

**Division of Arthropods**  
**Museum of Southwestern Biology**  
The University of New Mexico

**Specimen Labels**

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All arthropod museum specimens must be properly labeled as to geographic collection locality, date, and the collector's name. All specimens also should eventually have a taxonomic name label. Specimen labels include those for specimens stored dry on insect pins, those preserved in ethanol, and those preserved on microscope slides. Different kinds of labels are used for those different preservation methods, yet all should contain the same type of information. The following document provides information on how to prepare arthropod specimen labels for the MSB Division of Arthropods collection.

Standard formats have been developed for arthropod specimen labels. Most general entomology books provide information on specimen label preparation. Below are instructions for the preparation of arthropod specimen labels in a format that MSB Division of Arthropods recommends.

## **Types of Labels**

### **1. Locality Label**

Arthropods specimens should be labeled with a locality label and with a taxonomic name label. The locality label is a description of where, when, and by whom the specimen was collected. The locality label should at minimum include:

**Country, state (territory, province), and county (township)** information should be presented across the top of the label. The country written fully in all upper case (except USA is okay), state, province or territory may be abbreviated, and the county written in full, followed by *Co.* For example, *USA NM Bernalillo Co.*

**A general descriptive geographic location**, including a site name, how many kilometers and compass direction from the nearest major specific map location; town, mountain peak, lake, specific park or refuge, etc. All distances should be presented in metric units. Highway mileage marker information is an exception. The reference map location should be one that may be easily located on an atlas or on a typical state highway road map (e.g., AAA state map). For example, a label for a specimen collected at Cerro Colorado, 8 kilometers west of Albuquerque would read: *Cerro Colorado 8 km W Albuquerque*. Such locations should be measured along the compass direction from the current landmark or political boundary. Such boundaries will change over time as towns grow, however one referring to such localities in the future, may obtain a historic map for any given label

date. State, County, and City government offices keep historic maps which may be used for such reference.

For a reference point such as Albuquerque that represents a large geographic area, measure distance and direction from the nearest portion (western city limits) at that time. If measured on a highway or road, include the name of the road or highway (e.g., hwy.101). An example could be: *Cerro Colorado, 1 km S I-40, 8 km W Albuquerque*. Mile post markers are usually present along all US and state highways, and kilometer markers along Mexican highways. Use highway mile markers as reference points, when available. Note that highway name numbers and mile or kilometer numbers do change over time. However, one referring to such locations in the future may obtain historic maps to locate highway mile/kilometer locations for given label dates.

**A specific geographic location** (within one kilometer if possible), including latitude, longitude, or UTM, or USGS Range, Township, and section, or a more detailed descriptive location than the general location. The specific location is very important so that precise localities may be revisited for researchers to sample more specimens. GPS units are now commonly used to provide precise latitude and longitude coordinates, to which one may navigate back to in the future. Most GPS units present Latitude and Longitude in decimal form. Record data with at least two digits to the right of the decimal point for better precision. For example N 35 1.79 W 106 54.16. UTM units also may be used, but take more label space. For example: Z12 N7874900 E768500. Range, Township, and Section values may be read off of many topographic maps. Range, Township and Section are useful, but not as precise as latitude and longitude coordinates. One section is one mile<sup>2</sup>. For example: R 12 W T 9 N Sec 25

**Date of collection.** The date should include the year, month and day. Various styles are used for date. The older style is to use a combination of Roman numerals and regular numbers for a sequence of day, month in Roman numerals, and year. So, August 24, 2000 would read: 24-VIII-2000. We recommend a less ambiguous format of: day month and year, where the 3-letter month abbreviation is used instead of Roman numerals (you may also write the full month name if you have adequate space on the label), such as: 24 AUG 2000. This format is less likely to cause month/day interpretation errors. If specimens were taken from traps or other situations where actual capture was during some time period, such as pitfall traps open for one month, then use that time period as the date. For example 12 JUL-15 AUG 2000. Be sure to add collection method on another label.

**The name of the person(s)** collecting the specimen should appear at the bottom of the label. The last name alone, or with initials, is generally used. The traditional format is to write: collected by, the name of the person(s). Collected is abbreviated to "coll." and the name(s) abbreviated to the last name(s) only, or the first initials and the last name(s). For example: coll. J.Smith, or: coll. J.Smith&R.Jones

## 2. Additional Information Labels

Additional information relevant to the collection of the specimen should be included either on the locality label or as a separate label positioned beneath the locality label. Such additional information would be collection method, and/or habitat or host. For example, if collected with a light trap, simply state “light trap” somewhere on the label. If the habitat was a pond, state “pond” on the label, or forest, or grassland, etc.. If it was collected from a Ponderosa pine tree, state “on *Pinus ponderosa*” on the label. These kinds of information are usually omitted, but often important and useful, well worth an extra label.

## 3. Taxonomic Name, Determination Label

The taxonomic name label provides the name of the specimen, to the lowest taxonomic rank possible (species or subspecies). Until the specimen has been identified by a taxonomic specialist, this label is usually and appropriately absent. However, if the taxonomic name of the specimen is known to the Order, Family, or Genus level, then providing a label with that name is appropriate. Generally, specimens do not have a taxonomic name label until determined by an expert. Ultimately, all specimens should be identified to the species or subspecies rank, and include the name authority, or initials of the person who described the species. The taxonomic name label also should include the name of the person who identified the specimen. The person’s name is placed across the bottom of the label, along with the year that the determination was made. The format is generally: determined by (abbreviated: det.), name, year. An example would be: det. J.P.Smith 2000. When specimens are re-determined by another authority, in the case of previous misidentifications, or taxonomic name changes, the old determination label should be placed upside down, beneath the new determination label.

## Labels for Different Preservation Methods

Arthropod specimens may be preserved dry on pins, in vials of ethanol, or on microscope slides. Each type of preservation method requires slightly different types of labels. All arthropod specimen labels are small, and must be clearly hand written or computer generated and printed with black, water-proof ink, on white, acid-free, archival quality paper.

Specimens **pinned dry** include insects mounted on insect pins or paper points on pins. Labels are positioned under the specimen on the pin. A locality label is on top, and a taxonomic identification label underneath the locality label. The labels should be oriented parallel to the longitudinal axis of the specimen, positioned to be read from the left side of the specimen. Pin labels should be small, generally close to a 1 cm by 2 cm rectangular label, with rows of text parallel to the long axis of the label. The print size should be small and clear. If computer generated, a font size of 4 or 5 should be used. If hand-

written with ink, a letter size comparable to 4 or 5 font size should be used, and printed clearly, so that someone else can easily read the label. Hand written labels should be printed only, no cursive. The labels should be made of cardstock or heavy paper, and the paper should be white and acid free archival quality. Insect label paper of archival quality may be purchased from BioQuip, Inc. If labels are printed from a computer, then water-proof blank ink cartridges must be used. Laser printer ink is water-proof. Ink in most ink-jet printers is not water-proof. If labels are hand written, water-proof black ink must be used. Micron, Pigma Micro-tip, size 005, water-proof black ink pens are ideal for hand-writing labels. Micron pens may be purchased from BioQuip, Inc., as well as office supply and book stores.

Labels should be placed on the pin under the specimen. The long axis of the labels should be parallel to the long axis of the insect specimen. Pointed specimens are often perpendicular to the label, depending on the size of the specimen compared to the paper point. The locality label should be positioned about 1 cm beneath the specimen, additional collection information labels should be placed under the locality label, and the taxonomic name, or determination label should be placed at the bottom of the pin. See the example diagram below.

Specimens preserved in **ethanol vials** should be labeled with locality and taxonomic name labels, placed inside the vial with the specimen. Those labels must be printed with ethanol-proof ink. The labels placed inside of specimen vials may be of various sizes, depending upon the size of the vial. The label must fit within the vial. We recommend using pinned specimen label size and format. Basically, use the same types of labels for both pinned specimens, and specimens preserved in ethanol. The only significant difference is that the ink must be ethanol-proof, and the label paper must be alcohol/chemical resistant (e.g.: Forbon, Resistal, 100% rag content, Tyvek™).

Specimens preserved on **microscope slides** should be labeled with microscope slide labels. Self-adhesive 2.5 by 2.5 cm slide labels may be purchased from a biological supply company such as BioQuip. Two labels are generally placed on each slide. The locality/collection label is placed on the left side of the slide, and the taxonomic name/determination label is placed on the right side of the slide. The same information and format described above for pin labels should be used for slide labels. An additional collection method label may be placed on the back side of the slide directly behind the locality label, if needed.

## Example Labels

Locality Label:

USA NM Bernalillo Co  
1 km S I-25, 8 km W  
Albuquerque, 1752 m el.  
N 35 1.79 W 106 54.16  
23 August 2000  
coll. R. Anderson

Other Information:

desert grassland, 2000 m elev.  
sweep net from *Atriplex canescens*

Determination Label:

*Aeolopledes elegans* (Scudder)  
Det. D.C. Lightfoot 2001

Note: We recommend 4 font size, Arial font as used in the examples above. These labels were created with MS Word, using the line drawing feature. The lines around the labels are not necessary, but used above to define the appropriate label size.

## Label Preparation and Production

Labels may be carefully handwritten, or printed. Computer software and laser printers may be used to produce blank labels for hand printing, and to produce complete labels ready to print and cut. The MSB Arthropod Division uses MS Excel to produce labels and blank templates. You may acquire MS Excel files with different types of label templates which you may edit and modify the text to produce your own labels. Please inquire about obtaining these files.

Labels on computer printed sheets are best cut initially into long strips by use of a counter top paper cutter. Individual labels may then be hand cut with sharp scissors from the long strips.

Cut labels may then be placed on standard wooden pinning blocks, or a dense plastic foam (e.g., Styrofoam) surface, and punctured by and pushed onto the pin underneath the specimen. The different types of labels should be positioned underneath the specimen as described above.

If you will be donating your specimens to the Arthropod Division, MSB (e.g., research voucher specimens), then you may inquire for assistance in label preparation, including use of museum label paper, label spreadsheet templates, and printing.