

## The Taxonomy of Poison Ivy

**Overview:** The purpose of this project is to provide an opportunity to learn about sources of information available to the plant taxonomist that can help determine the correct name of a plant.

**Identification of Poison Ivy:** First, we need to decide which species of poison ivy grows on campus. Locate a wild plant or use the herbarium specimen provided and then key it out using the dichotomous key for Anacardiaceae in Gleason's & Cronquist's *Manual*.

- a) Write the full scientific name, including author citation, according to G&C.
- b) Do G&C list any synonyms for this species? If so, list them. If not, write "none".

**Diagnosis/Distribution:** What features are used to distinguish poison ivy from its relatives?

- a) How do G&C distinguish between Common poison-ivy and Western poison-ivy? In other words, describe the characters that can be used to tell the difference between the two species.
- b) G&C recognize two genera in the Anacardiaceae: *Rhus* and *Toxicodendron*. Describe how to tell the difference between the two genera.
- c) Does Common poison ivy grow in Minnesota? \_\_\_\_\_. If yes, does it grown in Stearns County? \_\_\_\_\_. (see Ownbey & Morley, *Vascular Plants of Minnesota*; copy in Bailey Herbarium).
- d) Do you need to worry about contact with Poison sumac when on campus? \_\_\_\_\_. Explain.

**Synonymy.** Is this plant known by any other names?

- a. Check each of the resources listed in the table below and then complete the table.

| Resource  | Accepted binomial | Synonyms |
|---|-------------------|----------|
| Ownbey & Morely (1991) <i>Vascular Plants of Minnesota</i> (copy available in the Bailey Herbarium)   |                   |          |
| University of Minnesota Herbarium "Checklist of Minnesota Plants" (available at <a href="http://bellmuseum.org/plants/checklist2008.pdf">http://bellmuseum.org/plants/checklist2008.pdf</a> )   |                   |          |
| <i>Flora of North America</i> (available at <a href="http://www.fna.org">www.fna.org</a> or hard copies in the Bailey Herbarium; if the volume for your species has not yet been published, indicate the volume number in which it will be published) |                   |          |
| Kartesz, John. <i>Synonymized Checklist of the Vascular Flora of the United States</i> (available at: <a href="http://www.csdl.tamu.edu/FLORA/b98/check98.htm">http://www.csdl.tamu.edu/FLORA/b98/check98.htm</a> )                                   |                   |          |
| USDA Plants Database ( <a href="http://plants.usda.gov/">http://plants.usda.gov/</a> )  |                   |          |
| ITIS - Integrated Taxonomic Information System Database ( <a href="http://www.itis.gov/advanced_search.html">http://www.itis.gov/advanced_search.html</a> )   |                   |          |

- b. Analysis: Considering the information you have collected, what do you consider to be the correct (most acceptable) binomial and vernacular name for your species? Explain.
- c. What does the abbreviation 'ex' mean?

**Author Name(s).** Once you have settled on a name, using a source such as IPNI list: (a) the full name of any author of the name (author citation) of the name; and (b) the dates that each author(s) lived.

**Publication History.** Small originally named this plant *Rhus rydbergii*. Using a source such as the International Plant Names Index (IPNI; <http://www.ipni.org/>; note: you may have to type this URL into your web browser):

- a) In what year did he publish this name? \_\_\_\_\_.
- b) In what publication (*write the full name; no abbreviations*) did this name first appear?

Greene renamed the plant *Toxicodendron rydbergii*.

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- b) In what publication (*write the full name; no abbreviations*) did this name first appear?

**Genus Nomenclature.** Using a source such as the *Index Nominum Genericorum* (ING) database (<http://botany.si.edu/ing/>) or *IPNI* or *Names in Current Use for Extant Plant Genera* (<http://www.bgbm.org/iapt/ncu/genera/Default.htm>), identify:

- a. The author of the genus (*write the full name and dates the author lived*)
- b. In what year was name the published? \_\_\_\_\_.
- c. In what publication (*write the full name, no abbreviations*) did the genus name first appear?

**Family Nomenclature.** Using a source such as 'A Checklist of Family and Suprafamilial Names for Extant Vascular Plants' by JL Reveal (see link below), identify: (<http://www.plantsystematics.org/reveal/pbio/fam/supgennames.html#rank>)

- a. The author of the family (*write the full name and dates the author lived*)
- b. In what year was the name published? \_\_\_\_\_.
- c. In what publication (*write the full name, no abbreviations*) did the name first appear?

**Family Classification.** Although family names are relatively stable and generally accepted, it is not uncommon to find disagreements between the Angiosperm Phylogeny Group (II) and others who have studied angiosperm phylogeny such as Cronquist, Thorne, Dahlgren, Reveal and Taktajhan. All these authors agree that 'Anacardiaceae' is the appropriate name for the family in which poison ivy is classified (see the 'Concordance of Angiosperm Family Names' site at <http://www.plantsystematics.org/reveal/PBIO/usda/usdaindex.html>.)

- a. Name a family that at least two of the authors disagree upon.
- b. In the table below, give the name each accepts for this family.

|            |  |            |  |
|------------|--|------------|--|
| Cronquist: |  | Reveal:    |  |
| Dahlgren:  |  | Taktajhan: |  |
| Thorne:    |  | APGII      |  |

**Systematics & Classification.** Record the complete Linnaean taxonomic hierarchy (Kingdom, Division, etc.) for Western poison ivy. This can be obtained from a variety of sources including the ITIS database or the USDA Plants Database.

Kingdom: \_\_\_\_\_

Division: \_\_\_\_\_

Class: \_\_\_\_\_

Order: \_\_\_\_\_

Family: \_\_\_\_\_

Genus: \_\_\_\_\_

species: \_\_\_\_\_

**Technical Experts.** Botanists frequently specialize in one or a few taxa. The World Taxonomist Database (available at <http://www.eti.uva.nl/tools/wtd.php>) is one source to locate these specialists. An alternate way of finding an expert is to check the author(s) of the various taxa in the Flora of North America. Check the World Taxonomist Database to locate an expert for the Anacardiaceae. Record the name and affiliation of one individual. If none, record NA (not applicable)