

Topic: How do we count things? (e.g. slabs)

Date: 2020-11-05

Time: 11am Eastern

In Attendance

Roger Burhalter, Sam Noble Museum	Christina Byrd, MCZ	Kesler Randall, SDNHM
Margaret Landis, Sam Noble Museum	Lindsay Walker, NHMLA	Amanda Millhouse, NMNH
Erica Krimmel, iDigBio/FSU	Nicole Volden, NMMNHS	Jacob Van Veldhuizen, CUMNH
Holly Little, NMNH	Jessica Utrup (YPM)	Talia Karim (CU Boulder)
Sarena Govender		

Resources

- Google Drive Folder: <https://bit.ly/2OjZcWj>
- GitHub: <https://github.com/tdwg/esp>

Homework:

1. **Post examples of how “slabs” or “clusters” of fossils are handled in your database.** Please take a look at parts and counterparts, slabs, specimens on microscope slides, specimens with two (or more) usually separated groups such as plants with vertebrates, etc. in your collection and how they are handled (or not handled) in your database. Feel free to share screenshots in Slack. Photos of labels and/or specimens that aren't in databases yet but are representative of data that ideally should be captured are also welcome.
2. **Make sure you have cookies or treats with multiple “inclusions” (extra points).** Be sure to show them during Happy Hour as you consume them. Examples:
 - a. (Cookies) Milk chocolate chip with white chocolate and/or m&m's
 - b. (Cookies) Oatmeal-raisin with or without chocolate chips
 - c. (Donut) Raised donut with sprinkles (maybe Halloween sprinkles where available)
 - d. Granola bar (many varieties, for the health nuts)

Agenda

- Basics of Counting
 - Simple
 - Complex

- Clusters
 - Natural Accumulations
 - Artificial Accumulations
- “Catalog Number” History
 - Arrows
 - Publications
- Computer/Database Numbering Needs
 - Fields
 - Standards
- Moving Forward?

Action Items

Notes from Slack

Option #1A, Catalog each biological individual separately

- Pros: Easier to cite.
- Pros: Easier to count.
- Cons: object cannot be loaned without loaning additional specimens.
- Difficulty/Issues: May involve the need to re-number previously (historically) published specimens
- Used by: SNOMNH IP, NMNH

Option #1B, Catalog each biological individual separately but with a catalog number that denotes connection, e.g. “CATALOG#1A” + “CATALOG#1B” + “CATALOG#1C”

- Pros:
- Cons: object cannot be loaned without loaning additional specimens.
- Used by: NMNH

Option #2, Catalog each physical piece as a “loanable object”

- Pros: makes moving and loaning specimens easier and helps handle “the each catalog number can only have a single identification” challenge
- Cons: must also have field/way to specify relationship to other catalog numbers so when object moved or loaned specimens contained in loanable object are included and a field for specimen category
- Used by SNOMNH Paleobotany and Micropaleontology who define "Overall Specimen", "Single Taxa Specimen" and "Taxa on a Specimen" as 3 different specimen categories within their specimen numbering system to help them manage the relationships and with future loans and moving of slabs from place to place in the collection as well as handle “the each catalog number can only have a single identification” challenge.
- Also somewhat used by NMNH

Roger Burkhalter: We have a variety of methods based on if the slab has 1) only one taxon, 2) how far spaced they are, 3) if the slab includes one or more holotype, paratype, or previously figured individual objects. Additionally, you could throw in "artificial" groupings such as numerous microfossils on a microfossil cavity slide, those can number in the hundreds of individuals on a 1x3-inch slide (sometimes artistically placed!). At the far end of the spectrum would be a palynomorph slide where thousands of pollen and spores may be on the slide and you need a grid coordinate to find the specimens on the slide. You can throw part/counterpart in the mix, but those I think we will find are usually either given the same number or appended with an "a" or "b". Margaret and/or Rick Lupia came up with the idea of a "loanable object" as a way of "packaging or containerizing" these groups of specimens, where they maintain the relationship they have to one another in the database, because you cannot loan one object without loaning all of the objects. For microfossils, some workers put one species from several localities on a single cavity slide; others put a mix of species from one locality. The objects covered in this topic can be quite varied and a pro-active but outside-the-box thinking needs to be used. It needs to be fun. Additionally, we have some donated specimens (thin section and blank) that were "derived" from another institution's Holotype of that object (colonial rugose corals). So the object and blank are a part of the Holotype. What do you call it? What status does it have? I am sure neontologists have faced this before with molecular samples, but these are actual morphological Holotypes.

Lindsay Walker: We count 1 consolidated chunk/slab = 1 "specimen". (Otherwise, we'd be counting Turritella on slabs for eternity!) The exception might be if, for example, a bivalve is only loosely articulated (i.e., likely to separate), then we'd count that as 2. It's more of a management approach to counting than a strictly scientific one, but it works for us. We call this a "specimen lot count" when publishing organismQuantityType. Regarding the "chunk" counting method: A hypothetical slab might have >100 Turritella + 50 scaphopods + 1 bivalve. In this case, each distinct taxon would be cataloged separately, but would receive a quantity of "1". And, if additional catalog numbers needed to be assigned for publication at a later date, then so be it! We append "a" and "b" to catalog numbers for part-counterpart pairs, e.g. "LACMIP 2533.1234 a" and "LACMIP 2533.1234 b". I had one concretion last year with 3 pieces, so then I used "c". I think the letters are retained internally, but not merged with the cat # during publishing.

Amanda Millhouse: Yeah in VP I've decided now that slabs = 1 because it is one physical thing. Historically we did weird things in VP where Item Count was used interchangeably with Individual Count UNLESS there were multiple pieces. So an individual horse with like a femur, tibia, and partial skull would have a count of 1. But if you had 3 partial jaws, it had a count of 3. But then that wasn't always the case and if you had a tray of snake vertebrae, your count could be 1 or 48 or whatever, and maybe there was a note saying 48 was a "lot count". And slabs were similarly counted as 1 or 5 depending on who cataloged it...yeah it was AWFUL haha. I axed all that ridiculousness a few years ago in VP. I haven't explicitly tackled our fish and trackways which are the collections where we do have a high number of part and counterparts. But I know sometimes historically they used suffixes, sometimes it was one record and just noted to have part/counter, sometimes it was two records for each suffix, sometimes one record

had a count of 1 and sometimes it had a count of 2....basically if you were to give me any way of cataloging a part/counterpart I could probably find an example of it in either the Fish or VP trackway slabs. We don't have quite the same volume/depth of slab issues as inverts in VP, but we do have several slabs with like 100 Knightia fish on them from Green River. So far, if there are multiple taxa on a slab we have listed them all under a single record and made a note that it contains various taxa (similar to what we've done with some lots), but I think we'll be changing that approach in the future, which is a good thing

Carrie E (Wisconsin): At UWGM we take a "container" approach to slabs. Each slab is cataloged as a single object and *then* if a particular individual on that slab is described/published/etc it is given a "running number" that identifies it as a member of that container (e.g. 731.1; 713.2; 731.3, etc). We then relate the object numbers in the database. This is, of course, *before* we migrated to EMu so I haven't yet determined the best or most efficient way to do this in the new CMS.

POLLS (+1 by your choice):

1. How are "Specimen Clusters" cataloged in your collection?

Individually cataloged

Individually under one catalog number with suffixes (123a, 123b, 123c or 123.1, 123.2, 123.3)

As a "Lot" (with counts?)

As a "Lot" (without counts or estimates)

Only the most prominent or Type specimen is cataloged

Other (enter your answer below)

Notes

[DwC issue about individual count](#)

Chat Copy

08:01:07 From Erica Krimmel : We'll get started in a few minutes!

08:01:17 From Holly Little :
https://docs.google.com/document/d/12UvBOui8SOkoOM8gALOLaGW2jmoXH_dmETF9noO49dE/edit?usp=sharing

08:05:16 From Talia S. Karim : 🍷

08:05:47 From Christina J Byrd : Those cookies looked wonderful!

08:09:54 From Jessica Utrup : The types had some consistency at least. We also have red diamonds for holotypes and paratypes and green diamonds for hypotypes.

08:10:53 From Lindsay Walker : Hence the need for consistency in citation practices!!

08:14:40 From Christina J Byrd : Thank you!

08:14:41 From Amanda Millhouse : Thank you :)

08:14:53 From Kesler Randall : Cool bison site!

08:17:35 From Jessica Utrup : I really love the holiday-themed images. Well done, Roger and Margaret!

08:17:47 From Holly Little : Ditto!

08:17:57 From Christina J Byrd : +1

08:18:12 From Lindsay Walker : +1

08:18:21 From Christina J Byrd : That's been done on some vertebrate skulls

08:18:23 From Talia S. Karim : I've got a bowl of candy corn (I mean a cavity slide of Forams) on the table with me.

08:18:38 From Jessica Utrup : Well-played, Talia!

08:20:24 From Jessica Utrup : Does that one say "Xmas 1912"?

08:20:39 From Margaret Landis : Yes it does

08:20:41 From Lindsay Walker : yep

08:20:49 From Talia S. Karim : Whoa! Lol

08:21:10 From Jessica Utrup : I feel like such a slacker with my slides...

08:21:44 From Talia S. Karim : I know of a culture collection that does this still today. They send out xmas cards

08:22:00 From Jessica Utrup : I love that idea!

08:22:18 From Lindsay Walker : I wish I had one of these slides to show on tours!

08:23:03 From Talia S. Karim : I need to stop eating my foram-candy corns

08:26:11 From Amanda Millhouse : This reminds me that dwc:preparations needs revising to better manage the slides, peels, etc. Would also help with the cataloging of these specimens in general probably

08:26:22 From Jessica Utrup : +1

08:26:26 From Talia S. Karim : +1

08:26:40 From Lindsay Walker : Good future topic!

08:26:44 From Amanda Millhouse : In terms of tracking, counting, knowing a specimen is on a micro slide with 20 others etc

08:29:05 From Christina J Byrd : +1

08:29:21 From Kesler Randall : So sorry about your trees. :(

08:29:45 From Lindsay Walker : Amazing slides!

08:29:46 From Kesler Randall : great job guys!

08:29:50 From Talia S. Karim : Amazing!

08:29:59 From Christina J Byrd : Excellent presentation!

08:30:24 From Erica Krimmel : Google doc for easy reference in case anyone doesn't have it open already:
https://docs.google.com/document/d/12UvBOui8SOkoOM8gALOLaGW2jmoXH_dmETF9noO49dE/edit

08:32:16 From Amanda Millhouse : We have also numbered slabs in VP with multiple taxa, Kesler. Mostly occurs with fish, or with trackways where you have multiple ichnogenera/species on a single slab. Off the top of my head, I can't think of examples where we have numbered individual trackways/fish. But that's just VP. I know IP and PB have done different things currently and historically

08:33:05 From Holly Little : yeah our IP and PB have versions of almost all of these options...

08:34:44 From Lindsay Walker : Does anyone use dwc:associatedOccurrences or associatedOrganisms to associate specimens?

08:34:44 From Lindsay Walker : <https://dwc.tdwg.org/terms/#dwc:associatedOccurrences>

08:35:12 From Talia S. Karim : Hmm no Lindsay, but we could

08:35:14 From Holly Little : In surveys of DwC-A those are rarely used

08:35:24 From Holly Little : it at all

08:35:27 From Holly Little : if*

08:36:13 From Amanda Millhouse : Are they rarely used because people just don't use it? Or rarely used because the capacity in individual CIS isn't there? (Rhetorical question maybe, but maybe worth considering the cause why it isn't used?)

08:36:35 From Lindsay Walker : I have considered it now that we've started associating catalog records for "stuck together" stuff in EMu

08:36:35 From Holly Little : I think it's a level of complexity we just haven't gotten to yet

08:36:50 From Amanda Millhouse : Makes sense. Thanks!

08:38:54 From Holly Little : makes sense that it is also a definition issue

08:39:01 From Lindsay Walker : yes

08:41:08 From Lindsay Walker : e.g. "Assoc. spms: #, #, #"

08:41:32 From Holly Little : Would probably need to be the occurrence ID? I haven't thought much about it

08:42:57 From Talia S. Karim : I would think we might also want to disambiguate between different types of associations too. Three insects preserved on the same slab vs bryozoan Epibionts on a clam

08:43:29 From Lindsay Walker : Specimens can be associated in Emu using the Relationships tab: <https://lacmip.github.io/emu/documentation/catalogue/#relationships-tab>

08:45:05 From Amanda Millhouse : Similar situations when you have a lot with multiple taxa that hasn't been sorted out yet

08:45:50 From Amanda Millhouse : Regarding NMNH limits with using taxonomy to distinguish between multiple specimens vs. a history of IDs

08:47:23 From Holly Little : it would be a good tdwg interest group OR a task group under the ESP IG

08:47:32 From Erica Krimmel : ^ true!

08:47:32 From Amanda Millhouse : +1

08:47:38 From Christina J Byrd : +1
08:47:56 From Lindsay Walker : +1
08:48:38 From Holly Little : Did that preparations working group ever go anywhere?
08:48:58 From Amanda Millhouse : No....not unless I got dropped from it at some point haha
08:50:24 From Amanda Millhouse : Then again, I'm not sure how official it was when it first started and I wasn't quite involved in the same way I am now. So I guess it could be? But I'm unsure what paleo voices were/are on it
08:50:56 From Holly Little : I haven't heard anything about it on the DwC/TDWG side which was kind of where it was coming from right? A DwC Hour?
08:51:13 From Erica Krimmel : Yea I think it was a DwC hour
08:51:28 From Erica Krimmel : but I also haven't heard anything more.... perhaps worth reviving!
08:58:15 From Holly Little : <https://github.com/tdwg/dwc/issues/185> (closed issue about deprecating individualcount)
09:02:44 From Holly Little : photograph is an example value in the dwc definition