

Specimen Management System for California Herbaria (SMASCH): Procedures Excluding Accession Data Entry

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Documentation of policies, procedures, and conventions associated with barcoding, the Jepson Place Name Index, annotations and annotation label printing, accessions that are types, collection and collection label printing, modified from the version of 9 February 1996 (...proc.excl.data.entry), for the purpose of meeting production goals set forth in the NSF Site Review and Program Summary of DEB 94-00665, both based on the Site Visit of 12-14 February 1996, by replacing "C. Annotation History Window" from "...Accession Data Entry" and "III. Annotations" below with "H. Folder Name Window" and "V. Folder Label Printing" in the appropriate documents, and adding "VI. Specimen and

Collections," "VII. Collection Label Printing," and "VIII. Accessions that are Types".

/smasch_dist/doc/oprocs.ps

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I. BARCODING

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A. PROCEDURES

See the program documentation for instructions about producing barcode labels using the *Index Herbariorum* abbreviation for your herbarium.

1. *Turning on the equipment and getting started*

- a. Turn on the computer, monitor, and barcode printer.
- b. After a minute or two, introductory material including preparators' names and numbers will appear on the screen. After the message, "Enter preparator's number from above list", type the appropriate number and depress "ENTER" (to test the barcode printer without saving the number printed, type "0"). The following messages appear on three separate lines: "Preparator is _____"; "Creating barcode file BC_____"; and "UC". There is no need to respond to any of these messages.

2. *Producing barcode labels one at a time .*

If you are producing barcode labels consisting of the *Index Herbariorum* abbreviation for your herbarium followed by a pre-assigned accession number for each sheet (or other object), you will have to produce the labels one at a time. With the system already set up to produce labels with the appropriate herbarium abbreviation, simply key in the accession number for each sheet and press the appropriate button to print the label.

3. *Producing barcode labels in series*

- a. In order to generate a series of barcode labels in numerical order, without having to key in each accession number individually, rethread the barcode printer so that the labels do not separate from the backing sheet. There is a faceplate attached to the floor of the barcode printer with a thumbscrew. Remove it and screw it in on the face of the barcode printer where the printed labels come out.
- b. At the C:\BARCODES> prompt, type: multi
- c. The program displays the contents of the multi.ini file, showing how the barcode will be set up. Type y to accept this. You will be prompted for beginning and ending accession numbers. Type y to start printing the series. The program will close when the barcode printing is complete. Remember to remove the faceplate and rethread the printer to return to print labels one at a time.

4. *Exiting and re-entering the barcoding program*

- a. To exit the barcoding program, depress "q" (for "quit"). The prompt "C:\BARCODES=>" will appear. The equipment may now be turned off.

I. BARCODING

b. To re-enter the barcoding program after exiting it but before turning off the equipment, type “barcodes” after the prompt “C:\BARCODES=>” and depress “ENTER”.

B. CONVENTIONS and PITFALLS

1. Observe the normal, high degree of care in handling herbarium sheets, remembering that the accumulated loss of plant and other material over time will greatly diminish their value. Avoid activities that will produce fragments or cause them to be separated from the sheets to which they belong. Do not flex or bend the sheets, do not turn them upside down or even hold them at an angle, do not “thumb” or “page” through them, and do not slide them over one another. In an accumulating pile, make sure each added sheet is aligned with those below rather than attempting to align all sheets periodically or at the end, when the weight of sheets above will make it difficult not to damage the sheets below. Loose fragments should be placed in envelopes attached to the sheets; if no envelope is present, one should be obtained and affixed according to accepted procedures. For obvious reasons, fragments of less than absolutely certain origin must be discarded.

2. Select for the barcode label an area on the sheet according to the following, decreasing order of preference: upper right corner; along the top margin, as far to the right as possible; along the right margin, as close to the top as possible; or along the left margin, as close to the top as possible. As a last resort, any available space may be used, and the label may be attached vertically or even diagonally.

3. When there is more than one accession on a sheet, each barcode label should be placed as close to its corresponding accession number stamp as possible, within the guidelines stated under item 2 and while leaving enough room for each of our annotation labels to be positioned in such a way that the accession number to which it applies is unambiguous. Placement of barcode labels immediately next to one another (side by side) should be avoided, as it may complicate barcode reading later. If not all of the accessions numbers on a sheet are from California, or if the sheet is too filled to allow room for barcode and other labels, or if there is need for repair, or if there is no accession number stamp at all, add the sheet to those previously set aside to be taken to the preparators for whatever action is necessary.

4. Clear the area selected of any loose plant fragments, dirt, soil, or other material and press firmly on the label to adhere it completely to the sheet. Do not allow the barcode label to overlap anything else attached to the sheet, such as the plant material itself or other labels or envelopes. The barcode label may be folded under or, preferably, trimmed as necessary to fit in the area selected, as long as all that is printed on the label remains visible.

II. JEPSON PLACE NAME INDEX

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We include below procedures, conventions, and pitfalls associated with automating the Jepson Place Name Index, primarily so users can better understand the resource and how to consult it; users may find the list of abbreviations especially helpful.

A. PROCEDURES

1. Selecting the Jepson Herbarium Place Name Index window

- a. On the main SMASCH menu window, place the arrow cursor on the button marked “Geographic Information” and hold down the menu button on the mouse. While still holding down the menu button on the mouse, move the arrow cursor to “Jepson Place Name Index” on the menu that appears. After “Jepson Place Name Index” is highlighted (indicated by appearance of black background), release the menu button on the mouse, thus selecting “Jepson Place Name Index.”
- b. After a short time (less than one minute), a window entitled “The Jepson Herbarium Place Name Index” will appear with a caret cursor (upside down “v”) in the first field (Place Name). The caret cursor may be moved from field to field by pressing the Tab key or the Return key; it may be positioned within a field by use of the directional keys on the numeric pad.

2. *Entering and appending a record*

To enter this sample card:

| | |
|---------------------------------------|----------------|
| El Pajaro Springs | Santa Cruz Co. |
| sprs., 1/2 mi. nw. of Chittenden sta. | |
| U.S.G.S. Water-Supply Paper 338. | |

- a. In the Place Name field, type “El Pajaro Springs”.
- b. In the Description field, type “Santa Cruz Co, sprs, 1/2 mi nw of Chittenden sta”.
- c. In the Source field, type “U.S.G.S. Water-Supply Paper 338”.
- d. In the Location Kind field, type “spring”.

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- e. In the Parent Place Name field, type “Santa Cruz”.
- f. Place the arrow cursor on the Append button and depress the select button on the mouse for about one second (rarely, two or three seconds are required), being careful not to move the arrow cursor off the Append button while doing so (moving the arrow cursor off the Append button too soon negates the selection). The scrolling of information in the Command Tool window indicates that the record in question is being appended; when the scrolling stops, the record has been appended. The process of appending a record may require up to 30 seconds when the system is slow.
- g. Place the arrow cursor on the Clear button and single-click the select button on the mouse to ready the system for entering another record.

3. *Exiting the Jepson Herbarium Place Name Index window*

To exit the Jepson Herbarium Place Name Index, place the arrow cursor on the “Done” button and single-click the select button on the mouse.

B. CONVENTIONS and PITFALLS

1. *Abbreviations*

- a. Abbreviations both encountered and used thus far, with their presumed and intended meanings, respectively (periods not indicated)

| | |
|---------------------------------|--------------------------|
| ABC, A-B-C (both entered “ABC”) | Bishop’s A-B-C-Guide |
| alt | altitude |
| (A)assn | (A)association |
| (A)auto | (A)automobile |
| betw | between |
| c | circa, central |
| ca | circa |
| cen, cent | central |
| CA, Cal, Calif | California |
| (C)co | (C)county |
| (C)cos | (C)counties |
| (C)cr | (C)creek |
| (E)e | (E)east(erly, ern) |
| el, elev | elevation |
| Fk | Fork |
| ft | foot, feet |
| gl, gul | gulch |
| km | kilometer |
| ldg | landing, lodge |
| m | mile, meter |
| (M)mdw(s) | (M)meadow(s) |
| mi(s) | mile(s), |
| (M)mt(s), (M)mtn(s) | (M)mount, (M)mountain(s) |

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| | |
|---|---------------------------------|
| (N)n | (N)north(ern) |
| (N)natl | (N)national |
| Nev, NV | Nevada |
| (N)no | (N)north(erly, ern), (N)number |
| (O)off, (O)offic | (O)office, (O)official |
| Ore, OR | Oregon |
| (P)pk | (P)peak, (P)park |
| (P)po | Post Office |
| (P)pt | (P)point |
| (Q)quad, (Q)quadr (both entered "quad") | (Q)quadrangle |
| (R)r | R)ranger, (R)river, (R)road |
| (R)rd | (R)road |
| (R)reg | (R)region, (R)regional |
| (R)riv | (R)river |
| RR, rr, Ry | (R)railroad |
| (S)s | (S)south(erly, ern), (S)station |
| (S)spr(s) | (S)spring(s) |
| (S)sta(s) | (S)station(s) |
| (S)stmr(s) | (S)steamer(s) |
| (S)sur(s), (S)surv(s) | (S)survey(s) |
| (T)trib | (T)tributary |

b. Ambiguity

There is ambiguity in the list above in that, for example, some abbreviations stand for more than one word (e.g., ldg means landing or lodge) and some words are abbreviated in more than one way (e.g., central abbreviated c, cen, or cent). The correct meaning usually may be determined from context.

c. Periods

Abbreviations occurring in the Place Name field are to be followed by periods, whether or not periods were used on the original cards, because this is the more correct form for proper names and because having all abbreviations presented in one way will facilitate searching.

Abbreviations occurring in the Description field should not be followed by periods, whether or not periods were used on the original card, primarily because correctness of form is not much of an issue here and it is quicker and takes less space to simply exclude them; actually, a good deal of inconsistency has been allowed in this area because searches will not often be conducted on this field.

2. *Apostrophes*

When entering or searching for a word containing a possessive, such as Tom's Bridge, two apostrophes are needed (Tom''s Bridge) because a single apostrophe is recognized as an unfinished quote and as such renders the record unappendable.

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3. *Commentary*

Any commentary provided by the typist is to be included in <>, in part because parentheses and squared brackets have already been used by those who originally prepared the cards. Such commentary might include but is not restricted to instances that otherwise might be misconstrued as typing errors; such instances are to be indicated by <sic>.

4. *Counties*

The counties of California already have been entered into the database as places for which the location kind is County. Thus, there is no need to and one should not type in "County" in either entering or searching for a California county. Typing in "County" in entering for example "Calaveras" will mean that the name of this county will reside in the database as "Calaveras County County," while typing in "County" in conducting a search for this county will turn up either nothing or "Calaveras County County" if it has been entered incorrectly. "El Dorado" as a county name in the Parent Place Name field must be entered as two words to be recognized and accepted by the database; in all other instances, this or the "Eldorado" form may be used to represent accurately what is on a card.

5. *Location Kind*

Something must be entered in the Location Kind field in order to append a record. Unfortunately, such determinations often are difficult to make, either because of ambiguities in the abbreviations used on the cards or because assignment of a known entity to location kind is uncertain. Assignments usually can be made via Appendix B of the U.S.G.S. Geographic Names Information System (GNIS) User's Guide, which includes feature class terms, abbreviations, definitions, and synonyms for cultural as well as natural features. Entities from the cards that do not appear in this list as a feature class term or synonym usually may be added as a synonym under the appropriate term based on the definition with which it most closely agrees. If there is no appropriate term in this list, the entity should be added as its own feature class term with its own definition. Whether added as its own feature class term or as a synonym under an existing entry, such additions should be made in consultation with other members of the staff.

In cases where more than one location kind actually is represented by a single card, a separate record should be entered for each. For example, a single place on a river that runs through a canyon would require two records, each with the same Parent Place Name and Place Name but differing in Location Kind (one stream, the other valley).

In cases where there is insurmountable uncertainty about the designation of Location Kind, "other" may be indicated so as to "fool" the system into

appending the records in question. Such cases can then be accumulated for consideration at a single time by other members of the staff.

6. *Nonidentical places of the same Parent Name, Place Name, and Location Kind*

The database was designed with the intention that each entry could be uniquely identified by the assignment of a combination of three designations: Parent Place Name, Place Name, and Location Kind. Unfortunately, sometimes places that actually are not the same, such as different points along a single river in a single county, have the same parent (the county), are known by the same name (the name of the river), and are of the same location kind (stream). This is a problem because the system is also designed to prevent entry of the same place more than once, for obvious reasons, so that only the first of more than one nonidentical place with the same three designations could be entered into the database.

An attempt to enter a place name that is not unique with respect to Parent Place Name, Place Name, and Location Kind will elicit from the computer a beep and an error message.

The addition of latitude and longitude to the combinations of designations eventually will solve this problem, but until we are in a position to easily and quickly obtain this information for each place in the JPNI, we will “fool” the system into accepting a nonidentical place that has not been uniquely identified by adding to the name a space, a hyphen, and a lower case letter in alphabetical sequence. Thus, if there were four nonidentical places named Alder Creek, the first would be entered and reside in the database as “Alder Creek,” the second as “Alder Creek_ a,” the third as “Alder Creek_ b,” and the fourth as “Alder Creek_ c” (where “_” represents a space).

7. *Number of records in the database*

The total number of records in the database may be obtained by typing “countjeps” after the % prompt in the Console window when in the database or in a Command Tool window when not.

8. *Problem cards*

Cards with problems that cannot be solved by means described here should be marked with paper clips for possible consideration in the future. Such cards include but are not restricted to those having illegible handwriting or missing information; in some cases the problems might be resolved when the accessions on which the cards were based are entered into the database.

9. *Queries from the database*

In some cases the system will present its own queries, which normally appear in small windows outside the data entry screen. For example, attempts to enter “Nevada” as a Parent Place Name will elicit a question about the grandparents

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of the Place Name, requiring the typist to select either “California” or “United States of America” for Nevada as a county in California or a state in the United States, respectively.

10. Querying the database

Querying (i.e., searching) the database may be complicated by the fact that a given place name might have been included in the original JPNI in any one or more of more than one possible form. For example, “Green Mountain” might reside in the database as “Green Mountain,” “Green Mtn.,” “Green Mt.,” or any combination of these three possibilities. Rather than searching for each form independently, it might be more efficient to make use of a wildcard (here, %). In this way, Green Mountain would be brought up in a single search, for “Green M%,” regardless of the form or forms in which it might actually reside in the database. Such an approach is especially useful where many potential forms exist, and would be much less desirable if the wildcard were to bring up a large number of irrelevant records (e.g., “Green %”).

Any attempt to query the database for a Parent Place Name or a Child Place Name constitutes a fatal error and results in immediate expulsion from the database.

11. Corrections

Mistakes discovered before a record is appended may be corrected simply, by positioning the caret cursor, retyping, and using the Delete key as needed. After a record has been appended, corrections may be made in the same way, and then saved by placing the arrow cursor on the Update button and single-clicking the select button on the mouse. Mistakes made in the Location Kind and Parent Place Name fields prevent the record from being appended in the first place.

III. ANNOTATIONS

A. Selecting the Annotations window

1. On the main SMASCH menu window, place the arrow cursor on the button marked “Annotations Information” and hold down the menu button on the mouse. While still holding down the menu button on the mouse, move the arrow cursor to “Annotations” on the menu that appears below. After “Annotations” is highlighted (indicated by appearance of black background), release the menu button on the mouse, thus selecting “Annotations”.
2. After a short time (less than one minute), a window entitled “Annotations” will appear with a caret cursor (upside down “v”) in the first field (Accession Number), unless it had been left elsewhere in the window earlier in the same SMASCH session. The caret cursor may be moved from field to field by

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pressing the Tab key or the return key; it may be positioned within a non-empty field by use of the directional keys on the numeric pad.

B. Entering and appending a record

1. With the arrow cursor anywhere in the “Annotations” window and the caret cursor in the “Accession Number” field, read the barcode label, making sure that the line of red light coming from the barcode reader intersects all of the bars comprising the barcode. The number will be read into the “Accession Number” field (or any other place the insertion point happens to be at the time of the reading).
2. It is not necessary to enter a value into the “Annotation Date” field in order to append a record; the program automatically incorporates the current date and time from the computer’s internal calendar and clock, regardless of what is shown in this field.
3. Enter the appropriate abbreviation of the reference used to identify the plant material in question in the “Reference Used” field. If the abbreviation is either misspelled or not already present in the appropriate authority file in the database, the message “Unknown Reference Used” will appear under the “Append” button in response to an attempt to append the record. If the correct spelling of the abbreviation is unknown to the user yet already present in the database, it or a list of possibilities from which to choose will appear in the field or in the window from the appropriate authority file after the known part of the name and a wildcard (e.g., J%, Jep%, Jepson M%, etc., for Jepson Man.) is entered in the field and an attempt is made to append the record, if all other necessary information has been provided (see item 8). The correct choice may be made from the list of possibilities that might appear by placing the arrow cursor on any part of the line on which the reference abbreviation appears and single-clicking the select button on the mouse. After the selection has been highlighted (indicated by the appearance of a dark blue background), it may be incorporated into the “Reference Used” field by placing the arrow cursor on the “Accept” button and single-clicking the select button on the mouse.
4. Enter the last name of the person who has provided the identification to be used in the “Annotator” field. If this name is either misspelled or not already present in the appropriate authority file in the database, the message “Unknown Annotator” will appear under the “Append” button in response to an attempt to append the record. If the correct spelling of the name is unknown to the user yet already present in the database, it or a list of possibilities from which to choose will appear in the field or in the window from the appropriate authority file after the known part of the name and a wildcard (e.g., R%, Ros%, Rosat%, etc., for Rosatti) is entered in the field and an attempt is made to append the record, if all other necessary information has been provided (see item 8). The correct choice may be made from the list of possibilities that might appear, and that choice

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may be incorporated into the “Annotator” field, in the manner described under item 3.

5. Enter the scientific name and the appropriate abbreviation of the author who published it in the “Determined Taxonomic Name” field. If the scientific name or author abbreviation is either misspelled or not already present in the appropriate authority file in the database, the message “Unknown Determined Taxonomic Name” will appear under the “Append” button in response to an attempt to append the record. If the correct spelling of the scientific name or author abbreviation is unknown to the user yet already present in the database, they or a list of possibilities from which to choose will appear in the field or in the window from the appropriate authority file after the known part of the name and a wildcard (e.g., Ach%, Achillea m%, Achillea mill%, etc., for *Achillea millefolium* L.) is entered in the field and an attempt is made to append the record, if all other necessary information has been provided (see item 8). The correct choice may be made from the list of possibilities that might appear, and that choice may be incorporated into the “Determined Taxonomic Name” field, in the manner described under item 3.

6. A note of up to 255 characters and spaces may be entered in the “Note” field if necessary. Usually, such notes indicate the ways in which the plant material in question does not conform to the taxon to which it has been assigned by the annotator, based primarily on information given in the key to that taxon in the reference used for identification. In entering records for many sheets of the same taxon in one session, it is advantageous to group together sheets with the same or similar notes, so that minimal change will need to be made from one record to the next (see also item 9).

7. After checking that all information is correct (with the exception of that in the “Annotation Date” field, see item 2), place the arrow cursor on the Append button and single-click the select button on the mouse. The scrolling of information in the Command Tool window indicates that the record in question is being appended; when the scrolling stops, the record has been appended.

8. If the “Accession Number” field is left empty, the message “Can’t append without a value for Accession Number; Please enter a value” will appear under the “Append” button in response to an attempt to append the record. Similar messages will appear if the “Annotator” or “Determined Taxonomic Name” fields are left empty. Although no such message will appear and there *will be* scrolling of information in the Command Tool window in response to an attempt to append a record for which the “Reference Used” field is left empty, a query based on the other information provided will retrieve no record, suggesting that it in fact has not been appended. The requirement to enter values for the “Reference Used”, “Annotator”, and “Determined Taxonomic Name” fields may be temporarily satisfied by entering either a wildcard alone or, preferably, the known part of each and a wildcard (see items 3-5).

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Especially in the case of “Determined Taxonomic Name”, it is much more efficient to provide as much as possible before the wildcard

9. To enter and append records corresponding to more than one sheet for which all information except the accession number is the same: delete the accession number of the previous record after it has been appended (with the caret cursor in the “Accession Number” field, depress “Control” and “a” to move the caret cursor to the beginning, if necessary, and then “Control” and “k” to delete the number); read in the accession number of the next sheet; and then proceed as described under item 7. To enter and append a record corresponding to a sheet for which some information differs from that of the preceding sheet, make the necessary changes to the window after the preceding record has been appended, and then proceed as described under item 7; if all information differs, place the arrow cursor on the Clear button, single-click the select button on the mouse, and repeat items 1 through 8.

C. Correcting a record

Mistakes discovered before a record is appended may be corrected simply, by positioning the caret cursor, retyping, and using the Delete key as needed. After a record has been appended, corrections may be made in the same way, and then saved by placing the arrow cursor on the Update button and single-clicking the select button on the mouse. If it is necessary to retrieve a record before correcting it, read the accession number into the “Accession Number” field as described in item 1, place the arrow cursor on the “Query” button, and single-click the select button on the mouse. If it is necessary to correct more than one record, it is generally fastest to conduct the query in such a way that only the records needing to be corrected are retrieved. In this case, a specific record must be selected from what appears in the table at the bottom of the “Annotations” window by placing the arrow cursor on any part of the line on which it appears and single-clicking the select button on the mouse. In response to this action, data for the record in question will appear in each of the fields above, where they may be corrected in the manner described in this paragraph.

D. Deleting a record

A record that has been appended may be deleted only after a query has been made for which it has been retrieved. It must be deleted from what appears in the table at the bottom of the “Annotations” window in response such a query, by placing the arrow cursor on any part of the line on which it appears and single-clicking the select button on the mouse. After the selection has been highlighted (indicated by the appearance of a dark blue background), it may be deleted from the database by placing the arrow cursor on the “Delete” button and single-clicking the select button on the mouse. A window entitled “Xdb Confirmer” will then appear, and the deletion may be confirmed by placing the

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arrow cursor on the “Confirm” button and single-clicking the select button on the mouse.

E. The “Delete” button vs. the “Clear” button

Note that while the “Delete” button will delete a record from the database, the “Clear” button merely clears the fields in which data appears in the window. The contents of any one field may be recalled after invoking the “Clear” function by: highlighting them (i.e., if only one word or number is involved, by placing the arrow cursor anywhere on the word or number and double-clicking the select button on the mouse, or, if more than one word or number is involved, by placing the arrow cursor anywhere on a word or number and triple-clicking the select button on the mouse); placing the arrow cursor on the “Clear” button and single-clicking the select button on the mouse; placing the arrow cursor back in the field in question; and depressing the adjust (middle) button on the mouse.

IV. ANNOTATION LABEL PRINTING

A. Selecting the Annotation Label Printing window

1. On the main SMASCH menu window, place the arrow cursor on the button marked “Annotations Information” and hold down the menu button on the mouse. While still holding down the menu button on the mouse, move the arrow cursor to “Annotation Labels” on the menu that appears below. After “Annotation Labels” is highlighted (indicated by appearance of black background), release the menu button on the mouse, thus selecting “Annotation Labels”.
2. After a short time (less than one minute), a window entitled “Annotation Label Printing” will appear with a caret cursor (upside down “v”) in the first field (Determined Taxonomic Name), unless it had been left elsewhere in the window earlier in the same SMASCH session. The caret cursor may be moved from field to field by pressing the Tab key or the return key; it may be positioned within a non-empty field by use of the directional keys on the numeric pad.

B. Entering and appending annotation label data

1. Enter the scientific name and the appropriate abbreviation of the author who published it in the “Determined Taxonomic Name” field. If the scientific name or author abbreviation is either misspelled or not already present in the appropriate authority file in the database, the message “Unknown Determined Taxonomic Name” will appear under the “Append” button in response to an attempt to append the entry, if all other necessary information has been

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provided (see items 3, 4, and 7). If the correct spelling of the scientific name or author abbreviation is unknown to the user yet already present in the database, they or a list of possibilities from which to choose will appear in the field or in the window from the appropriate authority file after the known part of the name and a wildcard (e.g., Ach%, Achillea m%, Achillea mill%, etc., for *Achillea millefolium* L.) is entered in the field and an attempt is made to append the entry, if all other necessary information has been provided (see items 3, 4, and 7). The correct choice may be made from the list of possibilities that might appear by placing the arrow cursor on any part of the line on which the name appears and single-clicking the select button on the mouse. After the selection has been highlighted (indicated by the appearance of a dark blue background), it may be incorporated into the “Determined Taxonomic Name” field by placing the arrow cursor on the “Accept” button and single-clicking the select button on the mouse.

2. Enter in the “Print Count” field the number of labels to be printed with the information to be specified in the various other fields. Each sheet of label stock paper accommodates the printing of 30 labels, although any number may be entered in the “Print Count” field and subsequently produced.

3. It is not necessary to enter a value into the “See Database Note?” field in order to append an entry. If such a note has been or will be included in the annotation table in the database, enter a “1” in this field. If there is or will be no such note, nothing needs to be entered (the default value for this field is “0”, which means no note has been included). Entering a “1” in this field results in the printing of a workstation icon in the lower right corner of a resulting annotation label, indicating that the database must be consulted for an important note regarding the annotation.

4. It is not necessary to enter a value into the “Annotation Year” field in order to append an entry; the program automatically incorporates the current year from the computer’s internal calendar, regardless of what is shown in the field.

5. Enter the appropriate abbreviation of the reference used to identify the plant material in question in the “Reference Used” field, unless the reference used is the Jepson Manual (the default value, abbreviated “Jepson Man.”). If the abbreviation is either misspelled or not already present in the appropriate authority file in the database, the message “Unknown Reference Used” will appear under the “Append” button in response to an attempt to append the entry, if all other necessary information has been provided (see items 3, 4, and 7). If the correct spelling of the abbreviation is unknown to the user yet already present in the database, it or a list of possibilities from which to choose will appear in the field or in the window from the appropriate authority file after the known part of the name and a wildcard (e.g., J%, Jep%, Jepson M%, etc., for Jepson Man.) is entered in the field and an attempt is made to append the entry, if all other necessary information has been provided (see items 3, 4, and 7). The correct choice may be made from the list of possibilities that might appear, and

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that choice may be incorporated into the “Reference Used” field, in the manner described under item 1.

6. Enter the last name of the person who has provided the identification to be used in the “Annotator” field. If this name is either misspelled or not already present in the appropriate authority file in the database, the message “Unknown Annotator” will appear under the “Append” button in response to an attempt to append the entry, if all other necessary information has been provided (see items 3, 4, and 7). If the correct spelling of the name is unknown to the user yet already present in the database, it or a list of possibilities from which to choose will appear in the field or in the window from the appropriate authority file after the known part of the name and a wildcard (e.g., R%, Ros%, Rosat%, etc., for Rosatti) is entered in the field and an attempt is made to append the entry, if all other necessary information has been provided (see items 3, 4, and 7). The correct choice may be made from the list of possibilities that might appear, and that choice may be incorporated into the “Annotator” field, in the manner described under item 1.

7. If the “Print Count” field is left empty, the message “Can’t append without a value for Print Count; Please enter a value” will appear under the “Append” button in response to an attempt to append the entry. Similar messages will appear if the “Annotator” or “Determined Taxonomic Name” fields are left empty. The “Reference Used” field may be left empty if the reference used to identify the plant material in question is the Jepson Manual (the default value, abbreviated “Jepson Man.”). The requirement to enter values for the “Determined Taxonomic Name” and “Annotator” fields may be temporarily satisfied by entering either a wildcard alone or, preferably, the known part of each and a wildcard (see items 1 and 6). Especially in the case of “Determined Taxonomic Name”, it is much more efficient to provide as much as possible before the wildcard.

C. Correcting an entry

Mistakes discovered before an entry is appended may be corrected simply, by positioning the caret cursor, retyping, and using the Delete key as needed. After an entry has been appended, corrections may be made in the same way, and then saved by placing the arrow cursor on the Update button and single-clicking the select button on the mouse. If it is necessary to retrieve an entry before correcting it, enter a wildcard (“%”) in the “Determined Taxonomic Name” field, place the arrow cursor on the Query button, and single-click the select button on the mouse. If this action retrieves more than one entry, the one to be corrected must be selected from what appears in the table at the bottom of the “Annotation Label Printing” window by placing the arrow cursor on any part of the line on which it appears and single-clicking the select button on the mouse. In response to this action, data for the entry in question will appear in each of

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the fields above, where they may be corrected in the manner described in this paragraph.

D. Deleting an entry

An entry that has been appended may be deleted only after a query has been made for which it has been retrieved (see item E1). It may be deleted from the list that appears in the table at the bottom of the “Annotation Label Printing” window in response to such a query by placing the arrow cursor on any part of the line on which it appears and single-clicking the select button on the mouse. After the selection has been highlighted (indicated by the appearance of a dark blue background), it may be deleted by placing the arrow cursor on the “Delete” button and single-clicking the select button on the mouse. A window entitled “Xdb Confirmer” will then appear, and the deletion may be confirmed by placing the arrow cursor on the “Confirm” button and single-clicking the select button on the mouse.

E. Printing annotation labels

1. Before printing the labels, it is advisable to clear the screen and conduct a query to determine what will be printed when that command is invoked. This may be accomplished by: placing the arrow cursor on the “Clear” button; single-clicking the select button on the mouse; entering a “%” sign in the first position in the “Determined Taxonomic Name” field; placing the arrow cursor on the “Query” button; and single-clicking the select button on the mouse. One or more entries will appear in a table at the bottom of the “Annotation Label Printing” window, each comprising values under the headings “Determined Taxonomic Name”, “Print Count”, “See Database Note?”, “Annotation Year”, “Reference Used”, and “Annotator”. An entry may be corrected or deleted from this table by placing the arrow cursor on any part of the line on which it appears, single-clicking the select button on the mouse, and then proceeding in a manner described under item C or D, respectively.

2. The labels described in the table at the bottom of the “Annotation Label Printing” window will be printed by placing the arrow cursor on the “Print Labels” button and single-clicking the select button on the mouse.

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For the purpose of meeting production goals set forth in the NSF Site Review and Program Summary of February 1996, we decided to eliminate from our procedures both capture of Annotation History by Data Entry Assistants as well as Annotations (i.e., identifications of the plant material) by the Project Coordinator, opting instead to capture merely the plant name under which each accession is filed. Thus, Annotation History (“...Accession Data Entry”) and

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Annotations (this document) are replaced by Folder Name (“...Accession Data Entry”), and Annotation Label Printing (this document) is replaced by Folder Name Printing (this document).

The name on the species folder in which an accession is filed, as updated by the Project Coordinator for conformance with the nomenclature and taxonomy of *The Jepson Manual*, is entered through the Folder Name window (see “...Accession Data Entry”). The name to be used for the contents of a species folder appears on a label printed by the Project Coordinator, according to the procedures below, and placed by him in the lower left corner of the outside of the species folder, sometimes below but usually above the plant name already on the folder. Under the plant name and author abbreviation (conforming to APN) on this label are the words “contents of this folder entered 199_ into SMASCH as above”.

A. Selecting the Folder Label Printing window

1. On the main SMASCH menu window, place the arrow cursor on the button marked “Annotations Information” and hold down the menu button on the mouse. While still holding down the menu button on the mouse, move the arrow cursor to “Folder Labels” on the menu that appears below. After “Folder Labels” is highlighted (indicated by appearance of black background), release the menu button on the mouse, thus selecting “Folder Labels”.
2. After a short time (usually right away), a window entitled “Folder Label Printing” will appear with a caret cursor (upside down “v”) in the first field (Determined Taxonomic Name), unless it had been left elsewhere in the window earlier in the same SMASCH session. The caret cursor may be moved from field to field by pressing the Tab key or the return key; it may be positioned within a non-empty field by use of the directional keys on the numeric pad.

B. Entering and appending folder label data

1. Enter the scientific name and the appropriate abbreviation of the author who published it in the “Determined Taxonomic Name” field. If the scientific name or author abbreviation is either misspelled or not already present in the appropriate authority file in the database, the message “Unknown Determined Taxonomic Name” will appear under the “Append” button in response to an attempt to append the entry, if all other necessary information has been provided (see item 2). If the correct spelling of the scientific name or author abbreviation is unknown to the user yet already present in the database, they or a list of possibilities from which to choose will appear in the field or in the window from the appropriate authority file after the known part of the name and a wildcard (e.g., Ach%, Achillea m%, Achillea mill%, etc., for Achillea millefolium L.) is entered in the field and an attempt is made to append the entry, if all other necessary information has been provided (see item 2). The

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correct choice may be made from the list of possibilities that might appear by placing the arrow cursor on any part of the line on which the name appears and single-clicking the select button on the mouse. After the selection has been highlighted (indicated by the appearance of a dark blue background), it may be incorporated into the “Determined Taxonomic Name” field by placing the arrow cursor on the “Accept” button and single-clicking the select button on the mouse.

2. Enter in the “Print Count” field the number of labels to be printed with the information to be specified in the other fields. Each sheet of label stock paper accommodates the printing of 30 labels, although any number may be entered in the “Print Count” field and subsequently produced.

3. It is not necessary to enter a value into the “Annotation Year” field; the date of production of the label will automatically be entered here upon saving the record.

4. If the “Print Count” field is left empty, the message “Can’t append without a value for Print Count; Please enter a value” will appear under the “Append” button in response to an attempt to append the entry.

5. Repeat steps 1-4 for each plant name to appear on the folder labels.

C. Correcting an entry

Mistakes discovered before an entry is appended may be corrected simply, by positioning the caret cursor, retyping, and using the Delete key as needed. After an entry has been appended, corrections may be made in the same way, and then saved by placing the arrow cursor on the Update button and single-clicking the select button on the mouse. If it is necessary to retrieve an entry before correcting it, enter a wildcard (“%”) in the “Determined Taxonomic Name” field, place the arrow cursor on the Query button, and single-click the select button on the mouse. If this action retrieves more than one entry, the one to be corrected must be selected from what appears in the table at the bottom of the “Folder Label Printing” window by placing the arrow cursor on any part of the line on which it appears and single-clicking the select button on the mouse. In response to this action, data for the entry in question will appear in each of the fields above, where they may be corrected in the manner described in this paragraph.

D. Deleting an entry

An entry that has been appended may be deleted only after a query has been made for which it has been retrieved (see item E1). It may be deleted from the list that appears in the table at the bottom of the “Folder Label Printing” window in response to such a query by placing the arrow cursor on any part of the line on which it appears and single-clicking the select button on the mouse.

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After the selection has been highlighted (indicated by the appearance of a dark blue background), it may be deleted by placing the arrow cursor on the “Delete” button and single-clicking the select button on the mouse. A window entitled “Confirm Delete” will then appear, and the deletion may be confirmed by placing the arrow cursor on the “Confirm” button and single-clicking the select button on the mouse.

E. Printing folder labels

1. Before printing the labels, it is advisable to clear the screen and conduct a query to determine what will be printed when that command is invoked. This may be accomplished by: placing the arrow cursor on the “Clear” button; single-clicking the select button on the mouse; entering a “%” sign in the first position in the “Determined Taxonomic Name” field; placing the arrow cursor on the “Query” button; and single-clicking the select button on the mouse. One or more entries will appear in a table at the bottom of the “Folder Label Printing” window, each comprising values under the headings “Determined Taxonomic Name”, “Print Count”, and “Annotation Year”. An entry may be corrected or deleted from this table by placing the arrow cursor on any part of the line on which it appears, single-clicking the select button on the mouse, and then proceeding in a manner described under item C or D, respectively.

2. The labels described in the table at the bottom of the “Annotation Label Printing” window will be printed by placing the arrow cursor on the “Print Labels” button and single-clicking the select button on the mouse.

VI. Specimens and Collections

Specimen, Collecting Event, Collection Locality and Collection Labels

A. Specimen

Collected material is usually divided into specimens and sent to herbaria. This table stores information about the location of specimens.

1. Collector. The name of the individual who collected the specimen. The individual must be in the personal names table. Enter last name first. The % is a helpful way to enter the name information (e.g. Constance%).

2. Collecting Committee. The collector and any others who participated in the collecting event. The committee must exist in the committee table.

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Enter the collecting committee as it appears on the information you are using for data entry. The % is a helpful way to enter the committee information (e.g., L%Const%).

3. Prefix. Any characters before the collection number, such as letters or punctuation marks. If the collector uses two digits representing the year and a hyphen in her collection numbers, enter them in the prefix.

4. Collection Number. A numeric field. Enter only whole numbers here.

5. Suffix. Any characters following the collection number. If the collector uses letters or punctuation marks in the collection number, enter them here.

6. Institute. The Index Herbariorum acronym for the institution where the specimen is located. This acronym must be in the institute table.

7. Notes. Enter notes here.

B. Collecting Event

Collecting Event is for retrospective data where labels have already been generated. It may be bulk loaded from another database or extracted from accession data. The fields are mostly the same as for the Accession Object, Collecting Event screen, but without an Accession ID and with a verified taxonomic name associated with the entry.

1. Collector. The name of the committee that collected the material. The committee must exist in the committee table. Enter information as it appears on the collection label. The % is a helpful way to enter the information (e.g., L%Constance%).

2. Coll. Number Assignor. The name of the individual who assigned the collection number. Usually but not always the first member of the collection committee. The person must exist in the Personal Names table. Enter the last name and a % (Constance%) for easiest data entry.

3. Collections Prefix. Any characters before the collection number, such as letters or punctuation marks. If the collector uses two digits represent-

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ing the year and a hyphen in her collection numbers, enter them in the prefix.

4. Collection Number. A numeric field. Enter only whole numbers here.

5. Collections Suffix. Any characters following the collection number. If the collector uses letters or punctuation marks in the collection number, enter them here.

6. Taxonomic Name (Verified). Enter the determined taxonomic name of the material. The name must exist in the Verified Taxonomic Names table. The % is a helpful way to enter taxonomic name data (e.g. Lasthenia alba% will bring up all the names that start with Lasthenia alba and anything that follows it).

Data is entered into all the other fields on this screen exactly as for the same fields on the Accession Object screen. See the documentation for that screen for particulars.

C. Collection Locality Information

This screen is used for entering collection locality information and printing collection labels.

1. Collector. The individual whose name appears on the collection label as the collector. The name must exist in the Personal Names table. Enter the last name and a % (e.g., Constance%) for easiest data entry.

2. Collection Committee. The collector(s) of the material. Enter the information in the order in which it will appear on the label. The % is a helpful way to enter this data (e.g. L%Constance%).

3. Prefix. Any characters before the collection number, such as letters or punctuation marks. If the collector uses two digits representing the year and a hyphen in her collection numbers, enter them in the prefix.

4. Collection Number. A numeric field. Enter only whole numbers here.

5. Suffix. Any characters following the collection number. If the collec-

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tor uses letters or punctuation marks in the collection number, enter them here.

6. Country. Country information that will appear on the collection label. Defaults to USA. If you want another country to appear on the label, enter it here.

7. State. State information that will appear on the collection label. Defaults to California. If you want another state to appear on the label, enter it here.

8. County, Referenced Place, Locality, All Other Named Areas, Elevation and Coordinate Information is entered as for the Accession Object screen. See its documentation.

9. Ecological Description. Enter ecological information that will appear on the collection label.

VII. Collection Label Printing

This screen allows the printing of collection labels from data entered in the Collection Locality screen. Using the cut and paste feature of the SMASCH interface, you can copy and paste the prefix, collection number, suffix and collector from the Collection Locality screen.

1. Prefix. Any characters before the collection number, such as letters or punctuation marks. If the collector uses two digits representing the year and a hyphen in her collection numbers, enter them in the prefix.

2. Collection Number. A numeric field. Enter only whole numbers here.

3. Suffix. Any characters following the collection number. If the collector uses letters or punctuation marks in the collection number, enter them here.

4. Collector. The individual whose name appears on the collection label as the collector. The name must exist in the Personal Names table. Enter the last name and a % (e.g., Constance%) for easiest data entry.

VIII. Accessions that Are Types

5. Determined Taxonomic Name. Enter the verified taxonomic name here. This name must exist in the verified taxonomic names table. The % is a helpful way to enter this data. For instance, you can enter the generic name and a few letters of the specific epithet followed by a % to get a short list of verified taxonomic names from which to choose. (e.g. Achillea mill%)

6. Family Abbreviation. A three letter code for family name. This field is optional and uncontrolled.

7. Collection Year. If you do not enter a year, this field defaults to the current year. To change it enter all four digits of the year (e.g. 1995).

8. Determined By. This is a committee and therefore must be present in the committee table. If it does not exist you must create it on the Committee screen.

9. Print Count. The number of copies of the label you want.

10. After you have entered the information and inserted it into the database using the **Save** button, you may print labels using the **Print Labels** button. This will send the labels to the printer that has been designated in the resource file by your database administrator.

VIII. Accessions that Are Types

This screen records information about accessions that are types as they are encountered during data entry. Accession information for the specimens is entered in the same way as all other accession data, on the Accession Object/Institution/Collecting Event screen.

1. Accession Number. Enter the id or read in the barcode.

2. Type Kind. Select a type kind from the Type Kind table: holotype, isotype, etc.

3. Holotype Location. IH acronym of the institution that houses the holotype of this type.

4. Basionym. The basionym of the published type.

5. Published. The publication citation for the type.

6. Figure. page on which a figure appears, if any.

7. Year. year of publication.

8. Determination of Type By. This is a committee. If the committee does not exist in the committee table, you must create it through the Committee screen.

9. Determination of Type In.

10. Notes.

11. Filed As. Name under which type is filed, if different from Basionym.