Preparing herbarium labels

Part 1: Permissions and field notes

What kind of herbarium label?

These instructions are for preparing labels for algae, fungi, and plants that will be stored on flat sheets, in paper envelopes, or transparent storage bags. They could be used for specimens stored in a preservative fluid, but some inks will fade or be washed off by preservative fluids. For them, the best approach may be to place a label with the catalog number [barcode, if used] and taxon name written in pencil on cotton-based paper in the storage jar (ordinary paper will disintegrate).

If duplicate specimens are sent to another herbarium in OpenHerbarium, that herbarium will be able to pull the data into their herbarium's database by pulling the data either from the collector's personal database or from the sending herbarium if that herbarium contributes to OpenHerbarium.

Permissions required

Preparing labels using OpenHerbarium requires a) being a registered user and b) having permission to create a Personal Collection Profile. Registered users without the necessary permission will be told "**You do not yet have management permissions for any occurrence projects".** Ask the person in charge of the herbarium you work with to give you the necessary permission. They can do so if the herbarium contributes to OpenHerbarium. If you are not associated with a contributing herbarium, write to me, Mary Barkworth, summarizing your credentials, what kinds of collection you will be making, and what you plan on doing with your specimens.

Field notes – the starting point of good labels

Good field notes are the starting point for good, informative labels. They should be recorded, using pencil or permanent ink, in a field notebook. They can be transferred to the collector's personal database whenever internet access is available. That may be at the end of the day or several days later, but it should be done as soon as possible. There are a few fields that may be best entered later (name, georeference data), but most of the information should be entered while making the collections.

In preparing field notes: **WRITE CLEARLY**. This is essential if you are one of the fortunate few who can (or must) hand their field notebook to someone else for label preparation but, even if you will be preparing your own labels, writing clearly will make the task easier.

Choosing a notebook: If you are making specimens for a class assignment, the quality of your field notebook is not too important. If they are part of a research project or professional activity, purchase one with a binding that will not break after a few uses and good quality paper. Also choose a convenient size, not so small that you need several and not so large that it cannot easily be stored on a bookshelf. Do not use a spiral-bound notebook.

During fieldwork, carrying your notebook in a plastic bag will help protect it from sudden showers or unexpected immersions. When staying overnight or parking a car, keep your field notebook (and camera) with you. Do not leave them in a car or luggage or anything else that might be lost or stolen.

Use **PENCIL or PEN WITH PERMANENT ink.** Pencils are inexpensive, easy to maintain, and relatively easy to find. Choose a lead of medium hardness or softer. This will make it easier to read and photocopy your notes.

Do not use a cell phone or other electronic device as the primary record for your field notes. There are still many places where there is no cell phone and internet access is not reliable and batteries cannot be purchased.

When writing your field notes, **do not use abbreviations** except for measurements (use metric measures and their standard abbreviations) and compass directions. Remember, the person reading your specimen data may live in another country. Even that may not help; I have come across abbreviations that mean nothing to me on US specimens.

What to record

Labels, and hence your field notes, should be a source of original observations, not what some reference says. If you find a species growing in open areas of your collecting site, record the habitat as "open" (or low canopy cover". Do not add "or shady" even if an authoritative resource says it prefers shady areas. Provide more information rather than less, balancing this need with your time constraints and the goals of your project.

Organizing your notes

In recording field notes, it is most efficient to start with information about the *Event* followed by specimen information for each of the specimens you collect during that event. *Event*, as used here refers to an individual collecting stop. You may participate in multiple collecting events in a single day, each at a different location. The *Event* information can be added to all the specimen labels, with additional information for individual specimens being added, if it is provided. Make a printout of the headings in each category and paste it in your field notebook. It will remind you what to include in your field notes.

EVENT INFORMATION: This information applies to all the collecting area.

Date: YYYY-MM-DD or DD Mon YYYY format (e.g., 2024-03-21 or 21 Mar 2024).

Associated collectors: Other people with you. They need not be botanists. Use formal names. Do include titles such as Dr. or Prof.

Admin Region: Country, province/region/state, district, smaller region. Countries are level 1 regions. The names used for lower level within a country vary. Ask your collection manager what to use.

Locality: The information should enable somewhere else to locate your collecting site. It may include distance and compass direction from a location that can be found; state if distance along a road or trail; for valleys, state where in the valley and whether you were on the valley floor, its foothills, or which slope; for towns, between which streets; if on a campus, near which building.

Georeference data: There are 5 fields: *coordinates*, *how determined*, *datum, uncertainty, method of determination*, and *remarks*. See "Background" for explanation of *datum* and *uncertainty*. *How determined* might be Cell phone, GPS, or map. If determined later, it might be Google Maps or

Geolocate. *Remarks*: state whether coordinates are for the centre of the collecting area, a point on the edge of the area, or a point along a trail or road. For further information on these fields see "Georeferencing – a quick reference guide", a general overview of the topic, and "Geographic coordinates plus" for more information on the fields used by OpenHerbarium.

Habitat: Physical features, then biological features. *Physical*: flat land, slope, cirque; if slope, facing what direction, how steep; soil characteristics (clay, sandy, loam, rocky); substrate (limestone, granite, etc.) if known. *Biological*: vegetation type (grassland, meadow, forest, shrubby area, savannah, pasture, cultivated field); the 3 most abundant species; % canopy cover from trees & shrubs; whether disturbed or not and if so, by what.

Substrate: This field is important for those collecting fungi (including lichens) and bryophytes, but it is probably best to provide the information for individuals specimens rather than the area as a whole. An exception would be if the event was a study of all the plants and fungi growing on a particular log or rock. If collecting vascular plants, it is often left blank.

Associated species: Use scientific names; start with the 3 dominant species, add others you (or someone with you) identifies in the area.

SPECIMEN INFORMATION: For each specimen, make a line for its number and name, follow that with other lines as needed for more precise information than given in the event information.

Specimen: Number, name (record family if that is lowest level known; can be added later).

Additional notes on locality/habitat: Examples: near stream, on rock, where protected by shrubs, in shady areas, adjacent to cultivated field, in cracks of road.

Substrate: This field is important for those collecting fungi (including lichens) and bryophytes. If collecting vascular plants, it is often left blank.

Descriptive notes: Emphasize those not preserved by specimen, e.g. flower colour; height; if woody, whether tree or shrub; if herbaceous, whether annual or perennial; if perennial the kind of underground parts (collect bulbs/corms rhizomes for only one specimen from a site, population conservation is important); sap color.

Occurrence notes: Uncommon or abundant; cultivated or not; if so, why (food, medicine, cosmetic use, ornamental); source of information on use (male, female, age group, occupation; do not use names without permission).

Voucher: Name of specific project for which the specimen was collected.

Preparing herbarium labels, part 2 explains how to enter the data from your field notes into OpenHerbarium, the step that precedes printing labels.

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