

Ethnobotany Labs 5 and 6.

Plant collections

February 10–19, 2015

Background This lab is about herbarium labeling and plant families.

- From the Middle Ages, plants have been used as “living” illustrations to **herbals**, books of plant use (designed initially for doctors).
- These books were turned into **herbaria**, piles of dried and pressed plants usually attached (mounted) on dense paper sheets.
- In the “Flora of North Dakota” project, we collected more than 4,000 plants which were arranged and put to the permanent collection, **Minot State University herbarium** (international code is “MISU”).
- Unfortunately, determination of some samples was not successful. Also, the classification of plants (especially on the level of genus) is changing all the time. As a result, most of our labels are now outdated in the name part and must be replaced with the newer ones.
- Herbarium has several **cabinets** where plants are distributed by **family** (in alphabetical order). Inside a family, plants are arranged alphabetically by genus and then by species. All samples from a same species are typically located inside one folder labeled with species name (two words: genus + species epithet).
- **Families** are the central concepts in plant taxonomy. The current families were invented in the end of 18 century by French scientist Michael Adanson. He was a first bioinformatician and use the approach similar to contemporary phylogenetic studies—this is why his families became so stable.
- Herbarium samples are very valuable. Lots of time and efforts were put into every sample. **Please be extremely careful!!! Only two hands may be used to move folders or sheets! Never take more than one folder from cabinet! Do not place herbarium sheets face down!**

The sequence The lab is split between two weeks, and after you receive the individual assignment (≈ 40 printed pages with 5–7 labels on each), you will need to choose your time.

How to choose your time:

- We will work inside the museum (room 212). Please be careful there and do not take anything which is not related with herbarium. Do not leave the door open. If there are people inside, **knock** and they will open.
- Only three persons could work inside so if you want to work, check the room first and ask people inside about their plans.
- If the room is closed, I will open it for you. Typically, I am here every day from 9 to 7. If not, send me email and wait for the reply.
- I estimate you work time as 5 ± 1 hours so plan accordingly.

What to do After you receive your labels, check them. Please do not change the order because they are already arranged by families, genera and species (in that sequence). Then:

- Cut out individual labels with scissors, try not to change their order
- In the collection space, open your cabinet(s), find where your labels are starting
- Take out **one** (!) of your folders and renew labels following these rules:
 1. To find out which plant needs the label to be renewed, check the collection year and ID first. The ID is either printed or written on the old label. Your replacement label must contain the exactly same ID. ID **always** consists of two numbers connected with hyphen like “0–1234” or “35–11”.
 - Important!** On the herbarium sheets, names are frequently wrong and therefore differ from your labels; but IDs must be the same. Names on folders are correct.
 2. If the plant was collected in **2014**, **do nothing** and leave it as is. Actually, you should not have any labels for 2014-year plants.
 3. If the plant was collected in **2011–2013**, replace the label by attaching the new label **over** the old one with school glue.

Warning! When using the glue, put only four drops of it in the corners, do not apply more glue!
 4. If the plant was collected **in 2010 or earlier**, attach the new label **sideways** to the old one. Never cover any writings or any part of plant with a label. In the extreme case when there is no space, attach the label on the back of herbarium sheet, to the bottom right corner. Never use more than 4 small drops of glue!
- When going along, find 2–3 “most pretty” herbarium samples and mark them with **yellow-green** sticky label. We will use these plants for the display.

Important! When marking with sticky labels, place them in the way to make them visible immediately when the cabinet is open.
- Return the folder back into the place where it was.

Troubleshooting

- **Use both hands!**
- If you find an old, untidy folder—replace it with a clean one and copy the name. Folders are provided.
- If you see that alphabetic order of species, genera or families is broken, correct it.
- If your label does not match with any ID in your folders, report this label to me.
- If any plant in your folders **is not collected in 2014** but still has **no matching label**, mark this sheet with **orange**, **pink** or **purple** sticky label.

Note: others may have labels for your “marginal” plants so check with them if unsure.
- If any of your plants is badly mounted, seriously broken, very loose, significantly untidy or something similar, mark this sheet with **blue** sticky label.

Important! When marking with sticky labels, place it in the way to make them visible immediately when the cabinet is open.

Report The most important parts of the report are the (1) labels which were renewed. Also, do not forget about (2) “pretty” plants for the display, I need 2–3 of them to be marked with green sticky labels. If anything needs to be (3) reported to me (like orphan labels), report it. If (4) marking is required (for orphan plants or bad plants), mark them with the proper type of sticky label (see the “Troubleshooting” section above).

Written report:

- Provide the original “layman” description of one family which is most frequent in your folders. Make the description yourself, do not copy. Your description should answer these questions:
 1. Why did scientists unite plants into this family?
 2. How to distinguish plants of this family from all others?
- The report is due February 27, 9 am.