LABELING OF HERBARIUM SPECIMENS

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With interest strong (or required by law) in accurate identification of threatened, endangered, and otherwise protected plant species, not to mention general interest in our natural heritage, many individuals and agencies prepare specimens to submit for identification to herbaria and competent individuals. Such specimens can be important documentation for species occurrences, as well as valuable samples for persons studying particular species.

However, if these specimens are to fulfill their maximum potential, they must not only be good specimens but also be provided with good labels. Even if a collection has well-pressed flowers and fruit, not tangled in a large wad, possesses basal parts (rhizomes or roots), and displays both surfaces of leaves, it loses much of its value if the label says merely “Collected north of Lansing.” After all, Sault Ste. Marie is north of Lansing! That extreme example of a vague label might have been satisfactory (or the best one could do) a century and a half ago. But modern criteria for a good label demand both more information and greater precision.

Few herbaria have an over-abundance of space for additional specimens, but most are glad to receive good ones, well-labeled, especially of interesting species or from under-collected regions. That is one way in which they augment their collections, and retention of desirable specimens is usually the only remuneration expected in return for identification services. Skimpy little scraps of plants, with data scrawled on scratch paper, are less welcome (and likely to be discarded) for they provide nothing of much scientific value for further research or study—and, indeed, they may be so incomplete as to be unidentifiable.

Having examined and recorded data from approximately a quarter-million labels in the course of preparing text and maps for Michigan Flora, I feel somewhat prepared to offer advice. The outline following is intended to help in preparing truly useful and informative labels. Label information is sometimes even more valuable than the specimen itself. Only the collector knows fully the circumstances of collection, and thus bears responsibility for sharing (on the label) what he or she knows about the locality, habitat, appearance, and attributes of the plant—whatever cannot, years later, be determined from the pressed, dry carcass. The collector’s original label, for better or for worse, is therefore carefully preserved with the specimen. Most herbaria do not have the staff to retype labels, even if they wanted to risk making errors in transcription from hastily scrawled data. Some people, unfortunately, write labels with no more concept of permanence than for a grocery shopping list, stringing together fragments of habitat and locality in random sequence, using obscure local names of places (in-
cluding roads, bars, fast-food establishments, etc.) that will very likely be unintellible to anyone even a decade later.

When writing a label, the collector would do well to consider whether a botanist 100 or 200 years hence, perhaps on the other side of the continent, or even on the other side of the world, will be able to find the stated locality on a map and understand the observations recorded. That is just what we are now obliged to attempt with labels prepared in Michigan in the early to mid 19th century, often located at best only by farmers’ woodlots or Indian names for landmarks. And it is why some of us collect old atlases, plat books, maps, railroad routes with listed stops, and such documents!

“Along road,” a recent label says simply. That leaves lots of room for imagination. Was the plant in a weedy, bulldozed habitat? Was it in a natural situation? More instructive and precise statements, any of which could be true, might be “In wet roadside ditch at edge of cedar swamp”; “Border of beech-maple hardwoods next to dry gravel shoulder of road”; “Along a sandy two-track trail through clearcut surrounded by jack pine.” Once collectors have gone to their reward (and I’d hesitate to suggest what that might be), they can no longer be questioned about flower color or pattern, fragrance of flowers or foliage, abundance, specialized habitat, kind of lakeshore, or other details that only they knew at the time of collection but failed to report on the label.

Even botanical beginners, still weak in their identification skills for difficult plants, can contribute valuably to science by preparing good labels. The specimens can be interpreted, and reinterpreted, later. The labels cannot. Hence this somewhat detailed account of points worth considering.

OUTLINE FOR PREPARING GOOD HERBARIUM LABELS

First of all, remember that the label prepared by the collector will remain with the specimen forever! If the information is copied to be more legible or is entered into a database, errors can occur in transcription. Therefore, the collector’s original data are always preserved with the specimen for authenticity should questions arise.

1. Use high-quality materials: paper [acid-free] and ink [permanent, black waterproof]—not 3 × 5 cards. Trim label neat and square on the sides. (The label will be mounted, with the specimen, on heavy low-acid mounting paper.) [N.B.: Most herbaria prefer to mount specimens on their own paper (often pre-printed with official identification) and by their own chosen techniques. Avoid donating mounted specimens for identification unless you are assured that they will be welcome in that condition.]

2. Use common sense, e.g.,
   a. Keep the label compact. Long lists of associated species or other data belong in the collector’s field notes or on separate memoranda, not all on a billboard label that leaves insufficient room for the specimen on a stan-
Avoid wasting space identifying the fields of information. There is no need to write “Date” in front of what is obviously a date. Likewise, for “Name,” “Habitat,” etc. Just state the facts!

(c) Similarly, there is no need to begin data with phrases like “Growing in . . .” or “Found in . . .”. Obviously the specimen was found or it would not have been gathered. [A specimen collected where it was not found would be truly remarkable!] A specimen is ordinarily assumed to have been growing where it was found; if it was not (e.g., if it was blowing about in the wind, lying on the ground under a tree from which it fell, or washed up on the shore), that would be worth noting. Avoid needless words. Conserve space.

(d) Be a severe proofreader. You will be embarrassed far into the future if labels bearing your name as collector have misspelled names of plants, localities, co-collectors, or other information. Double check the sources from which you copy. [It is depressing to see how many people appear incapable of copying names correctly out of the manual or flora that they used for reference!]

(e) Be sure that units of measurement or parts described are indicated. “Abundance 1,” “Height 15,” “Color yellow” are not helpful statements without knowing the collector’s code for abundance, the units in which height was measured, or the part that was yellow!

(3) Remember that your specimens, with their labels, may one day be included in a loan to Fort Worth, New York, Stockholm, Prague, Berlin, Warsaw, St. Petersburg, Beijing, Tokyo, or anywhere else in the world, for study by someone specializing in the family or genus. The language there may not be English or even use the English alphabet. Therefore, keep in mind:

(a) Handwritten labels are often misread by other persons, sometimes leading to startling assertions of locality or habitat in published monographs, as well as misspelled names! Use a typewriter or computer to prepare absolutely legible labels. (Herbarium staff generally do not have the time or skill to copy accurately a diversity of poor penmanships from “temporary” labels! Submit a good permanent label with each specimen.)

(b) Avoid all but the most obvious (preferably Latin) abbreviations. a.m. for a flower-opening time may be o.k., but U.S. postal abbreviations for states are not necessarily clear in the rest of the world (or even here, where MI means Michigan, not Minnesota, Missouri, or Mississippi). Short-cut abbreviations of plant names [“Q. vel.” or “P. ser.”] in habitat statements may mean nothing to persons in a part of the world where those plants (or names) are not known. M&NE, D & M, MDOT, R.W.W. will only confuse or perhaps amuse people in the next century.

(c) The farther away the user is, the less likely he or she will understand the geography familiar to the collector or have detailed maps available. State and county should be clearly stated. Include a straight-line distance from
center of the nearest town (preferably in the same county, to avoid confusion in assigning localities). To benefit those with good maps, include an objective designation of locality, such as latitude and longitude (GPS can help) or section, range, and township in areas thus surveyed. The logical sequence is to understand “of” : SE¼ NW¼ sec. 15, T39N, R4W = SE¼ of the NW¼ of sec. 15 of T39N, R4W. But be sure the designations are accurate! [The Wisconsin collector who extrapolated that state’s meridian into the western Upper Peninsula of Michigan with “R15E” was really in R35W of the Michigan meridian—an error of some 300 miles.]

(d) Further descriptions of locality may well be helpful in addition for local use, but avoid limiting locality data to ephemeral information like names of streets and highway route numbers (they shift over time!), property owners, commercial (or other) buildings, local nicknames for sites, etc. [A hundred years later, who will know where the edge of the K-Mart parking lot was, or the Cherry Hut, or the “Mudhole,” or “Potowatamie Road at end of pavement”? “Just southeast of Temporary Hwy. I-69 exit ramp . . .” was an only temporarily usable designation on one label!]

(e) The label is ordinarily not the place for detailed instructions to reach a site. [As one label expressed it: “Enter a vacant lot between two houses. Travel S. through a cornfield, veer west, pass just S. of a sumac thicket.” The label that read “On right-hand side of Laird Road going east” could simply have said “S side of road.”]

(f) Some sophisticated collectors have a small map printed on (or in the background of) their labels with the collecting site indicated. Such maps can be very helpful, but must indicate which direction is North. And the label should also make the locality clear in words that can be copied for citing in a monograph or entering in a database.

(4) Be sure to say something about abundance and the habitat as well as the locality. Herbarium specimens are not like stamps in a collection, simply filling vacancies in one’s holdings. They can be studied in their own right for anatomy, variation, and so forth. But additional information on the label can be invaluable. Whether the specimen was in a wet floodplain forest or a dry prairie, in waste ground or a bog, can affect its characters as well as help to understand the complexities of our natural world. [Careless collectors sometimes fail to clean the roots of their specimens, but such deplorable samples are another matter. Habitat should be stated on the label, not collected!] Some special points:

(a) Make clear the conditions where the specimen with the label came from. “Multiple-choice” labels may fail to specify conditions where the specimen actually grew (and thus what situation might explain any variation from the norm for the species); better to say, e.g., “In wet ground . . .” and then add on the label “Also seen in dry ground . . .”. The label (for a sand dune species) that said merely “near hemlock stand” would have been better if it had declared what habitat the plant was actually in. Labels that have some general printed indication like “Mosaic of red and
jack pine plantations and aspen clones. Steuben Lake has a wet wooded border, shore veg. includes cattails, bulrushes, pickerelweed and sedges” are useless for understanding the habitat of the specimen at hand, as is the brief “ditches and hills” with no word as to whether the single specimen came from a ditch or a hill! “Water varying from 0 to 1 m” does not say whether the specimen came from dry land. “Along shore and interior” on an island covers everything! The point of the label is not to report what the collector did all day, but where the particular specimen it accompanies occurred.

(b) For species that are known as cultivated plants, the label should indicate whether the collector thought the specimen was established outside of cultivation. A label that says “In Mrs. Smith’s garden” does not make clear whether the collector recognized it as a weed in that garden, either a casual waif or well established, or planted. [In general, spontaneous weeds and escapes from cultivation, whether in a garden, farm, or cemetery, are likely to be included in a local flora, but plants growing where they were planted (either under glass or outdoors), are not. This kind of
problem has become increasingly important with the advent of seed mixes for restoring prairies or other habitats.] A label with some clue as to origin of possibly planted species is a blessing!

(c) Similarly, native plants at or near the edge of their range in the region where collected pose a problem that only the collector can readily address. For example, was a plant “along railroad,” lacking further data, thought to be a waif in waste ground or a relic in a right-of-way strip prairie? Let the label offer some idea!

(5) Help the person using your collection by providing information (in addition to locality and habitat) not evident from the dried specimen.

(a) If it is not possible to gather the entire plant, including underground parts, the label should provide the missing information, e.g., “From [or, if true, beneath] a tree 1.2 m in diameter”; “much-branched shrub ca. 2 m tall”; “selected small specimen (others seen to 3 m tall)”; “larger leaves from root sprout”; “plant with extensive rhizomes.”

(b) Flower color (especially blue) often fades to white or simply turns brown with time. Color of flower (more specifically, usually, of corolla) should be stated on the label, noting any spots, stripes, or other variation from uniform color. It is frustrating to try to run something through a key that asks for color, when the collector failed to reveal what that was and it cannot be seen on the dry parts! Furthermore, corolla color sometimes changes on drying to something other than white or brown. If the label says “Flowers purple or white” that doesn’t reveal whether all specimens on the sheet were one or the other or, if mixed, which was which (nor, for that matter, what part of the flower was colored).

(c) Distinctive aroma (flower or crushed foliage?), white or colored sap, stinging hairs, glaucous surfaces, and such features should not be left to the imagination of one who consults the specimen years later.

(d) Anyone who has used keys to determine unknown plants knows that in some groups certain other information is needed that is often very difficult to ascertain from a pressed specimen, such as number and orientation of fertile stamens in a mint, number of styles in a pink, which violet petals (if any) are bearded. [Gathering, in the first place, of specimens with parts required for identification, like fruit in mustards and umbellifers and basal parts in many plants, is first of all the responsibility of the collector, not of the label per se.]

(6) Format:

(a) At the top of a label, a general heading may be appropriate, like “Plants of Superior County, Michigan” or “Herbarium of Sherlock Holmes Academy” or simply “Plants of Minnesota”.

(b) Otherwise, the scientific name of the plant (or blank space for it) should be placed conspicuously at the top of the label, as that is how the specimen will ultimately be filed.

(c) Next (below the name) come the locality and habitat, in some logical arrangement but preferably separable. Certainly the state (if not in a
heading) must be included. It is helpful to have the county displayed in capital letters as a major category. There are many cities with the same name in different states, and numerous counties with townships of the same name within a state (e.g., Burt, Van Buren, Clinton, Lake, Superior in Michigan).

(d) Then additional notes (see section 5 above). [Lack of clear distinction between different kinds of information can lead to such confusion as “Laxly Caespitose, Canada” cited as a locality in a foreign journal!]

(e) At the bottom of the label belong the collector and number. These do belong together, the number immediately following the name, not somewhere else on the label. The easiest and least ambiguous numbering system is to start with simple number 1 and keep going the rest of your life. Trying to incorporate part of the date and/or locality, renumbering from 1 every year or in different regions or for different groups of plants, adding prefixes, or other schemes can lead to confusion in the future. Duplicates, i.e., all plants of the same kind from the same individual (woody or otherwise large) or uniform colony (herbaceous) on the same date should all receive exactly identical numbers, not supplemented with additional digits or codes. The collector’s name and number (e.g., Farwell 5944) are forever linked to designate a particular collection and its duplicates (it is therefore redundant to incorporate collector’s initials in a numbering scheme). Persons reporting on specimens sent for identification will use the collector/number designation. If a tall specimen was too large to press for one sheet, but was divided into two or more sheets, then identical labels should be provided for each sheet (and can be labeled “sheet 1,” “sheet 2,” etc.) If a gathering was inadvertently mixed when numbers were assigned in the field, the original number can be retained for both collections after separation, with a letter after it (or at least after one of them), e.g., 14396A and 14396B.

(f) In the date, be sure to give all four digits for the year and write out the month. Many people around the world use different sequences, and shortening the date can lead to error. Material (e.g., fruiting) collected on a later date from the same colony or individual should bear a new collection number, but a reference to the other number and date is helpful.

CAVEAT

The advice offered here is intended primarily for collectors of vascular plants in the temperate Great Lakes region of North America, not necessarily for those in other regions of the continent or world, where factors such as elevation, use by indigenous peoples, or aboriginal (vernacular) names are also important to record on labels. The herbarium practices assumed are generally followed worldwide but derive specifically from the University of Michigan Herbarium. A collector whose specimens are to reside in a particular herbarium should of course follow any practices preferred by that institution.