A. 2013. Digitization of Michigan's regional herbaria: a collective effort. Unpubl. grant proposal to the Clarence and Florence Hanes Foundation.

References (cont.)

National Science Foundation. 2006. Advancing digitization of biodiversity collections. nsf.gov. <<http://www.nsf.gov/pubs/2013/nsf13569/nsf13569.htm>>. Accessed 8 Feb 2014.

Schmidt, L. 2007. Digitization of herbarium specimens, a collaborative project. <<http://idigbio.org>.> Accessed 11 Feb 2014.

Silver Biology. 2014. <<http://www.silverbiology.com/>>. Accessed 11 Feb 2014.

References (cont.)

Snow, N. 2005. Successfully curating smaller herbaria and natural history collections in academic settings. *Bioscience* 55: 771-779.

Thiers, B. 2014, continuously updated. Index Herbariorum: A global directory of public herbaria and associated staff. New York Botanical Garden's Virtual Herbarium.
<<http://sweetgum.nybg.org/ih/>>. Accessed 3 Feb 2014.

Voss, E.G. 1955. Charles W. Fallas (1854-1842), a pioneer Michigan botanist. *Asa Gray Bulletin* 3(1): 77-96.

Questions?

