Quarterly Progress Reports To iDigBio Submitted By Active Thematic Collections Networks (TCNs)

May 2020

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- Reports from the following **retired** TCNs are no longer included:

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Submission #1622

Submission information

Form: TCN Quarterly Progress Report to iDigBio
Submitted by kds15e
Tuesday, May 5, 2020 - 11:11
107.77.205.176

TCN Name:
Capturing California's Flowers: Using Digital Images to Investigate Phenological Change in a Biodiversity Hotspot

Person completing the report:
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Progress in Digitization Efforts:
see attached document

Share and Identify Best Practices and Standards (including Lessons Learned):
see attached document

Identify Gaps in Digitization Areas and Technology:
see attached document

Share and Identify Opportunities to Enhance Training Efforts:
see attached document

Share and Identify Collaborations with other TCNs, Institutions, and Organizations:
see attached document

Share and Identify Opportunities and Strategies for Sustainability:
see attached document

Share and Identify Education and Outreach (E&O) Activities:
see attached document

Google Analytics
Analytics All Web Site Data May 2020 Report 20200205-20200504.pdf

Other Progress (that doesn't fit into the above categories):

Attachment 1

May2020QuarterlyReport_CAPTCN.pdf

Attachment 2

Source URL: https://www.idigbio.org/node/564/submission/1622

CALIFORNIA PHENOLOGY TCN – QUARTERLY REPORT – MAY 2020

Assembled by Katie Pearson, 4 May 2020

PROGRESS IN DIGITIZATION EFFORTS:

Figure 1 shows our progress in imaging, transcribing, georeferencing, and phenologically scoring the target specimens for our project, explained more in detail in the following sections.

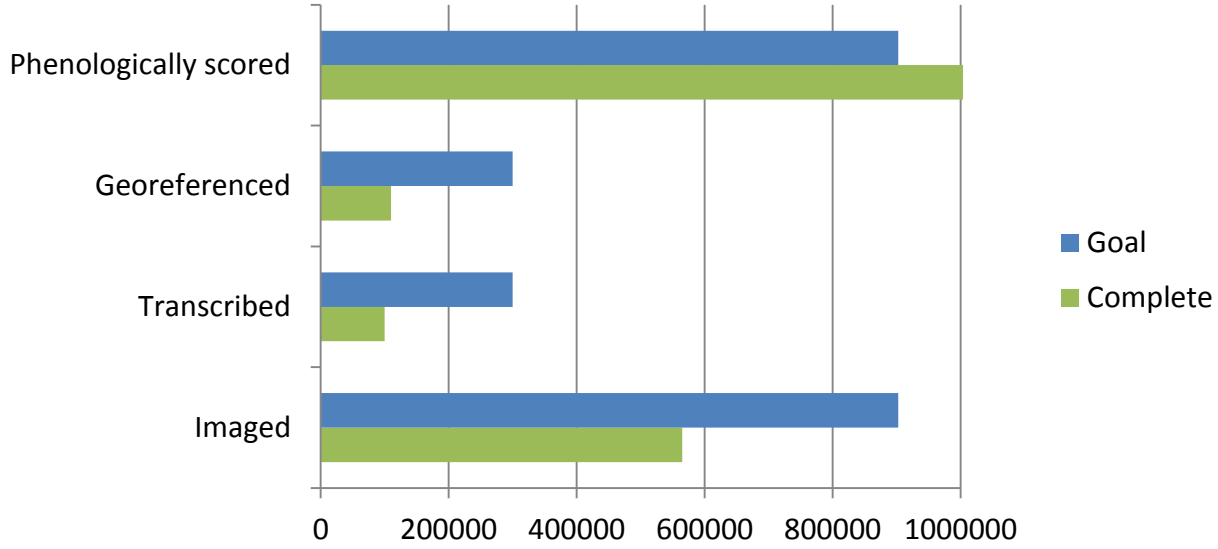


Figure 1

IMAGING

Imaging proceeded as normal until the California shelter-at-home order on March 19, 2020. After this date, only two institutions (DAV, SBBG) have been able to continue imaging. Eighteen of the 22 institutions are currently unable to work in their physical collections. Instead, work at most institutions has been shifted toward transcription and georeferencing. Figure 2 shows the distribution of unprocessed, barcoded/processed, and imaged target specimens per institution as of April 30, 2020.

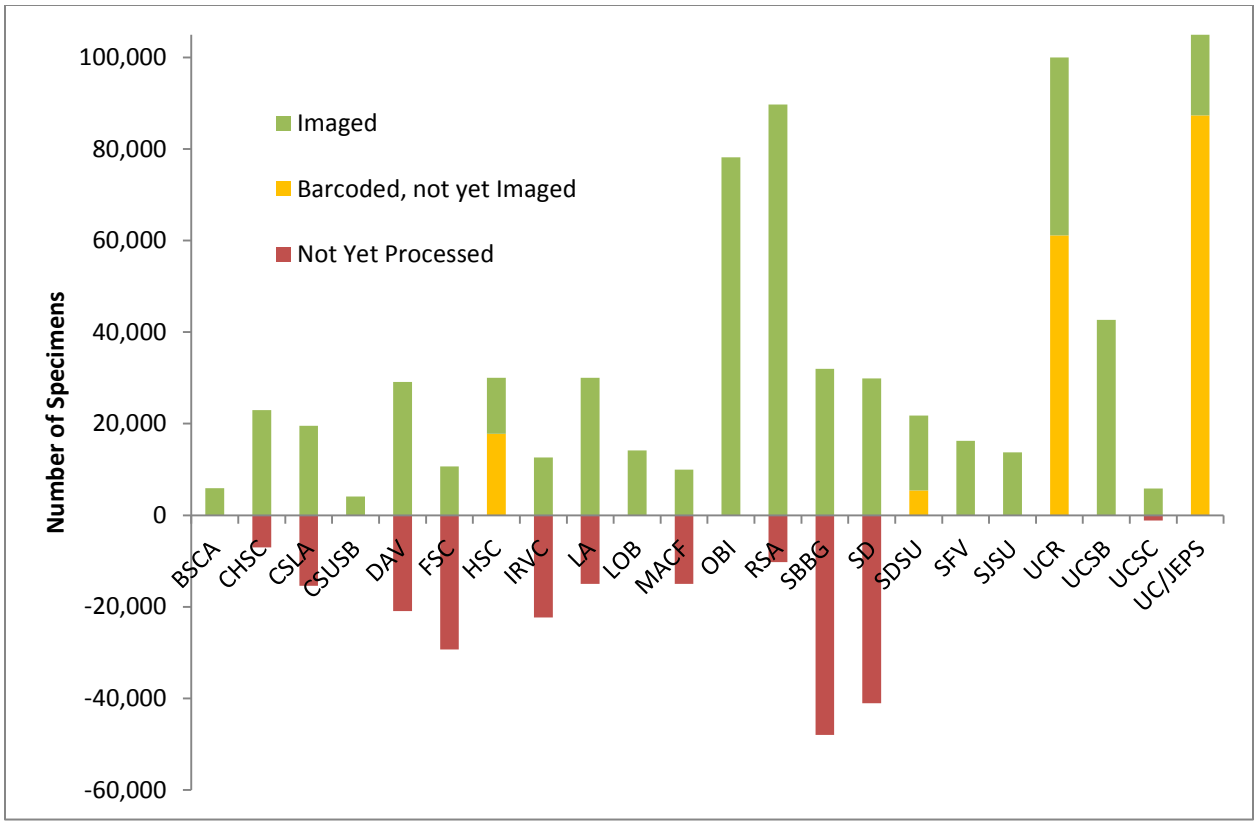


Figure 2. Digitization progress, in terms of number of specimens imaged, barcoded, or not yet processed. Bars above the zero line indicate specimens that have been processed in preparation for imaging or have been imaged. The green portions of these bars represent the number of specimens that have been imaged. Red bars below the zero line indicate the number of target specimens (i.e., specimens to be imaged as part of the CAP TCN) that have not yet been pre-processed or imaged.

TRANSCRIPTION

An estimated 99,718 specimen records have been transcribed across the CAP Network since July 2019. This is approximately 33% of the goal number of transcriptions to be produced by this project.

GEOREFERENCING

Since July 2019, 110,074 specimen records from CAP institutions have been georeferenced in CCH2. This is approximately 37% of the goal number of georeferences to be produced by this project.

PHENOLOGICAL SCORING

Because of the trait mining tool developed in our CCH2 portal, we were able to use text data from multiple DarwinCore fields to score the phenological status of an enormous number of herbarium specimens. To date, over 1,300,000 specimens have been phenologically scored, which means that we

have surpassed our phenological scoring goal by over 144% percent. For this reason, current efforts to develop taxon-specific phenological scoring protocols have been postponed in favor of focusing on transcription and georeferencing.

SHARE AND IDENTIFY BEST PRACTICES AND STANDARDS (INCLUDING LESSONS LEARNED)

Due to the COVID-19 crisis, much in-person and on-site work has been slowed or halted in our partner institutions. However, because our database is web accessible, we have still been able to maintain productivity. Institutions that still have student workers, volunteers, or other technicians have been encouraged to have their workers trained in online tasks using the available training resources, then have those workers attend co-working "office hours."

The project manager has been hosting daily Zoom "office hours" during which data-transcribers and georeferencers from any institution can log in and virtually co-work with other attendees. Having the PM present allows the participants to ask questions as they come up, and participants can show their screens to explain issues. After about 30 minutes of work (sessions are 1 hour in length), the PM shares pictures and some interesting tidbits about a "plant of the day," with the purpose of providing a social interlude and brief break from intensive work. Zoom office hours are now held three times per week and generally host 5-10 attendees per session.

IDENTIFY GAPS IN DIGITIZATION AREAS AND TECHNOLOGY

We are continuing to develop the functionality of our CCH2 data portal. Currently, we lack a way to search by, download, and visualize specimens' phenological scorings, though these data currently exist. We are also developing a way to track who downloads our data and for what purpose.

SHARE AND IDENTIFY OPPORTUNITIES TO ENHANCE TRAINING EFFORTS

A webinar on georeferencing using CCH2 was hosted by Katie Pearson (PM) and Mare Nazaire (Rancho Santa Ana) on February 26, 2020 and had 29 participants. The webinar recording has proven vital for our continued training efforts as many institutions turn to remote working. The YouTube recording of this webinar (https://youtu.be/hrXiZ2tsuRM) has been viewed 98 times.

An illustrated georeferencing guide was also developed based off the existing protocol to help beginning georeferencers successfully apply georeferencing protocols. All georeferencing resources for CAP, including a link to the webinar, are compiled on the Georeferencing page of our website: https://www.capturingcaliforniasflowers.org/georeferencing.html

An all-CAP conference call was conducted on February 7th, 2020 to bring everyone up to speed with recent developments. The leadership team demonstrating the many georeferencing tools available in CCH2, updated the group on the development of the phenological scoring tools, and discussed other announcements. The PM held individual check-in calls with each institution once in March and once in April. As these occurred right at the turn of the COVID-19 situation, we were able to discuss remote working options and ensure collaborators had a tangible way forward despite the chaos.

The PM has been in constant contact with most PIs to suggest and discuss ways of retaining productivity during the shelter-at-home period. As previously described, we are encouraging collaborators to get their workers trained to work remotely (transcribe and georeference specimen records) via our existing resources and to participate in the PM's weekly office hours.

SHARE AND IDENTIFY COLLABORATIONS WITH OTHER TCNS, INSTITUTIONS, AND ORGANIZATIONS

Personnel from the Green Diamond Resource Company herbarium contacted us about getting their data hosted in the CCH2 portal. We incorporated their data in late February, and it is now live-hosted in CCH2 with 443 specimen records. This collection had never previously been published and has not yet registered with Index Herbariorum.

We are continuing to reach out to California Native Plant Society (CNPS) chapters to recruit their members to contribute via Notes from Nature. The lead PI and PM will co-present a Zoom seminar for the North Coast chapter of the CNPS on May 13th.

We are working with the CSU San Bernardino Water Resources Institute to potentially re-task previous USDA interns to working on our project. These interns were unable to continue their internships due to the shelter-at-home order, and we reached out to them to see whether these interns could be trained and mobilized for transcription and georeferencing.

SHARE AND IDENTIFY OPPORTUNITIES AND STRATEGIES FOR SUSTAINABILITY:

Following the retirement of the PI at Humboldt State University, the previous "snapshot" of the HSC herbarium database, which was managed locally, was switched over to live management in CCH2. This will enable the collections manager and the new herbarium director to manage these data more sustainably.

All training videos previously hosted via the iDigBio Adobe Connect account have been transferred to YouTube as per iDigBio's request.

Two CAP collections were newly registered as collections in GBIF this quarter, bringing the total to 15 of 22 partners publishing data to this global aggregator.

SHARE AND IDENTIFY EDUCATION AND OUTREACH (E&O) ACTIVITIES:

The PM shares updates on the project and phenology-related news via the network Twitter account (@CalPhenologyTCN).

Around the time of the shelter-at-home order in California, we reached out to California Native Plant Society chapters to remind them of the possibility of volunteering from home using Notes from Nature. We developed and disseminated a short video (https://youtu.be/Fh2Rg39qm-0) that introduces the CAP

project and shows potential participants how to get started on Notes from Nature. This video currently has 159 views.

Due to increases in Notes from Nature participation, two expeditions were completed in late March 2020, resulting in 4,372 specimens from three institutions (CSLA, IRVC, LOB) being fully transcribed and their data imported into CCH2. We launched two additional expeditions for two institutions (CSLA, IRVC) in early April.

The PM remotely presented about the CAP project for a museum curation class led by Katja Seltmann (UCSB) on April 7th, 2020. The students were also taught to transcribe records in CCH2 in collaboration with the UCSB collections manager, Greg Wahlert.

Three blog posts were written and published to the CAP website: https://www.capturingcaliforniasflowers.org/blog-recap.

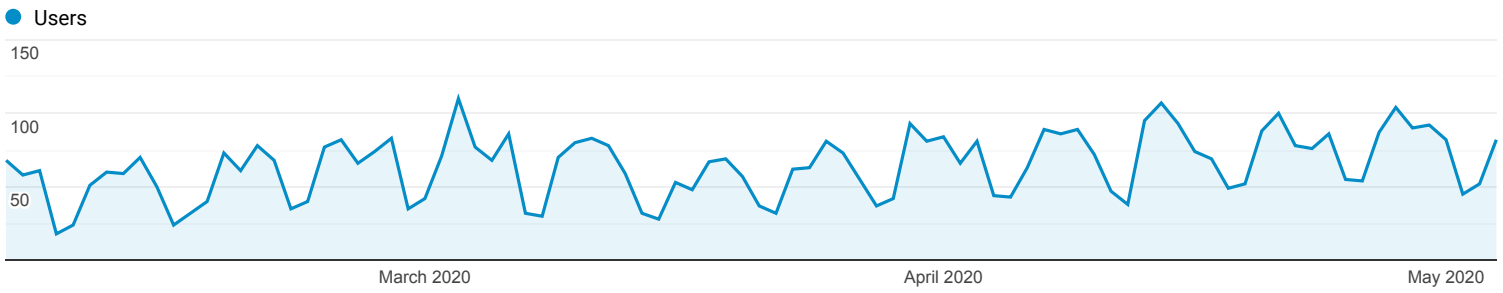
Initial development of the Course-based Undergraduate Research Experience curriculum (Plant phenology using herbarium specimens) was concluded in mid-March. Jenn Yost and Katie Pearson are now running the course virtually (due to COVID-19) for the spring 2020 quarter at Cal Poly. Nineteen students are enrolled in this course.

May 2020 Report

All Users
100.00% Users

Feb 5, 2020 - May 4, 2020

Report Tab



Page	Users	Sessions	Avg. Session Duration	Pages / Session
	2,003 % of Total: 100.00% (2,003)	**9,235** % of Total: 100.00% (9,235)	**00:29:32** Avg for View: 00:29:32 (0.00%)	**26.06** Avg for View: 26.06 (0.00%)
1. /portal/	**1,157** **(2.33%)**	4,243 (45.94%)	00:31:16	1.59
2. /portal/collections/index.php	**826** **(1.67%)**	613 (6.64%)	00:13:19	8.44
3. /portal/collections/harvestparams.php	**704** **(1.42%)**	493 (5.34%)	00:24:03	22.41
4. /portal/collections/list.php	**605** **(1.22%)**	179 (1.94%)	00:10:20	56.84
5. /portal/index.php	**493** **(0.99%)**	421 (4.56%)	00:38:01	8.48
6. /portal/collections/editor/occurrenceeditor.php	**322** **(0.65%)**	704 (7.62%)	00:54:49	187.88
7. /portal/collections/listtabledisplay.php	**295** **(0.59%)**	51 (0.55%)	00:21:19	63.76
8. /portal/collections/map/index.php	**284** **(0.57%)**	263 (2.85%)	00:11:42	9.37
9. /portal/imagelib/search.php	**194** **(0.39%)**	99 (1.07%)	00:23:07	14.56
10. /portal/imagelib/index.php	**126** **(0.25%)**	26 (0.28%)	00:18:50	12.04

Rows 1 - 10 of 42447

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Submission #1617

Submission information

Form: TCN Quarterly Progress Report to iDigBio
Submitted by neilscobb
Thursday, April 30, 2020 - 19:51
134.114.107.161

TCN Name:
Lepidoptera of North America Network: Documenting Diversity in the Largest Clade of Herbivores

Person completing the report:
neilscobb@gmail.com

Progress in Digitization Efforts:
See Attachment

Share and Identify Best Practices and Standards (including Lessons Learned):
See Attachment

Identify Gaps in Digitization Areas and Technology:
See Attachment

Share and Identify Opportunities to Enhance Training Efforts:
See Attachment

Share and Identify Collaborations with other TCNs, Institutions, and Organizations:
See Attachment

Share and Identify Opportunities and Strategies for Sustainability:
See Attachment

Share and Identify Education and Outreach (E&O) Activities:
See Attachment

Google Analytics

Other Progress (that doesn't fit into the above categories):

Attachment 1
LepNet_SCAN_May_2020.docx

Attachment 2

Source URL: https://www.idigbio.org/node/564/submission/1617

Published on *iDigBio* (https://www.idigbio.org)

Submission #1616

Submission information

Form: TCN Quarterly Progress Report to iDigBio
Submitted by neilscobb
Thursday, April 30, 2020 - 19:49
134.114.107.161

TCN Name:
Southwest Collections of Arthropods Network (SCAN): A Model for Collections Digitization to Promote Taxonomic and Ecological Research

Person completing the report:
neilscobb@gmail.com

Progress in Digitization Efforts:
See attachment

Share and Identify Best Practices and Standards (including Lessons Learned):
See attachment

Identify Gaps in Digitization Areas and Technology:
See attachment

Share and Identify Opportunities to Enhance Training Efforts:
See attachment

Share and Identify Collaborations with other TCNs, Institutions, and Organizations:
See attachment

Share and Identify Opportunities and Strategies for Sustainability:
See attachment

Share and Identify Education and Outreach (E&O) Activities:
See attachment

Google Analytics

Other Progress (that doesn't fit into the above categories):

Attachment 1
LepNet_SCAN_May_2020.docx

Attachment 2

Source URL: https://www.idigbio.org/node/564/submission/1616

Lepidoptera of North America Network &
Symbiota Collections of Arthropods Network (SCAN)
Quarterly Report

April 28, 2020
Neil Cobb

Progress in Digitization Efforts:

This is a joint report for the two Thematic Collections Networks (TCNs) SCAN and LepNet. Many museums are involved in both SCAN and LepNet, including collections that have received funding from both TCNs, collections that are unfunded for one TCN and funded by the other, and some collections that are providing data to both and are unfunded by the ADBC program. Both TCNs share the same database https://scan-bugs.org/portal/, which depending on the context we refer to as the SCAN-LepNet database or the LepNet-SCAN database. We will also serve arthropod data for InverteBase and will serve Terrestrial Parasite Tracker TCN data when it becomes available (See TPT TCN report for details). Summary statistics presented here were compiled from data accessed on the SCAN portal, April 28, 2020. **Table 1** shows the key statistics of Lepidoptera (LepNet) and non-Lepidoptera (SCAN) records to date. These consist of all records and images, including records and images from data providers who have allowed us to post their data on the SCAN/LepNet portal. Providing data from these additional providers increases our ability to georeference, add to taxonomic tables, and more accurately assess the total digitization effort for any given taxon. We provide data specific to institutions that received direct funding from the NSF-ADBC program in the annual reports to NSF.

Table 1. Records in SCAN/LepNet database, "all data" reflects all arthropod taxa, "Non-Lep" includes all non-Lepidoptera arthropod data, and Lepidoptera includes only Lepidoptera taxa.

	All data	Non-Lep (SCAN)	Lepidoptera (LepNet)
Specimen Records	22,676,043	18,419,006	4,257,037
# Georeferenced	19,086,256	15,362,486	3,723,770
# Imaged	3,903,414	2,461,799	1,441,615
# Identified to species	13,640,873	9,554,232	4,086,641

The SCAN network started in 2012 and the TCN funding has ended, but SCAN continues to support PEN projects. The LepNet grant was initiated on July 1, 2016 and there are currently 27 ADBC funded museums and one non-funded museum (Oklahoma State University). The museums comprising the NSF-ADBC LepNet are all serving records and images on the LepNet Portal and are serving data directly to iDigBio via IPT or through DwC archives on the LepNet-SCAN portal. Twenty museums are serving DwC archives to iDigBio and six museums are serving data snapshots with the LepNet portal. We have set up the SCAN Portal to serve all arthropod data from North America as well as all data from North American arthropod collections where specimens were collected outside of North America.

LepNet - The LepNet ADBC-funded museums are still on target to meet goals for records and images. An additional 59 collaborators (non-ADBC funded museums that use our data portal to serve their data) have also provided additional records for Lepidoptera. There are 47 collections (referred to as added-value) that have allowed us to harvest their data via IPT to serve lepidopteran records. Although most of

the Lepidoptera imaged are from INaturalist, 170,854 are specimen images **Table 2** shows the top 10 families of Lepidoptera in terms of total occurrences digitized.

What is most encouraging about the lepidopteran records is that 87% of the records are identified to species, which is higher than any of the other major orders. Thus, the primary factor limiting the production of "research-ready" data is due to georeferencing. For Lepidoptera 74% of the records are research-ready (i.e., identified to species and georeferenced) and by georeferencing existing records we should increase that percentage to 90% over the next three years. We realize that many records represent misidentified specimens and we also need to seek additional non-ADBC funding to review as many specimen identifications as possible. We are sponsoring the first LepNet Partners to Existing Networks (PEN) grant with the San Diego Museum of Natural History. This PEN project will focus on the Lepidoptera of Baja California, including a large number of historical records. They have already contributed over 13,000 records.

Table 2. The number of occurrence records for the top 10 families of Lepidoptera that have been digitized.

Taxa	# Specimen Records	# Georeferenced	# Specimen Identified to species	# Georeferenced & Ided to species
Nymphalidae	866,504	794,766	853,030	785,577
Noctuidae	551,907	497,764	532,520	484,671
Erebidae	409,709	364,190	391,397	350,357
Geometridae	354,158	311,771	338,290	298,221
Hesperiidae	343,517	290,141	335,880	283,861
Pieridae	341,709	285,533	337,471	282,400
Lycaenidae	271,896	242,957	267,095	239,354
Papilionidae	170,456	142,609	168,960	141,616
Crambidae	157,158	133,565	151,543	129,497
Tortricidae	134,876	107,454	125,529	100,934

Symbiota Collections of Arthropods Network (SCAN) - We have surpassed our overall TCN/PEN goals for the network and have been very successful in supporting data mobilization for unfunded museums and cooperation by larger collections that have allowed there data to be used to help mobilize data from other museums. We are sponsoring one SCAN PEN proposal, one through the American Museum of Natural History, focusing on several ground-dwelling families. **Table 3** shows data for the five major taxa we targeted in SCAN. All five groups have enough data to produce scores of papers.

Share and Identify Opportunities to Enhance Training Efforts: We are developing resources on the WordPress site http://www.scan-all-bugs.org/ .

Share and Identify Best Practices and Standards (including Lessons Learned):

Table 3 Number of records for the five focal SCAN taxa groups.

Taxa	# Specimen Records	# Georeferenced	# Specimen Identified to species	# Georeferenced & Ided to species
Formicidae	1,191,047	1,074,097	690,977	615,852
Carabidae	622,726	507,590	391,047	323,411
Araneae	252,097	198,201	208,854	169,032
Acrididae	431,679	218,036	368,783	203,830
Tenebrionidae	192,506	167,147	113,304	99,095

We share best practices on the SCAN/LepNet project website https://scan-all-bugs.org/ .

Images for Research - We developed a new and efficient process for uploading images to the database https://scan-bugs.org/portal/profile/index.php?refurl=/portal/imagelib/imagebatch.php? .We are participating in a TDWG-sponsored working group to develop standards for specimen images, including definition of morphological traits.

Identify Gaps in Digitization Areas and Technology: We are supporting the "LightingBug" project https://lightningbug.tech/, which will exponentially increase transcription rate of labels and produce specimen images comprising 360-degree image suites. The production of images will be transformational in terms of extending our capabilities to provide automated identifications and examine morphological traits.
We continue to seek out occurrence data to better understand the biogeography of the focal SCAN taxa and Lepidoptera. For most groups there is not enough data to talk about gaps. We are meeting this need by incorporating additional collections into the SCAN-LepNet database, and harvesting observational records from iNaturalist, Pollardbase, Buguide, LepSoc inventories, and smaller observation sets provided by individual lepidopterists.

Share and Identify Collaborations with other TCNs, Institutions, and Organizations:
We are primarily working with other Symbiota TCNs and other Symbiota portals. We are also generally collaborating with a variety of individuals, projects and organizations to extend the ability to mobilize biodiversity data and promote the use of data in research. We are serving data from 217 collections, we continue to add one collection per month.

Share and Identify Opportunities and Strategies for Sustainability: Nothing to report

Other Progress (that doesn't fit into the above categories):

Focus on North American Arthropods We continue to provide North American data obtained from any credible sources to increase the quantity of data available to SCAN and LepNet users. We have added three new collections since the last update.

GBIF Registration - There are 47 Live collections on SCAN that are now registered with GBIF and 87 other entomology collection datasets from the North America being served on GBIF for a total of 181 datasets. This leaves approximately 30 collections in North America that still need to register on GBIF.

Publications - We have published an overview of the LepNet project (Seltmann et al 2017), and several LepNet participants collaborated on a publication below (Belitz et al., 2018). Our review of North American entomology collections has been published in PeerJ. We are now developing a follow up review on North American arthropod data.

Belitz, M.W., Hendrick, L.K., Monfils, M.J., Cuthrell, D.L., Marshall, C.J., Kawahara, A.Y., Cobb, N.S., Zaspel, J.M., Horton, A.M., Huber, S.L. and Warren, A.D., 2018. Aggregated occurrence records of the federally endangered Poweshiek skipperling (*Oarisma poweshiek*). *Biodiversity data journal*, (6).

Cobb, N.S., L. Gall, J.M. Zaspel, L.M. McCabe, N.J. Dowdy. and A.Y. Kawahara. 2019 Assessment of North American Entomology Collections: Prospects and Challenges for Addressing Biodiversity Research. PeerJ, 7, p.e8086.

Google Analytics: Our Google Analytics data are dynamically shown https://datastudio.google.com/u/0/reporting/1VvEU4pM2LGqQXY0hVCTf98VvGmM7T_bu/page/cLZN for the SCAN portal, http://scan-bugs.org/portal/index.php .

Published on *iDigBio* (https://www.idigbio.org)

Submission #1629

Submission information

Form: TCN Quarterly Progress Report to iDigBio
Submitted by mwdenslow
Wednesday, May 6, 2020 - 12:30
67.190.87.86

TCN Name:
SERNEC: The Key to the Cabinets: Building and Sustaining a Research Database for a Global Biodiversity Hotspot

Person completing the report:
michael.denslow@gmail.com

Progress in Digitization Efforts:
There are 122 collections serving data through the SERNEC portal. There are currently 4,924,391specimen records and 463,807 (9%) of those records are georeferenced. There are currently 4,450,215 imaged specimen images available. There are currently 68 collections publishing to iDigBio.

Share and Identify Best Practices and Standards (including Lessons Learned):
The SERNEC – TCN protocols continue to be updated as needed and are posted on the SERNEC resources site (http://sernec.appstate.edu/resources).

Identify Gaps in Digitization Areas and Technology:
Nothing to report

Share and Identify Opportunities to Enhance Training Efforts:
Nothing to report

Share and Identify Collaborations with other TCNs, Institutions, and Organizations:
Nothing to report

Share and Identify Opportunities and Strategies for Sustainability:
Nothing to report

Share and Identify Education and Outreach (E&O) Activities:
SERNEC continues to have a large on active presence on Notes from Nature (https://www.notesfromnature.org/active-expeditions/Herbarium) with many expeditions running
concurrently.

In April SERNEC participated in WeDigBio Lite (https://blog.notesfromnature.org/2020/04/04/wedigbio-lite/). Notes from Nature logged over 30,000 transcriptions during the event. A large portion of the transcriptions came from SERNEC specific projects such as Arkansas and Florida which organized well attended virtual events.

We have an area of the SERNEC website dedicated to volunteer opportunities. https://herbarium.appstate.edu/sernec/volunteer-sernec

Google Analytics

Other Progress (that doesn't fit into the above categories):
All SERNEC – TCN PIs have now submitted their final reports. Appalachian State University has will remain active for an additional extension year to provide project support for data portal activities, citizen science and georeferencing.

Attachment 1

Attachment 2

Source URL: https://www.idigbio.org/node/564/submission/1629

Published on *iDigBio* (https://www.idigbio.org)

Submission #1619

Submission information

Form: TCN Quarterly Progress Report to iDigBio
Submitted by BruceL
Saturday, May 2, 2020 - 15:03
66.45.130.87

TCN Name:
The Cretaceous World: Digitizing Fossils to Reconstruct Evolving Ecosystems in the Western Interior Seaway

Person completing the report:
blieber@ku.edu

Progress in Digitization Efforts:
Regarding the University of Kansas portion of the project, led by PI Bruce S. Lieberman (BSL), we have databased 136,476 fossil specimens total, with 12 specimens databased since the last reporting period (this number is down drastically due to COVID-19, see discussion below). 110,742 of these specimen records are also georeferenced. In addition, we have georeferenced ~ 400 localities since the last reporting period and have now georeferenced a total of ~ 9,300 localities associated with this project (the results presented here use the query associated with the web version of Specify, see discussion associated with impacts of COVID-19 below, and seem to be not quite as accurate as what we could report if we used the desktop version of Specify). Still, in spite of the recent impacts due to COVID-19, we have dramatically exceeded our original project goals for all categories. Further, according to some online aggregators, it appears that more than 86% of the total of all of our shared specimen data are georeferenced, meaning that our data can form important components of future research analyses.

Regarding the Fort Hays State University portion of the project, led by PI Laura Wilson:

They have databased 4,774 Cretaceous specimens total, with 58 databased since the last reporting period. 4,774 of these specimen records are also georeferenced. In addition, they have georeferenced 3 localities since the last reporting period and now georeferenced a total of 743 Cretaceous localities associated with this project. They also generated 395 new images.

Regarding the South Dakota School of Mines & Technology portion of the project, led by co-PI Laurie Anderson:

they have finished up all of their digitization activities on the project.

Regarding the University of Colorado portion of the project, led by PI Talia Karim (TK):

they have databased 20,825 Cretaceous specimens total, with 893 databased since the last reporting period. 13,450 of these specimen records are also georeferenced. In addition, they have georeferenced 130 localities since the last reporting period and now georeferenced a total of 895 Cretaceous localities associated with this project. They also generated [unable to provide a number at the moment due to remote working conditions] some new images.

Regarding the University of Texas portion of the project, led by Rowan Martindale and Lisa Boucher with major participation from Liath Appleton:

they have 24,433 Cretaceous cataloged records, representing ~80,000 specimens total, with 245 new records databased since the last reporting period of 1/31/2020. Of the total number of catalogued specimen records, 24,166 have been georeferenced.

In addition, they have now georeferenced a total of 5,804 Cretaceous localities (out of 5,827 associated with this project, 105 localities have been georeferenced since their last report).

They generated 1,720 new images since their last report. The total number of images attached to their Specify database is 9,667.

Regarding the portion of the project involving our PEN partner at the Los Angeles County Museum (LACM) of Natural History, led by Austin Hendy and Lindsay Walker:

they have databased 390 Cretaceous specimens total, with 0 databased since the last reporting period. 107 of these specimen records are also georeferenced. In addition, they have georeferenced 63 localities since the last reporting period and now georeferenced a total of 67 Cretaceous localities associated with this project.

Share and Identify Best Practices and Standards (including Lessons Learned):
N/A

Identify Gaps in Digitization Areas and Technology:
N/A

Share and Identify Opportunities to Enhance Training Efforts:
Regarding the University of Kansas portion of the project, led by PI Bruce S. Lieberman (BSL),
our new collections manager, Natalia Lopez Carranza, began work at KU at the end of February. She has been focused on learning more about the intricacies of our Specify databasing software as well as how to georeference using our division protocols. She has done a little bit of databasing and a lot of georeferencing, not only georeferencing new

localities but also revising the database records for some of our other localities. Further, she has been very much focused on data cleaning, particularly improving the geography and locality information based on collecting events, using the flags provided for our data by GBIF.

Regarding the University of Texas portion of the project, led by Rowan Martindale and Lisa Boucher with major participation from Liath Appleton,
they are training a graduate student, Stacie Skwarcan, on the grant this semester. She is primarily imaging Cretaceous specimens, and editing and attaching images in Specify.

Share and Identify Collaborations with other TCNs, Institutions, and Organizations:
N/A

Share and Identify Opportunities and Strategies for Sustainability:
N/A

Share and Identify Education and Outreach (E&O) Activities:
Regarding the University of Kansas portion of the project, led by PI Bruce S. Lieberman (BSL),
BSL and Rod Spears are also now currently working on our 2nd app which will facilitate fossil identification and interaction with scientists associated with the project. The app is currently in the testing phase and we do hope to have it completed before the next iDigBio update.

Regarding the Paleontological Research Institution portion of the project, led by PI Jonathan Hendricks

Efforts at the Paleontological Research Institution (PRI; PI Hendricks) have continued to focus on development of outreach products related to the Digital Atlas of Ancient Life project (homepage: https://www.digitalatlasofancientlife.org/), particularly content generation for the Digital Encyclopedia of Ancient Life (https://www.digitalatlasofancientlife.org/learn/).

Increased Usage of Digital Atlas Resources During COVID-19

They have observed a marked increase in the usage of online Digital Atlas educational resources since the COVID-19 crisis began shutting down the United States in mid-March, 2020. In particular, the Digital Atlas Virtual Collection (https://www.digitalatlasofancientlife.org/vc/) of 3D photogrammetry models of fossil specimens and the Digital Encyclopedia of Ancient Life textbook have both seen substantial increases in usage since mid-March. This increase in usage was likely triggered, at least in part, by an email shared on the Paleonet listserv on March 12 that reminded faculty of these resources as they were beginning to rapidly transition their courses to an online format. To facilitate faculty use of the collection of 3D models in their courses, we developed a Virtual Collection user guide that is available at: https://www.digitalatlasofancientlife.org/vc/userguide/.

These Digital Atlas resources are now regularly being used by about 1,300 people per day and close to 28,000 per month (compared with 16,000 monthly users at the time of the last report). The Digital Atlas website has received nearly 120,000 page views since March 15 (see figures in attached file).

New Digital Encyclopedia of Ancient Life Resources

The online, open access Digital Encyclopedia of Ancient Life (DEAL) paleontology textbook continues to grow and there are several noteworthy additions since the last update:
First, PRI Research Scientist Dr. Jansen Smith has authored two major new, multi-page chapters for the DEAL:

• Paleoecology: https://www.digitalatlasofancientlife.org/learn/paleoecology/

• Conservation Paleobiology: https://www.digitalatlasofancientlife.org/learn/conservation-paleobiology/

He also has contributed a page about the biology and fossil record of crinoids: https://www.digitalatlasofancientlife.org/learn/echinodermata/crinoidea/

Second, PRI Research Scientist Dr. Elizabeth Hermsen—as part of her NSF-supported research—is developing DEAL chapters on modern plant structure, development, and evolution, as well as paleobotany. Since the last report, she has added two new pages to the DEAL:

• Fruit & Seed Dispersal: https://www.digitalatlasofancientlife.org/learn/embryophytes/angiosperms/dispersal/

• Vascular Plant Structure: https://www.digitalatlasofancientlife.org/learn/embryophytes/tracheophytes/

Public Domain Designation of Digital Atlas Virtual Collection 3D Models

In February, the Digital Atlas project partnered with Sketchfab and 26 other cultural organizations to make nearly all of its >500 3D photogrammetry models of fossil and modern specimens from the collections and exhibits of the Paleontological Research Institution and Museum of the Earth freely available to everyone with a Creative Commons Public Domain Dedication (CC0). Digital Atlas models represent about 31% of the total 1,700 models that received this CC0 designation. A press release by Sketchfab about this event is available at: https://sketchfab.com/blogs/community/sketchfab-launches-public-domain-dedication-for-3d-cultural-heritage/.

Social Media

Social media numbers:
• The Digital Atlas Twitter account (@PaleoDigAtlas) currently has 1,454 followers (up from 1,334).
• The Digital Atlas Facebook account (@PaleoDigAtlas) currently has 256 followers (up from 181).
• The Digital Atlas Sketchfab account has 524 models posted (up from 523) and 465 followers (up from 287).

Regarding the South Dakota School of Mines & Technology portion of the project, led by

co-PI Laurie Anderson:
since the last reporting period they have been developing curricular materials for K-12 students.

Google Analytics
IncreasedUsageofCretaceousWorldDigitalResourcesDuringCOVID-19.pdf

Other Progress (that doesn't fit into the above categories):
Regarding the University of Kansas portion of the project, led by PI Bruce S. Lieberman (BSL),
The app that programmer Rod Spears produced, working in concert with BSL and Jon Hendricks (PRI), was featured in an interview on Kansas Public Radio (our local, statewide affiliate to NPR). BSL was interviewed for that piece which is available here: "There are millions of fossils in Kansas. Here's how you can find one", article and radio interview on fossil app for KMUW 89.1, Wichita, KS NPR station, March 2, 2020: https://www.kmuw.org/post/there-are-millions-fossils-kansas-heres-how-you-can-find-one
Further, it was also covered in several newspapers throughout the state of Kansas including: "KU professor helps develop app that identifies fossils", write up and interview on fossil app, Lawrence-Journal World, Lawrence, KS, March 2, 2020: https://www2.ljworld.com/news/state-region/2020/mar/01/ku-professor-helps-develop-app-to-help-identify-fossils/

In addition, we have requested a no cost extension to finish off the last few remaining aims associated with the project.

COVID-19 impacts: Due to COVID-19 we have been under a stay at home order in Kansas, which is certainly had a substantial and negative impact on the project. One of our undergraduate students who has been databasing (Nick Rose) was not able to work remotely so the associated databasing activities could not be conducted. Thus, the virus has drastically negatively affected our ability to database. However, another undergraduate (Wade Leibach) who has been doing georeferencing work has been able to work remotely. Our collections manager (Natalia) has also been working remotely. She has been focused on georeferencing and cleaning our data. So, division staff (Natalia) and students (Wade) have been able to do quite a good amount of georeferencing, though working remotely does slow progress in this area somewhat. All of the georeferencing work conducted remotely has used the web version of Specify (7). Having access to the web version has been very beneficial as many of the functions can still be performed using this tool. Curator BSL has also been working remotely and pertinent tasks involve focusing on trying to write up research results associated with the project.

Regarding the Paleontological Research Institution portion of the project, led by PI Jonathan Hendricks,
PRI's funding as part of this project is winding down and they expect to conclude their work in June.
COVID-19 impacts: See discussion above under "Education and Outreach Activities" noting how usage of our digital resources has increased.

Regarding the South Dakota School of Mines & Technology portion of the project, led by co-PI Laurie Anderson:

they have completed all of their aims associated with the project and will be finishing up by the end of this June.

Regarding the Fort Hays State University portion of the project, led by PI Laura Wilson:
they have completed all of their aims associated with the project and will be finishing up by the end of this June.
COVID-19 impacts: Productivity over the past month has been reduced due to Kansas stay-at-home orders related to the COVID-19 epidemic. This time has been spent—in part—developing web-based educational content for the Sternberg website directed towards educators and the public. This content is intended to teach individuals about the Late Cretaceous Western Interior Seaway and the animals within it, and utilize many of the specimen images produced up to this point.

Regarding the University of Colorado portion of the project, led by PI Talia Karim (TK):
they have submitted a NCE to continue their work on the project in the coming year.

Karim (PI) was one of the workshop co-organizers for the Georeferencing for Paleo workshop sponsored by iDigBio. The two day workshop was held April 28th and 29th via two 90 minute sessions and had over 50 attendees, including many members of the CW TCN. They will be writing up a blog post for the iDigBio website on the workshop.

COVID-19 impacts: CU transitioned to working remotely on March 16th and they have been able to move both their student hourly employees to remote work on the grant. Both were previously doing imaging, image editing and upload, and data entry into Specify. The students are now focusing on doing locality data transcription from digitized ledgers and georeferencing using spreadsheets instead of Specify to record information and have managed to georeference over 100 more localities during the last reporting period, but they have not yet been entered into Specify. This workflow takes a bit longer with some extra steps, but they have managed to find a system that is working, even if they are on lower bandwidth internet connection. Associated work cataloging and rehousing (done by volunteers and museum studies students) Cretaceous specimens has paused due to stay at home orders for Colorado. They hope to resume those when they are able to get back into the collection.

They also transitioned the Georeferencing for Paleo workshop sponsored by iDigBio to an online meeting.

Regarding the University of Texas portion of the project, led by Rowan Martindale and Lisa Boucher with major participation from Liath Appleton,
they have submitted a NCE to continue their work on the project in the coming year.
COVID-19 impacts: The graduate student working as a GRA this semester has continued work remotely on other aspects of their digitized records (editing and attaching images to Specify, updating records, etc), but cannot capture new specimen images. The few relevant Cretaceous localities left to georeference are challenging and require access to some physical records, so their georeferencers have not been able to work remotely on these.

Regarding the portion of the project involving our PEN partner at the Los Angeles County

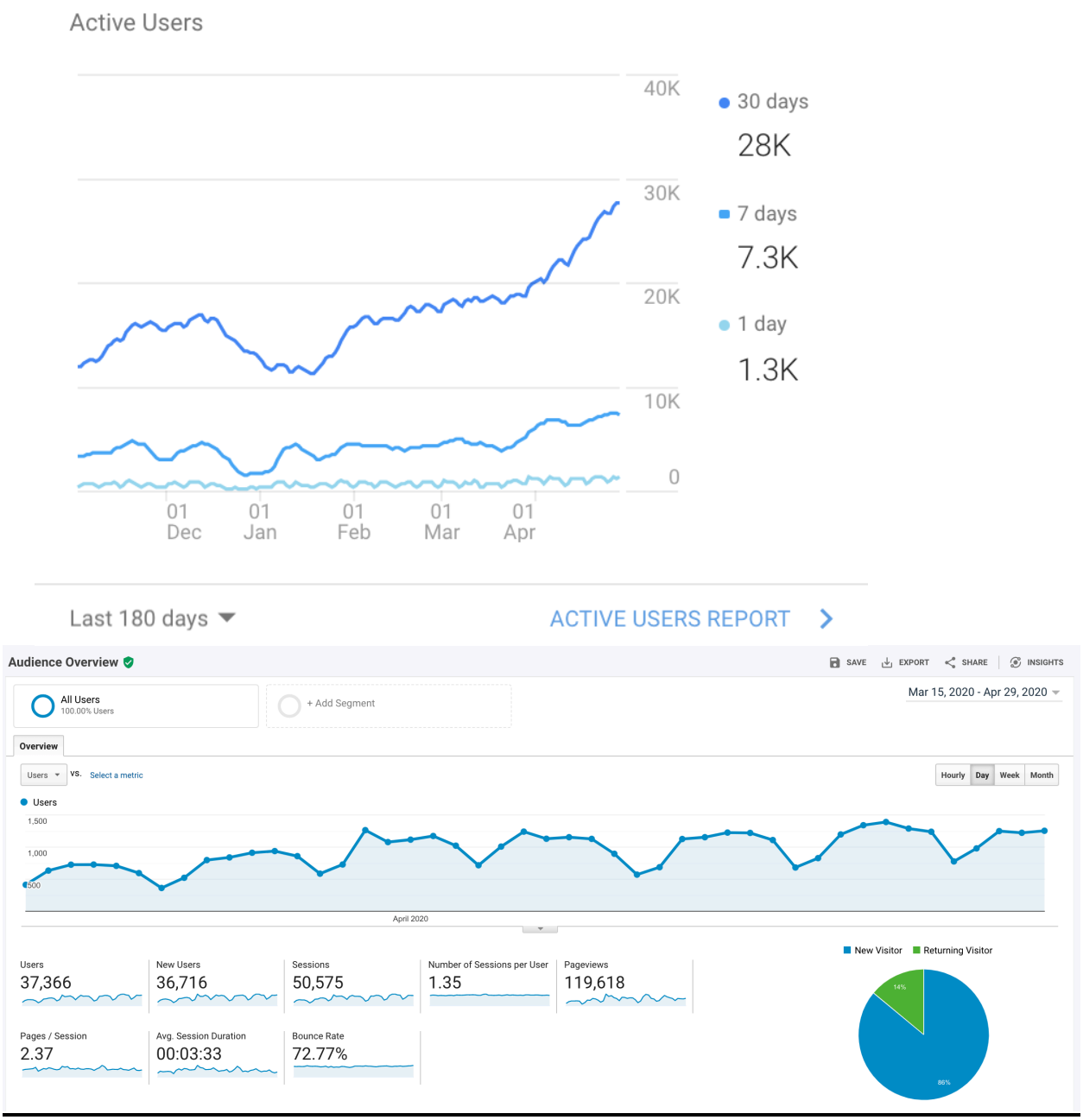
Museum (LACM) of Natural History, led by Austin Hendy and Lindsay Walker:
COVID-19 impacts: Notably, they anticipated beginning our full-time commitment to the TCN by now; however, the safer-at-home orders have posed impediments to progress. At this time, they are currently unaware of when the museum will reopen to staff, and are even less sure of when they will have assistance from volunteers to get our workflows running at full capacity. However, they will continue doing what they can remotely, and are actively planning for how to best move forward given the circumstances.

Attachment 1

Attachment 2

Source URL: https://www.idigbio.org/node/564/submission/1619

Increased Usage of Digital Atlas of Ancient Life Resources During COVID-19



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Submission #1620

Submission information

Form: TCN Quarterly Progress Report to iDigBio
Submitted by cskema
Tuesday, May 5, 2020 - 08:54
100.34.249.223

TCN Name:
The Mid-Atlantic Megalopolis: Achieving a greater scientific understanding of our urban world

Person completing the report:
cskema@upenn.edu

Progress in Digitization Efforts:
Please see attached report (as pdf).

Share and Identify Best Practices and Standards (including Lessons Learned):
Please see attached report (as pdf).

Identify Gaps in Digitization Areas and Technology:
Please see attached report (as pdf).

Share and Identify Opportunities to Enhance Training Efforts:
Please see attached report (as pdf).

Share and Identify Collaborations with other TCNs, Institutions, and Organizations:
Please see attached report (as pdf).

Share and Identify Opportunities and Strategies for Sustainability:
Please see attached report (as pdf).

Share and Identify Education and Outreach (E&O) Activities:
Please see attached report (as pdf).

Google Analytics

Other Progress (that doesn't fit into the above categories):
Please see attached report (as pdf).

Attachment 1

2020_05_MAM_Quarterly_Progress_Summary.pdf

Attachment 2
CHRB_Coronavirus_Transcription_Instructions_Protocol.pdf

Source URL: https://www.idigbio.org/node/564/submission/1620

Mid-Atlantic Megalopolis TCN
Quarterly Progress Report[1]
February 2019 – April 2020

Progress in Digitization Efforts: Figure 1 shows progress over time for the MAM Project by changes in the number of both specimens entered into workflow and completely digitized specimens (= imaged + transcribed + georeferenced) against the number of specimens promised to NSF for the project. The current numbers for progress of digitization efforts by specimen category for each herbarium[2] are shown in Table 1 and Figure 2.

Share and Identify Best Practices and Standards: Nothing to report.
Identify Gaps in Digitization Areas and Technology: Nothing to report.
Share and Identify Opportunities to Enhance Training Efforts: Nothing to report.
Share and Identify Collaborations with other TCNs, Institutions, and Organizations: Nothing to report.
Share and Identify Opportunities and Strategies for Sustainability: Nothing to report.

Share and Identify Education and Outreach Activities: Students in Dr. Hong-Wa's Systematic Botany course at Delaware State University transcribed 1,790 DOV records this semester. Dr. Jordan Teisher (Collections Manager, PH) organized and ran an online transcription training session for members of The Academy of Natural Sciences, Philadelphia on 22 April 2020.

Other Progress: Nothing to report.

COVID-19 update: Many MAM herbaria were closed due to coronavirus lockdowns at some point in the last months (typically March), ending access to physical specimens for the time being. Obviously, this has halted any barcoding or imaging that was in progress, as well as various other tasks related to the sheets themselves (e.g., adding barcodes for multiple specimen sheets, refiling, re-imaging, consulting sheets to resolve issues highlighted during online work). As a result, herbaria have shifted to, or continued with, remote digitization work (e.g., image upload, transcription, georeferencing, proofreading/reviewing), some developing new institutional-specific protocols in the process (see uploaded CHRB document). Some herbaria have had staff furloughed as a result of budget restrictions due to shutdowns. Some herbaria have reported an increase in interest in volunteer transcription because of the stay-at-home orders, while others have had their volunteer labor dry up completely.

[1] Throughout this report, herbaria are referred to by their Index Herbariorum acronyms, which correspond to institutional names as follows: BALT = Towson University, CHRB = Rutgers University, CM = Carnegie Museum, DOV = Delaware State University, HUDC = Howard University, MARY = University of Maryland, MCA = Muhlenberg College, MOAR = Morris Arboretum of the University of Pennsylvania, NY = New York Botanical Garden, PAC = Pennsylvania State University, PH = The Academy of Natural Sciences of Drexel University, SIM = Staten Island Museum, TAWES = Maryland Department of Natural Resources

[2] Although updated progress for HUDC and NY are no longer included in these reports as they closed their NSF grants on the MAM Project as of 31 August 2019, their total numbers of specimens completed in the MAM Project to that date are still reported in Figure 1 and Table 1 in the interest of showing project totals.

Figure 1. Progress over time for MAM Project.

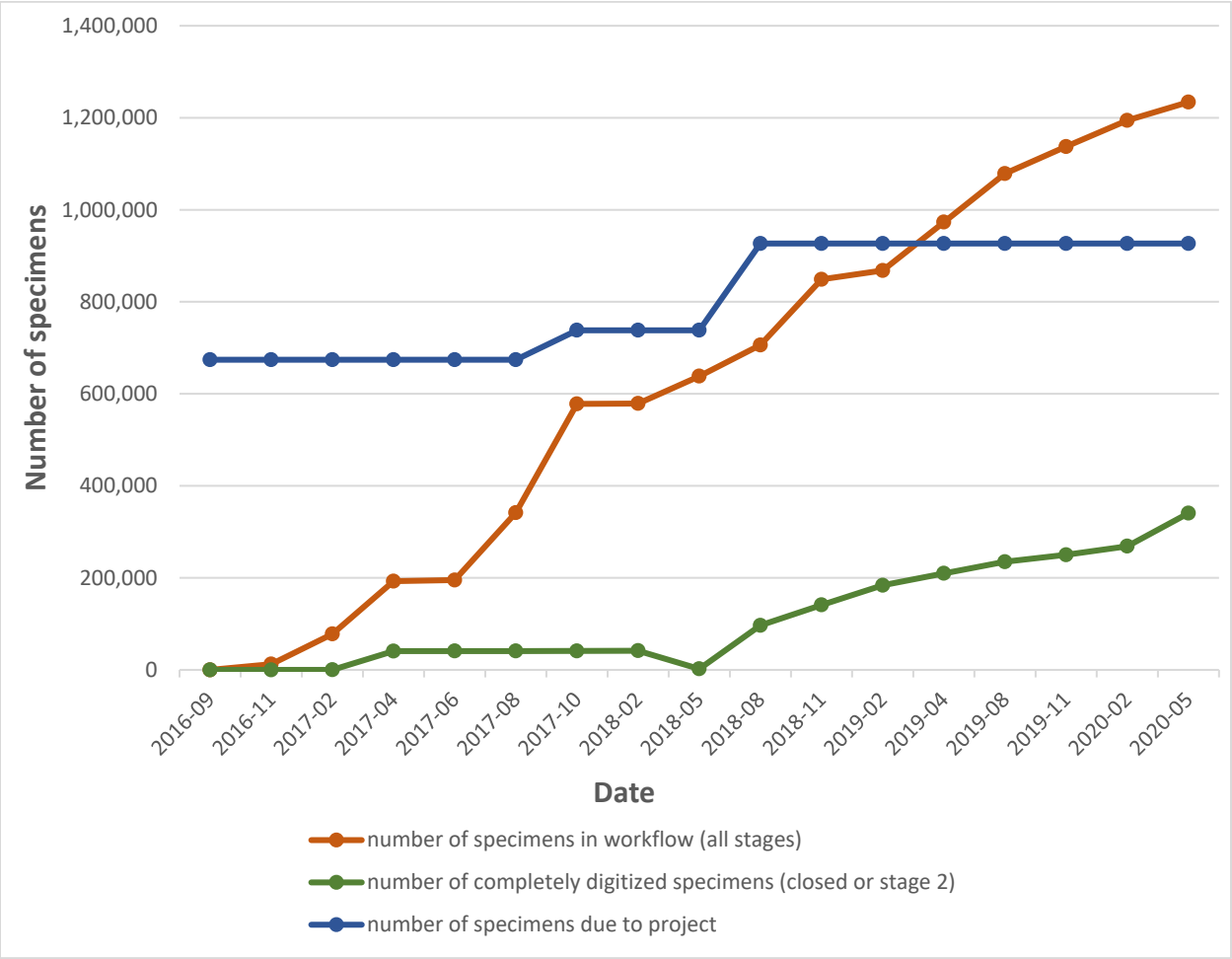
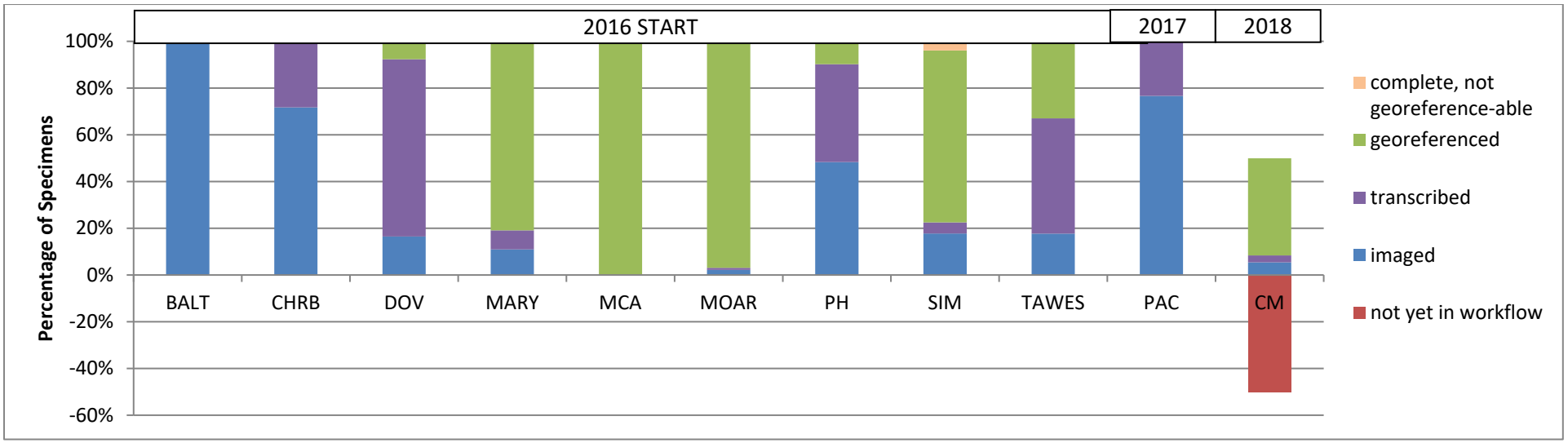


Table 1. Digitization of specimens by stage of completion and herbarium for MAM TCN.

	Herbarium											
Specimen Stage	BALT	CHRB	DOV	MARY	MCA	MOAR	PH	SIM	TAWES	PAC	CM[7]	**Totals**
# specimens imaged[1]	30,000	4,702	0	0	0	0	0	0	0	0	10,167	**44,869**
# specimens as above and uploaded to Symbiota along with skeletal data; transcription/review may be in progress[2]	6,570	54,875	8,791	4,894	0	68	218,552	0	0	57,014	0	**500,525**
# specimens as above + completely transcribed and transcription reviewed[3]	0	23,941	40,442	3,741	0	189	189,887	1,037	2,118	17,351	5,584	**342,310**
# specimens as above + georeferenced[4]	0	0	4,067	37,061	51,009	20,350	44,413	15,997	1,400	0	78,399	**339,257**
# specimens that need special attention, e.g. go back to sheet[5]	127	0	0	133	2	386	343	3,857	760	0	57	**5,832**
# specimens imaged, uploaded, transcribed BUT not able to be georeferenced[6]	2	0	0	105	52	43	33	848	15	0	0	**1,236**
Totals	**36,699**	**83,068**	**53,300**	**45,934**	**51,063**	**21,036**	**453,228**	**21,739**	**4,293**	**74,365**	**94,207**	**1,234,029**

Processing Status in the MAM Portal: [1] No stage, not in Symbiota yet; [2] Unprocessed + Expert Required + Pending Review; [3] Stage 1; [4] Stage 2; [5] Stage 3; [6] Closed
[7] CM also has 103,725 specimens that have been georeferenced and were previously transcribed, but are not yet imaged.

Figure 2. Percentage of specimens by stage of completion and herbarium for MAM TCN. With this presentation of digitization progress, the final goal for each institution is to have a mostly green column above the X axis (could potentially have orange up to roughly 10%). Specimens not yet in workflow are set as negative numbers.



Updates:

Please check here for any updates, they will also be emailed to you as well!

3/19/2020: As of today, due to the coronavirus complications and stress this has cause to everyone, we have chosen to lower the required number of specimens per hour from ranged numbers of 15-20 (Angiosperms & Ferns) and 10-15 (Algae and Fungi) to 10/hr. This means that based on the remaining hours you have left you can easily calculate how many specimens you will need to transcribe in order to complete your hours.

- We fully understand and support all of you, if you have any questions, concerns, comments, etc. please reach out at any time! If you are under difficult circumstances right now and need to postpone your work for the future please let us know so we can make future arrangements together. For those of you who would prefer to get it over and done with, there is no issue with that as well.

We would also like to encourage you to keep connected with us, with nature and with your fellow interns while we are distancing ourselves!

Post and tag things that relate to herbaria, flowers, ferns, algae, fungi, lichens and bryophytes!

Ideas:

- A very cool/ unusual herbarium specimen you transcribed
- A rock I painted as a token for the Ballast Project
- A species (related to those listed above) I found outside/ what it is or that you would like to know what it is!
- The coolest plant within 6 ft of me whenever and wherever I am inside or outside!
- My transcription workplace while I am working remotely
- My pet plant
- Favorite music, genre, podcast, etc. that I listen to when I transcribe!
- My recent thoughts, ideas or dreams on plants and herbaria
- My imaginary plant/fungus
- This plant makes me feel better, and maybe include why it does!

Tag us on Facebook **@Chrysler Herbarium at Rutgers University** and Instagram: **@chryslerherbarium**
Include tags such as: **#ChryslerHerbarium #HerbariumArmy #COVID-19Can'tStoptheHerbariumArmy**

We would like to encourage you all to post a few things each if you can, this will be stimulating for your brain, keep you in good thoughts, and give you something to do in your spare time while keeping in touch with fellow interns and communicating science! Comment on each other's posts, and engage with one another. I will likely be pulling these together to post as a story on our website over the summer!

inaturalist is a great resource for you to learn many organisms outside and inside your home! The 2020 Personal Bioblitz is currently going on (March 1st - May 15th), so feel free to join this project and get more information at the following:

2020 Project Website: https://tinyurl.com/PB-info2020
About the Personal Bioblitz: http://tinyurl.com/RUPBabout
Mailing list: http://tinyurl.com/RutgersBioblitzMail
iNaturalist, *Personal Bioblitz 2020*: https://tinyurl.com/PersonalBioblitz2020
iNaturalist, *Flora and Fauna of Rutgers University*: http://tinyurl.com/iNatFFRU
Facebook page: http://tinyurl.com/RutgersBioblitzFB

CHRYSLER HERBARIUM

NOTICE

COVID-19 PRECAUTIONS IN EFFECT

Due to the potential spread of COVID-19 and corona virus in our communities, Rutgers University have implemented new policies. These also includes the Chrysler Herbarium.

Until further notice:

- Chrysler Herbarium will stay open for Rutgers students doing internships, honor research projects, and other work.
- No more than 14 people are allowed to be in the herbarium at the same time.
- **Wash your hands thoroughly with soap and water before entering the herbarium** and follow CDC recommendations (3 feet/1 m distance to other people, leave if you feel sick, avoid close contact, keep hands clean at all times, don't touch your face, etc.).
- **If you get sick, do not come to the herbarium, stay home and get better**. Please let Megan King or Lena Struwe know if you get ill.
- All group tours are cancelled, and no new tours will be planned.
- Visiting scholars are not allowed to visit the herbarium unless approved by the Director.
- Other guest visits will not be scheduled, unless approved by the Director.
- All work tables, door knobs, cabinet handles, and other commonly used surfaces will be wiped with disinfectant at least once a day.

- **We encourage all students an option to work remotely during this time**. Students working remotely will do transcription of herbarium labels in the Symbiota database of our herbarium specimens. If you want to work remotely for your internship or paid work, contact Megan King for instructions and training. Training will be done either in the herbarium or by Megan e-mailing you instructions.

If you have any questions, contact Megan King (megan.king@rutgers.edu), Collections Manager, or Lena Struwe (lena.struwe@rutgers.edu), Director of Chrysler Herbarium.

Thank you for your cooperation!

11 March, 2020

Due to the unfortunate circumstances of the coronavirus and new policies at Rutgers University, Chrysler Herbarium is encouraging the use of our virtual databases to work remotely.

Portals with records available for online transcription:

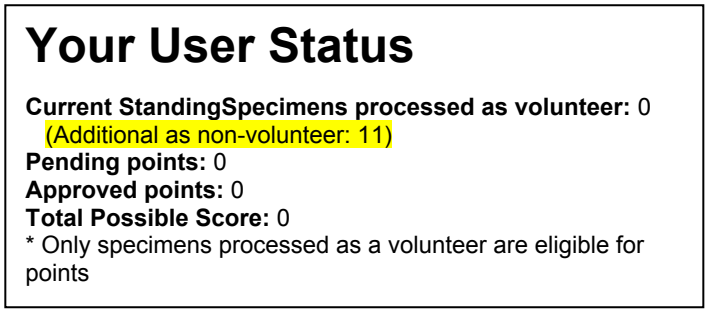
MAM (Mid-Atlantic herbaria): http://midatlanticherbaria.org/portal/
(Contains Angiosperm specimens, Ferns and Fern Allies)

Macroalage portal: https://www.macroalgae.org/portal/index.php
(Contains algal specimens)

Mycoportal: https://mycoportal.org/portal/
(Contains fungal specimens, primarily plant pathogens)

You must, in order to receive credit for the work you do, record all times, number of specimens transcribed and total hours it. The spreadsheet has tabs for each portal collection and the total hours will add automatically while rounding up to the nearest 10th of an hour.

- **In the event that you forget to record your numbers, please reach out to me and I can provide them for you.**
- **To find the number of specimens you have transcribed, please go to**
  - **Crowdsource Data Entry**
    - **Highlighted area below is your number transcribed, this number compounds, so write down the number before you start so you know how much to subtract!**



Link to spreadsheet for rate reporting:
https://drive.google.com/file/d/1Es2wahMPBVaQ0nz0d2m_PDP0DuTwFfea/view?usp=sharing

Please follow instructions on the next page for accessing the portals and creating an account

Transcription Instructions
CHRYSLER HERBARIUM (CHRB)

Please go to one of the following portals:

MAM (Mid-Atlantic herbaria): http://midatlanticherbaria.org/portal/
(Contains Angiosperm specimens, Ferns and Fern Allies)

Macroalage portal: https://www.macroalgae.org/portal/index.php
(Contains algal specimens)

Mycoportal: https://mycoportal.org/portal/
(Contains fungal specimens, primarily plant pathogens)

Select **New Account** or **Log in** (upper right-hand corner of the homepage)

- Creating an account
  - You only are required to fill in the fields in the top portion marked with *

Remember to mark down, save, or remember your login details.

Once you have created an account

- Logout and notify Collections Manager that your account has been created
  - Send the following information to Collections Manager (Megan King)
    - **First and Last Name**
    - **User Name**

After being granted editor access by Collections Manager

- Log in
  - Go to **My Profile** in the upper left-hand corner of the page
    - **Specimen Management** tab
      - Click on **Rutgers University, Chrysler Herbarium (CHRB)** under collection management
        - In the Data Editor Panel, 4th bullet down: **Edit Occurrence Records**

See next page for collection specific instructions

For all of the following, some records may already be completely or partially transcribed, please check that the information is correct, and fix what is incorrect.

Angiosperms (flowering plants): *Rate: 10/hr*

Search Box:

Processing status: Unprocessed
Check off: With Images
*Search Field: Label project **IS NULL** Fern - (not currently working)*
CLICK: DISPLAY TABLE

FERN (ferns and fern allies): *Rate: 10/hr*

Search Box:

Processing status: Unprocessed
Check off: With Images
*Search Field: Label project **EQUALS** Fern*
CLICK: DISPLAY TABLE

Fungi: *Rate: 10/hr*

Search Box:

Processing status: Unprocessed
Check off: With Images
CLICK: DISPLAY TABLE

Algae: *Rate: 10/hr*

Search Box:

Processing status: Unprocessed
Check off: With Images
CLICK: DISPLAY TABLE

Record Transcription: Filing in the Fields

If the information is already filled in, check to see that it is correct and then submit the record!
Feel free to click on the green question marks to the right of each field title for more information (:

To unlock the specimen image so it will scroll as you do, please click the above the image.

Collector Information
Catalog Number: Prefilled with the barcode number
Other Cat. #s: CHRB # typically upper right-hand side, above collection label, or bottom right corner
Collector: Name of primary collector; if not present enter Unknown
See Collectors List pdf for more information on collector
Number: Number given by collector, usually after name or top right of label; if not present enter s.n.
Date: Date specimen was collected as (yyyy,mm,dd); if not present enter s.d. into Verbatim Date
Associated Collectors: Names listed in addition to the primary, Ex. Jack Frost (primary), Jennifer Smith (associated)
Verbatim Date: If year isn't present (s.d) or if date is otherwise ambiguous; Ex. Spring 1907 or June 16th

Latest Identification
Scientific Name: Genus and species of specimen – this name should have previously been recorded as the most recent nomenclature update/identification, look for labels in addition to the collection label, typically above the collection label on the right side.
Author: This will populate based on the name, if it doesn't please add what is on the most recent identification.
Family: This will populate based on the name, if it doesn't please add what is on the most recent identification.
Identified by: Put the name listed on the most recent label of identification whether or not it is a nomenclature change or re-identification, Ex. Megan R. King
Date Identified: Put the date listed on the most recent label of identification whether or not it is a nomenclature change or re-identification Ex. 12 Jan 2020

Locality **(See something that says Ballast!? - Go to the last page for ballast transcription instructions!)**
Country: Country of collection, do not abbreviate; Ex. United States not USA (may already be filled in)
State/Province: State of collection, do not abbreviate; Ex. Pennsylvania not PA (may already be filled in)
County: County of collection, do not include "county" Ex. Middlesex not Middlesex County
Municipality: City, Township, etc., classification lower than county (not to be confused with locality – see below)
Locality: Geographical location
- Ex. Botanical Garden, Borden Park, Arnold Arboretum, 3 miles SW of Avalon, near Princeton

Coordinates: Add in Verbatim Coordinates field
Elevation: In meters, if applicable

Misc. **(See something that says Ballast!? - Go to the last page for ballast transcription instructions!)**
Habitat: Environmental conditions; Ex. Old field, swamp, woods
Substrate: Technical description of inorganic material; Ex. soil, Wissahickon Formation
Associated Taxa: Species occurring in same area as collected specimen; Ex. Rosa multiflora, Lonicera japonica

Description: Characteristics that might have changed over time or can't be seen.

- Ex. Flowers yellow, corolla purple, 5 ft. tall, leaves entire, opposite leaf arrangement, etc.

Notes (Occurrence Remarks):

- Put old herbarium info
    - Example: Ex. Herbarium Princeton University #2966
- "Drop all" – any various information on the sheet that you are not sure where to put you will put here
    - Example: FNJ! M.I. Palmer 2007; Flora of New Jersey

Life Stage, Sex, Phenology: Not required, but if you understand this info - if noted on the specimen (ex. fl, v, fr)

Cultivated/Captive: Check box if applicable (NJ seed laboratory would be cultivated)

Processing Status (drop down)**:**

- Unprocessed: to skip record/keep the record in the transcription pool
- Stage 1: You are confident that you have transcribed the record to the best of your ability
- Pending Review: You don't fully understand, or can't transcribe the specimen record fully
- Expert Required: Label or information is illegible or is in a foreign language.

Status Auto-set (drop down)**:** Please set this to **Not Activated**!

Any fields not listed here may be left blank, and you are not required to fill them in!

Transcribing Ballast Specimens

Common Ballast Collectors:

- *C.F. Parker*
    - *Charles F. Parker*
- *Addison Brown*
- *Isaac Burk*
- *Isaac C. Martindale*
- *C.F. Austin*
    - *Coe Finch Austin*
- *J. Schrenk*

Terms:

➢ Ballast

- *Enter "ballast" under substrate*

➢ Ballast ground

- *Enter "ballast ground" under habitat*
- *Enter "ballast [assumed]" under substrate*

➢ Ballast pile

- *Enter "ballast pile" under habitat*
- *Enter "ballast [assumed]" under substrate*

Locations:

➢ New Jersey

- *Camden, Ballast*
    - *Enter "Camden" under county*
    - *Enter "Camden" under municipality*
    - *Enter "ballast" under substrate*
- *Communipaw*
    - *Enter "Hudson" under county*
    - *Enter "Jersey City" under municipality*
    - *Enter "Communipaw" under locality*
- *Kaighn's Point*
    - *Enter "Camden" under county*
    - *Enter "Camden" under municipality*
    - *Enter "Kaighn's Point" under locality*
- *Cooper's Point ○ Enter "Camden" under county*
    - *Enter "Camden" under municipality*
    - *Enter "Cooper's Point" under locality*
- *Petty's Island ○ Enter "Camden" under county*
    - *Enter "Camden" under municipality*
    - *Enter "Petty's Island" under locality*

➢ Pennsylvania

- *Greenwich Point*
    - *Enter "Philadelphia" under county*
    - *Enter "Philadelphia" under municipality*
    - *Enter "Greenwich Point" under locality*

Published on *iDigBio* (https://www.idigbio.org)

Submission #1625

Submission information

Form: TCN Quarterly Progress Report to iDigBio
Submitted by mpace
Tuesday, May 5, 2020 - 16:36
66.232.49.62

TCN Name:
Digitizing "Endless Forms": Facilitating Research on Imperiled Plants with Extreme Morphologies

Person completing the report:
mpace@nybg.org

Progress in Digitization Efforts:
Very good process has been made, with 1,036,051 specimens barcoded, 569,071 specimens imaged, 769,968 specimen fully transcribed, and 274,257 specimens georeferenced. These numbers are slightly below actual numbers, because Endless Forms participant ILLS is unable to access their database from home, thus the totals cited above do not include ILLS stats.

Unfortunately, work for many of our TNC participants has ground to a halt, or are severely curtailed, due to the COVID 19 pandemic. The reasons vary, including:
1. Lack of access to physical collections
2. Inability to work from home / lack of VPN access to online databases
3. Loss of student workers and interns / staff furloughs
4. Specimens have been barcoded and transcribed, and work was currently focusing on imaging, which requires physical access to the collections

Conversely, many TCN participants are expanding virtual volunteering activities through Digivol and Notes from Nature. For example TCN lead organization NYBG has held 6 transcription expeditions focusing on Endless Forms taxa, with over 200 participants, and a 6-fold increase in the rates of data transcription by online citizen scientists.

For institutions with digital VPN access to databases, progress has slowed due to loss of student / intern workers.

Share and Identify Best Practices and Standards (including Lessons Learned):
Having a large bank of specimens images available to share with citizen scientists transcribers is very beneficial when physical access to the specimens is limited or

impossible.

Identify Gaps in Digitization Areas and Technology:
none

Share and Identify Opportunities to Enhance Training Efforts:
none

Share and Identify Collaborations with other TCNs, Institutions, and Organizations:
none

Share and Identify Opportunities and Strategies for Sustainability:
none

Share and Identify Education and Outreach (E&O) Activities:
As stated above, participation in Digivol and Notes From Nature has enabled several partners to continue work and outreach during the current pandemic.

NYBG: held 6 transcription expeditions focusing on Endless Forms taxa, with over 200 participants, and a 6-fold increase in the rates of data transcription by online citizen scientists during the past month.

MO: Collection and Project-Related Tours and Public Events: 4 events, 353 people. 1) 25 February 2020. World Trade Center, British Delegation, 13 people; 2) 28 February 2020, Missouri Department of Natural Resources, Cape Girardeau Nature Center, 6 people; 3) 5 March 2020, Orchid Nights (Garden Members, general public), 317 people; 4) 6 March 2020, Poplar Bluff, Missouri, Gardeners Group, 17 people.

BRIT: April 2020: WeDigBio Lite (38 ppl): two Zoom webinars were held to introduce specimen digitization and walk attendees through Notes from Nature transcriptions. NfN expeditions included Endless Forms taxa but were not exclusive to these. 38 individuals attended these two events. April 2020: We have held two #TranscriptionThursdays (~35 ppl) through Zoom to introduce new citizen scientists to specimens and Notes from Nature transcriptions, these events include expeditions with EF specimens. March: Blog produced by herbarium staff member about carnivorous plants, the EF TCN, and a visit to a Texas carnivorous plant nursery (http://brit.org/phytophilia/plants-that-bite). March: The Endless Forms exhibit on carnivorous plants showcasing specimens and library resources as was removed (it had been installed October 2019) and content was replaced with an exhibit about milkweeds of Texas and Oklahoma and monarchs. Both exhibits are bilingual (English-Spanish) and describe the EF TCN and include laminated images of herbarium specimens digitized under the EF TCN.

WIS: Herbarium had a booth at the PBS 2020 Garden and Landscape Expo, 7-9 February, where we demonstrated our portals and recruited volunteers for online data transcription projects.

Google Analytics

Other Progress (that doesn't fit into the above categories):

Attachment 1

Attachment 2

Source URL: https://www.idigbio.org/node/564/submission/1625

Published on *iDigBio* (https://www.idigbio.org)

Submission #1630

Submission information

Form: TCN Quarterly Progress Report to iDigBio
Submitted by amiller
Wednesday, May 6, 2020 - 13:47
192.17.34.136

TCN Name:
The Microfungi Collections Consortium: A Networked Approach to Digitizing Small Fungi with Large Impacts on the Function and Health of Ecosystems

Person completing the report:
amiller7@illinois.edu

Progress in Digitization Efforts:
see attached file

Share and Identify Best Practices and Standards (including Lessons Learned):
see attached file

Identify Gaps in Digitization Areas and Technology:
see attached file

Share and Identify Opportunities to Enhance Training Efforts:
see attached file

Share and Identify Collaborations with other TCNs, Institutions, and Organizations:
see attached file

Share and Identify Opportunities and Strategies for Sustainability:
see attached file

Share and Identify Education and Outreach (E&O) Activities:
see attached file

Google Analytics

Other Progress (that doesn't fit into the above categories):

Attachment 1
MiCC_SECOND_Q_2020_REPORT.pdf

Attachment 2

Source URL: https://www.idigbio.org/node/564/submission/1630

Second Quarter 2020
February, March & April

Progress in Digitization Efforts

- 18885 images and 1418 records from NYS have been uploaded to the MyCoPortal.
- 97,669 records from the National Museum of Nature and Science – Japan (TNS) have been uploaded to the MyCoPortal.
- Due to the novel COVID-19 virus, 6 staff at the INHS have been working remotely transcribing and georeferencing fungal and lichen records for ILL and ILLS.

Best Practices and Standards (Lessons Learned)

- Nothing new to report.

Gaps in Digitization Areas and Technology

- Nothing new to report.

Opportunities to Enhance Training Efforts

- 10 staff at the INHS have been trained via Zoom to transcribe and georeferenced fungal and lichen records, 6 of which are presently working.

Collaboration with other TCNS, Institutions, and Organizations

- Nothing new to report.

Opportunities and Strategies for Sustainability

- A new, drag-and-drop image upload system has been developed to transfer images over the internet to our servers here at INHS. Image ingestion, thumbnail creation and record linking are being developed.
- An exsiccati download feature is currently being developed that will allow the exsiccati title and exsiccati number fields to be downloaded when a Symbiota dataset download is conducted.

Education and Outreach Activities

- Nothing new to report.

Other Progress

- Please see MyCoPortal Data Portal Statistics generated from Google Analytics (attached).

Publications

- MyCoPortal has been cited 65 times, 8 times in 2020, in peer-reviewed journal publications.

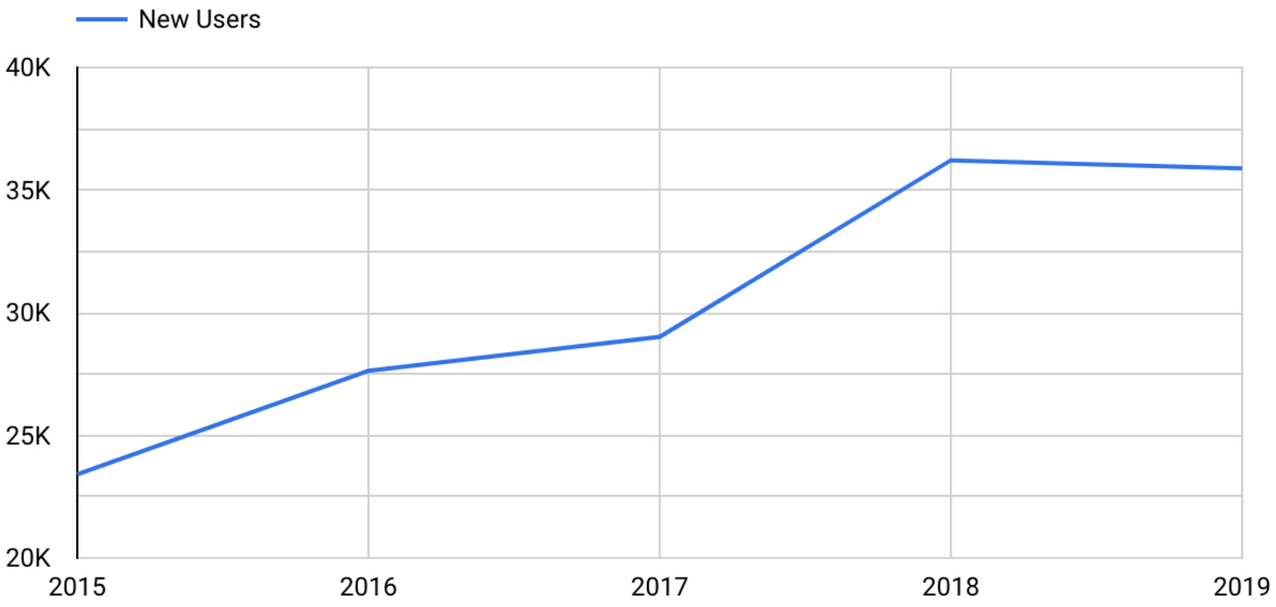
Presentations

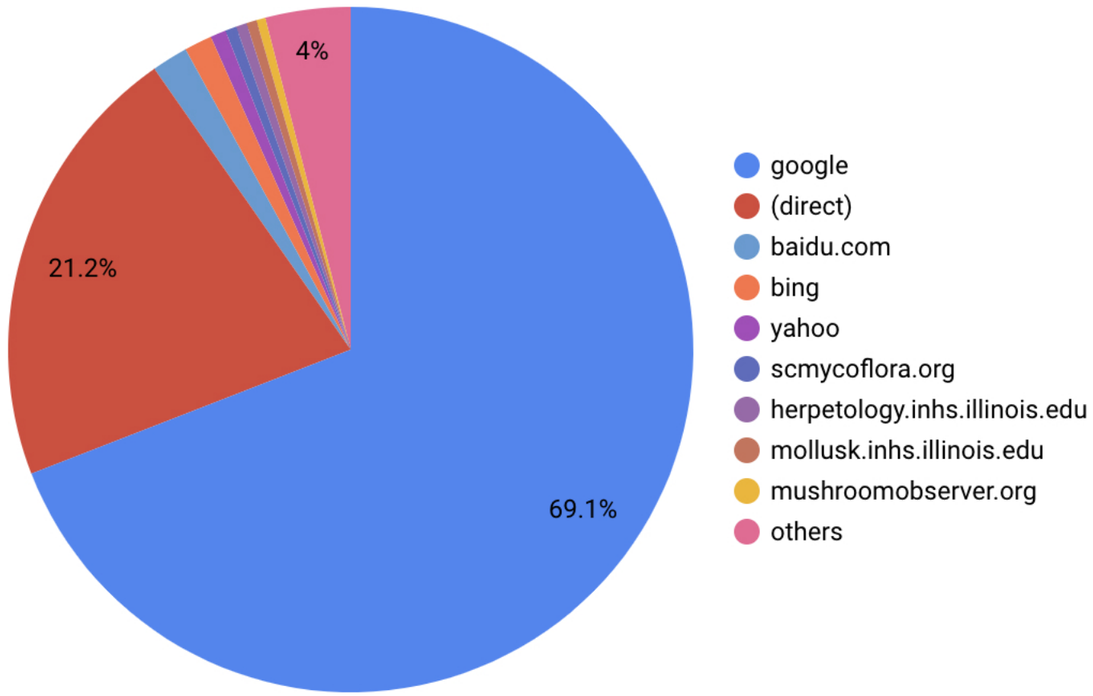
- Nothing new to report.

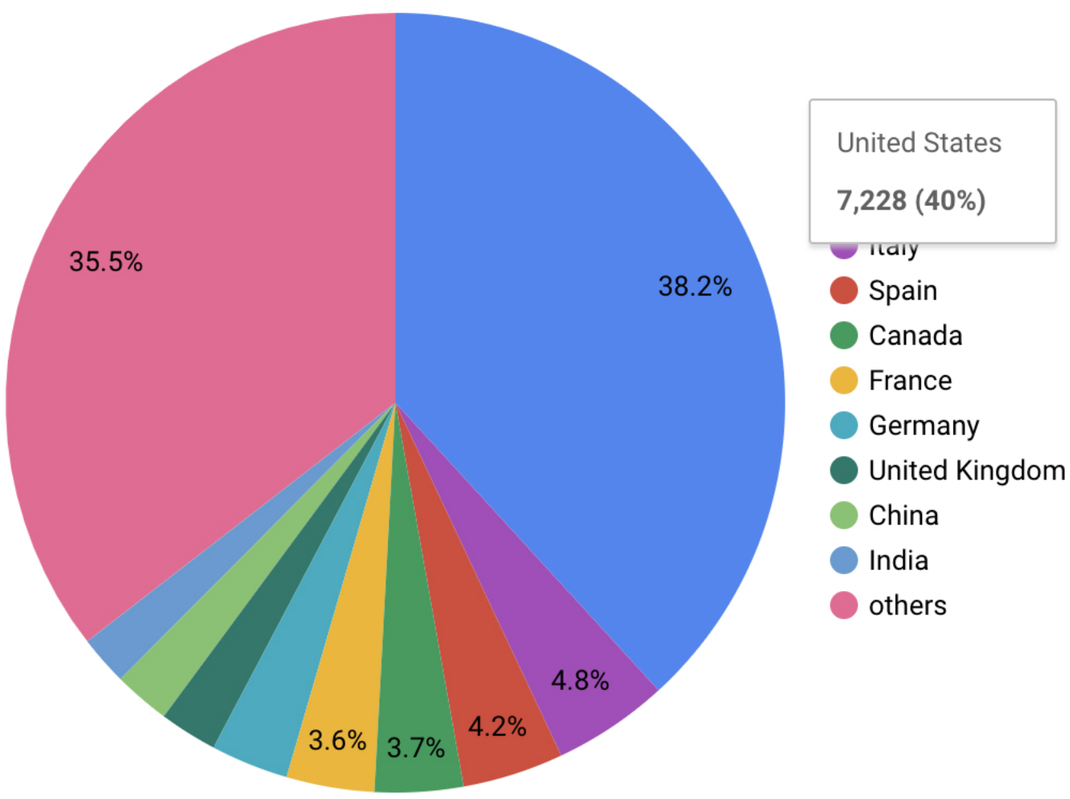
MyCoPortal Data Portal Statistics

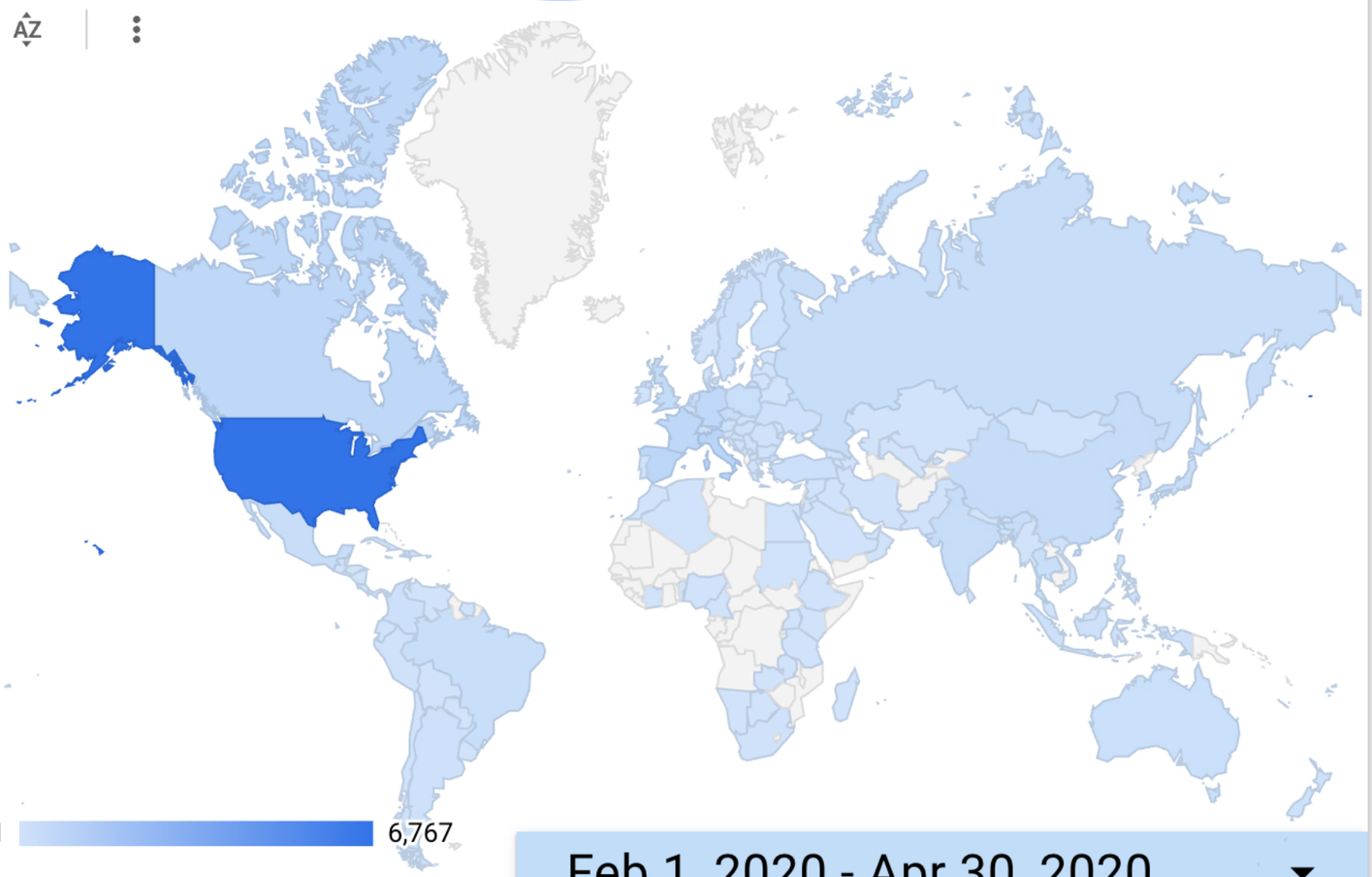
www.mycoportal.org **Data from Google Analytics**

Users	New Users	Sessions	Number of Sessions per User	Pageviews	Pages / Session	Avg. Session Duration	Bounce Rate
10,320	9,317	17,714	1.72	51,397	2.9	00:03:16	60.11%









Feb 1, 2020 - Apr 30, 2020

Published on *iDigBio* (https://www.idigbio.org)

Submission #1624

Submission information

Form: TCN Quarterly Progress Report to iDigBio
Submitted by djbarroso
Tuesday, May 5, 2020 - 14:33
99.136.86.213

TCN Name:
American Crossroads: Digitizing the Vascular Flora of the South-Central United States (TORCH TCN)

Person completing the report:
diego.barroso@yahoo.com

Progress in Digitization Efforts:
• Number of skeletal records created:

BAYLU = 0
BRIT = 0
HUH = 42
KANU = 205 (for seed packets in the collection which probably won't be imaged, but will be databased. Nearly all seed specimen records have a corresponding pressed reference specimen in the collection.)
MO = 0
NOSU = 0
NY = 53
OKL = 0
OKLA = 0
TAES = 0
TAMUCC = 0
TEX/LL = 0
TTC = 0
UTEP = 0

Total skeletal records created this quarter: 300

• Number of fully-transcribed records created:

BAYLU = 0
BRIT = 5,963 (includes 3,804 by TEX students & 1,500 from a NfN Expedition)

HUH = 10,082
KANU = 1,656 (increases total of fully-transcribed OK & TX records to 21,395)
MO = 26
NOSU = 0
NY = 24,357
OKL = 153
OKLA = 300
TAES = 0
TAMUCC = 0
TEX/LL = 1,801 (See “Other Digitization Efforts” below for cumulative totals and data provider contributions; see also collaboration with BRIT)
TTC = 0
UTEP = 0

Total fully-transcribed records created this quarter: 44,338

• Number of specimens imaged:

BAYLU = 2,000
BRIT = 5,165
HUH = 2,644
KANU = 0 (previous estimate of total had been ca. 3,000 from OK & TX, but this is now revised up to 5,163, of which 2,993 are from OK and 2,170 are from TX)
MO = 157
NOSU = 0
NY = 0
OKL = 6,467
OKLA = 0
TAES = 0
TAMUCC = 0
TEX/LL = 0
TTC = 0
UTEP = 44 (All 44 specimens are from Texas. Imaging has commenced, but due to UTEP regulations for COVID-19, we have been unable to access facilities since March.)

Total number of specimens imaged this quarter: 16,477

• Number of specimens georeferenced:

BAYLU = 0
BRIT = 0
HUH = 0
KANU = 1,792 (total georeferenced records from OK & TX = 21,069)
MO = 596
NOSU = 0
NY = 17,978 (Texas – 16,183; Oklahoma – 1,795)
OKL = 107
OKLA = 0
TAES = 0
TAMUCC = 0
TEX/LL = 0 (We have not yet begun tracking total number of geo- referenced specimens)
TTC = 2,187

UTEP = 50 (All 50 newly-georeferenced specimens are from Texas)

Total number of specimens georeferenced this quarter: 22,710

• Other digitization or pre-digitization efforts:

BAYLU: Barcodes have been attached to over 60,000 specimens in preparation for imaging.

BRIT:

* Implementing an automated protocol for locating Oklahoma specimens within the BRIT-SMU collection to digitize only this small portion of those folders. Training volunteers in this process.

* Implementing a strategy for identifying TORCH TCN specimens within folders of North American collections for another subset of our specimens (VDB). Training volunteers in this process.

* Hosting weekly #TranscriptionThursdays webinars to encourage citizen scientists to use NotesFromNature (NfN) to transcribe TORCH TCN specimens.

* Began a collaboration with TEX that is helping both of our institutions, keeping 28 TEX students employed through the COVID-19 shutdown, who are helping BRIT by transcribing specimens in the Symbiota Sandbox portal (April 2020). As of April 30th, a total of 3,800 records have been transcribed by TEX students.
* Created a new project in Notes from Nature (“Flora of Texas and Oklahoma”) for use by the TORCH TCN (see https://www.zooniverse.org/projects/md68135/notes-from-nature-flora-of-texas-and-oklahoma). The first expedition was launched April 17th, the second was launched April 30th, and the third Expedition is in preparation. Currently, this is all BRIT material – but with plans to add subjects from other institutions in the near future – and with a total participation of 270 volunteers so far.

* Hired a new Digitization Technician (mid-April) to assist with specimen transcription and georeferencing.

* Cleaning legacy datasets for upload into the TORCH portal (some of these were uploaded in this quarter).

* TORCH TCN staff spent significant amounts of time on coordinating image processing and upload to TACC servers (in collaboration with Tomislav Urban and Chris Jordan at UT-Austin), particularly for legacy images.

* Testing for two new imaging set-ups is underway (Nikon DSLRs-Ortery lightboxes-capture/processing software), but these have not yet been put into production. One of the two new units is intended to image specimens sent to BRIT by providers, and the second will be an itinerant setup to be sent out for on-site imaging at provider herbaria.

* Provider herbaria have been contacted, and access to collections was being scheduled when COVID-19 closures went into effect.

* A new BRIT exhibit was created showcasing the BRIT specimens of Texas and

Oklahoma of milkweeds and their relationship with Monarchs. This exhibit showcases the TORCH TCN and the Endless Forms TCN, both of which BRIT participates in.

HUH: Currently developing our gereferencing solution: integrating Geo-Locate into our existing applications.

KANU: All OK and TX specimens in Asteraceae, Fabaceae, Poaceae, Cyperaceae, and pteridophytes have been databased and identified in the cases with drop tags for imaging; most also have been georeferenced. Many other genera and families have been identified with drop tags in cases in preparation for databasing and imaging. By our most recent estimate, we have identified (with drop tags) all OK and TX specimens in >47% of our cases (166 out of 350). We know that is an underestimate because some families were completely databased for other projects, but hourly students have not gone through those cases yet to find the OK and TX specimens.

MO: Nothing new to report.

NOSU: Nothing new to report.

NY: State Spotter – The way we digitize on all TCN projects for maximum efficiency is that we digitize all specimens in the US folders regardless of state, and then we focus on completing records for the geographic area that is the focus of the TCN. Because TORCH is our 6th TCN to follow this procedure, we have essentially already imaged all TORCH specimens, so the trick is to find those among previously imaged specimens that are in the TORCH area. The first step in doing this is what we call State Spotter, which is a pass through the data where we only enter the state. Then, for the TORCH project, we will focus on transcribing only those for the TORCH area. During this period, state values were entered for 7,693 by McKenna Coyle, of which about 15% are in the TORCH region. In total, all NYBG staff and crowd sourcers entered the state name for about 78,000 records, so collectively we probably added the name of the state to about 12,000 records in the TORCH region. These are now in the queue to be fully transcribed.

OKL: Nothing new to report.

OKLA: The remaining 75% of Texas specimens has been located and segregated from other non-Oklahoma collections. OKLA has approximately 2000 images (about 400 fully transcribed) that are queued for ingesting into Symbiota and iDigBio.

TAES: We have acquired a complete imaging station with all requisite parts. We have hired ~5 undergraduate students to engage in the digitization, transcription, and georeferencing, and are working towards establishing a volunteer work force.

TAMUCC: Nothing new to report.

TEX/LL: Cumulative totals for TEX/LL and data providers:

Herbarium Number Databased Number Imaged
TEX/LL 228,074 127,938
SRSC 20,662 20,648
HPC 22,883 3,765
TLU 6,277 27
PAUH 2,022 0

FWNC 1,981 1,981
[no reports from other data providers]
TOTALS: 281,899 154,359

TTC: Began mounting specimens from Guadalupe Mountains National Park collected in 1973-1977. Students will use the scanned collection notes to create labels for these specimens, and then they will be imaged, transcribed, and georeferenced.

UTEP: Imaging station was set-up and optimization was completed. Bar-coding strategy alongside imaging was implemented. We've developed a strategy moving forward.

• Comments about the digitization process:

BAYLU: Complete digitization (photography) equipment has been set-up, and technicians have been trained. Preliminary photos have been acquired.

BRIT: Nothing new to report.

HUH: Digitization continues despite office closures due to COVID-19. Staff are working remotely and focusing on completing transcription and will soon be georeferencing.

KANU: Due to the COVID-19 pandemic, the KU campus has been shut down since the third week of March. Except for essential staff, staff and students are prohibited from entering buildings until the campus reopens. We initially tried to have our hourly students assist with the digitization project remotely, but that proved to be impossible due to access issues to database records. We continue to explore ways that they might be able to contribute skeletal records to the effort.

MO: The two key parts needed to make any initial progress on this project are ordering and installing the components for the imaging work station and securing student workers and/or employees to do the work.

In late February we were just at the point of ordering the equipment for the imaging station, but it was becoming clear that cities and states were going to shut down, so we did not follow through on the ordering at that time.

At that same time, we were looking to recruit and contract new student workers, but that also had to be suspended because of uncertainties within the local universities and the future circumstances of potential student workers.

We had also advertised an employee position to help with the management of the project, and were beginning to receive resumes, but did not get to the point of actually scheduling interviews.

The COVID-19 pandemic exploded at a crucial point in implementing this project and has severely curtailed our ability to conduct the proposed work. Like most museum collections, the pandemic resulted in the closing of our collections to all on-site activities and forcing staff and students to only work on what might be accessible electronically from home.

Since we were, in reality, just beginning the project, we had not accumulated much in the way of "reserve" work that could be processed externally without access to the collections. This basically limited us to georeferencing existing electronic data records. We were also

constrained by the need to use our Tropicos database (http://www.tropicos.org) as the project production platform, which is not compatible with Symbiota or its tools.

NOSU: We are stuck right now with no students and unsure if OU (OKL) is coming to digitize this summer due to COVID-19.

NY: Our work has continued uninterrupted during the quarantine period, although of course we can't do any work that involves touching the specimens themselves, because we are not allowed to go to the herbarium. Fortunately for TORCH, most of the specimens have already been imaged, so transcription work has to be the focus for now.

OKL: Nothing new to report.

OKLA: Camera purchased. Still awaiting delivery of imaging box.

TAES: We have been at a standstill with progress since the beginning of March because of COVID-19. We plan to begin digitization using isolated workers, and will implement a remote transcription workflow so that our undergraduate students can continue to work.

TAMUCC: Just like in my February 2020 report, we have not yet done anything regarding the project as we only just received the last set of equipment that we ordered for the project. The actual digitization was to start in February/March 2020, but was interrupted due to the COVID-19 pandemic.

TEX/LL: We lost our student workers to the COVID shutdown on 13 March and have been working from home since 23 March. Thus, there has been no new progress from TEX/LL and its data providers since mid-March. For activities of our student workers since the shutdown, please see the BRIT quarterly report.

TTC: We were awaiting the delivery of a new custom imaging station from BRIT in March 2020, before the COVID-19 shutdown prevented delivery of this system. As a result, we have been unable to proceed on imaging and label transcription.

Georeferencing has been productive even after the COVID-19 shutdown, as our student workers are able to edit records directly in the TORCH portal.

UTEP: We had volunteers lined up, but will need to re-assess if anyone will still be available after the UTEP closure. I have one student who intends to continue the project for credit hours.

• Number of records available in iDigBio portal (cumulative):

BAYLU = 0
BRIT = 69,638 (iDigBio is behind; hasn't changed since Feb. 3rd, 2020)
HUH = 30,125 (iDigBio harvest of HUH records from IPT is behind. We have alerted them multiple times about this).
KANU = 21,069 (We upload a new instance of our database to GBIF & iDigBio at the beginning of each month. All fully-transcribed (21,069) from OK and TX will be available the first week of May).
MO = 0
NOSU = 0
NY =~25,000 (It looks as though there are about 25,000 plant specimen images from

Texas and Oklahoma from NY live on iDigBio. I do not know when iDigBio last harvested our data using our IPT instance.)
OKL = 0
OKLA = 0
TAES = 0
TAMUCC= 0
TEX/LL = 31,846 (so far, only HPC and TLU)
TTC = 0
UTEP = 0

Total number of records in iDigBio Portal = 177,678

• Number of records available in TORCH Symbiota portal (cumulative):

BAYLU = 0
BRIT = 92,163 (Note: Another 20,000 are being worked on by TEX students in the Symbiota Sandbox portal; these records will be imported into the TORCH Portal once they are done).
HUH = 35,260
KANU = 21,084 (Working with Diego Barroso and Andy Bentley (KU Specify Team), we were able to push ~21,000 KANU records from OK & TX to the TORCH portal in March.)
MO = 0
NOSU = 0
NY = 0 (We don't appear to have an entry on the TORCH Symbiota portal – maybe I missed the call to do this. I am happy to add us to the project, if you send me the instructions on how to do it (it's been awhile!). Also, we need a discussion with someone from TORCH about how to link to our IPT to obtain our data – or maybe better to get from iDigBio? We probably need to discuss this.)
OKL = 153
OKLA = 0 (TORCH Data Manager Clay Barrett is preparing OKLA records in OVPD/OBIS for ingestion into Symbiota and iDigBio. This should be completed by the next quarterly report).

TAES = 0
TAMUCC = 0
TEX/LL= 259,274 (These are data records, of which 152,151 have images; this includes TEX/LL + data providers)
TTC = 21,445
UTEP = 0

Total number of records in TORCH Portal = 429,379

Share and Identify Best Practices and Standards (including Lessons Learned):
BAYLU: Nothing new to report.

BRIT: Nothing new to report.

HUH: Despite office closures around the country, the current HUH workflow has prepared us to maintain digitization activities while staff work remotely from home. The HUH digitization workflow is phased in several steps: i) imaging in batches, ii) minimal data capture using the HUH transcription web application, iii) full data capture using same, iv) georeferencing using the HUH transcription web application in conjunction with Geo-

Locate. While we are not able to capture new images during office closures, we have accumulated sufficient records for transcription and georeferencing to support remote staff activities for months.

KANU: Hindsight being 20/20, if we knew access to the collection was going to be restricted for some period of time, we would have spent more time imaging specimens that were not databased so we could create more skeletal records remotely.

MO: Nothing new to report.

NOSU: Nothing new to report.

NY: Nothing new to report.

OKL: Digitize before databasing and georeferencing, so that you have images to work from when campus shuts down. We currently have some more specimens for Leann Monaghan to database and georereference, but it is not clear if we have enough to last her until the time the university reopens for research.

OKLA: Locating and segregating Texas specimens filed among general collections seems to have been worthwhile. It permitted student workers to become familiar with the project, herbarium specimens, and collection data while we were waiting for the imaging equipment to arrive. This will also greatly expedite workflow later.

TAES: Nothing new to report.

TAMUCC: Just like above, no work has been done due to the COVID-19 outbreak. We have acquired the equipment for the project and will start once the work reopens.

TEX/LL: Nothing new to report.

TCC: For georeferencing, we have discovered it is effective for a student to work with all specimens located in a county before moving on to a different county. Students are editing all samples from a county before moving on to a new county. This has been successful as it allows students to get used to the geography of an area and increases their efficiency.

UTEP: Nothing new to report.

Identify Gaps in Digitization Areas and Technology:
BAYLU: Access to the Herbarium has been limited due to the ongoing COVID-19 situation. The photographs we have acquired need to be uploaded to Symbiota for transcription; we need guidance and facilitation by BRIT.

BRIT: The portion of the workflow that involves image processing (renaming, editing, and upload) requires on-site presence to keep it moving; and, since COVID-19 restrictions do not allow this, this portion of the work has suffered.

HUH: We are still developing our georeferencing workflow, which is expected to combine the Geo-Locate collaborative interface and Geo-Locate into our existing HUH Transcription App. The HUH has a historical collection and we are concerned that our need for historical maps is not well-served by Geo-Locate, which links out to historical maps, but does not integrate historical map overlays that would facilitate fast and efficient plotting of historical

locality data.

KANU: Unable to make any progress imaging specimens due to inability to access specimens; we can do some databasing remotely, especially quality control work, but that work has also slowed considerably in the last 30 days, and the number of databased specimens that are not georeferenced specimens is now very small.

There is a good chance that some of the hourly students we hired to assist with the project will leave university employment as soon as the semester ends (May 16) if they are unable to work any hours this summer, which means they will have to have some access to specimens by the middle of the next month.

MO: Nothing new to report.

NOSU: Nothing new to report.

NY: Nothing to add.

OKL: Nothing new to report.

OKLA: Still awaiting delivery of imaging box. It is unclear how many student workers will be available if the equipment is not available early in the summer.

TAES: We have recently acquired all the necessary tech.

TAMUCC: The global lockdown due to the coronavirus outbreak halted the progress of the project.

TEX/LL: Nothing new to report.

TCC: From March 18 – April 30 our University was in a Phase IV of response to COVID-19, preventing all non-essential research activities, and we are unable to work at the University or Herbarium.
Until we receive a new imaging station from BRIT and are able to return to on-campus work in the Herbarium, we will be unable to proceed with imaging and label transcription.

UTEP: The biggest impediment now is the closure due to the pandemic. When UTEP reopens, regaining student volunteers and participation in the project will be a challenge to overcome.

Share and Identify Opportunities to Enhance Training Efforts:
BAYLU: Developed imaging protocol and trained student workers and technician on photography.

BRIT:

* Trained University of Oklahoma (OKL) representatives (Abby Moore, Amy Buthod, Leann Monaghan) in Symbiota use and functionality (February 26th, 2020)

* Protocols for transcription in Symbiota were updated at BRIT (week of March 25th) in anticipation of April training sessions

* Trained students from Rice University in basic Symbiota use / data entry (March 25th)

* Trained 27 TEX-LL students on the use of the Symbiota platform for transcribing herbarium specimens, April 1st & 3rd, 2020. TORCH TCN staff at BRIT responded to questions and guided students, with the assistance of the TEX-LL Curator (George Yatskievych) and the TEX-LL Collection Manager (Amber Horning), both during the webinar and via email since then.

* TORCH Project Manager Diego Barroso provided a Zoom session for BRIT TORCH TCN staff, detailing advanced Symbiota functions and use of the Symbiota back-end (April 8th, 2020), with assistance of Collection Manager Tiana Rehman and Technological Innovator Jason Best.

* Trained 35 Volunteers on the Notes from Nature platform during WeDigBio Lite (wedigbio.org), over the course of two Zoom-based webinars, Sat. and Sun., April 17th - 18th, 2020. Encouraged the transcription of TORCH and other TCN specimens.

* #TranscriptionThursdays launched April 23rd. Guided 2 webinars for a total of 45 members of the public, to contribute to Citizen Science transcription efforts in Notes from Nature.

* Provided digitization training to five new BRIT volunteers in the herbarium, in the tasks of imaging and transcribing specimens.

* Herbarium staff have provided digitization training for high school student intern at BRIT, Technovator Jason Best has trained him in the construction of his light-box designs and he has been completing this activity.

AT BRIT & OKLA: TORCH Project Manager, Data Manager, and Technological Innovator held multiple online meetings and discussions, in order to advance the Project (planning, and innovations), on the following topics:

* OpenRefine, Data Cleaning, & Name Resolution Services (March 20th and April 8th)

* Image Processing, Image hosting and serving, and ingestion of images into TORCH Symbiota Portal (March 24th)

* Discussion with Ed Gilbert on Taxonomic Thesaurus used in Symbiota,Taxonomic cleaning tools, and image mapping (March 25th)

* Using BioSpex to stage subsets of subjects for Notes from Nature (April 7th)

* Symbiota advanced functions and back-end (April 8th)

*With Michael Denslow, creation of Projects & Expeditions in Notes from Nature (April 9th)

* With Tiana Rehman, BRIT Collections Manager, launching a new project and Expedition(s) in Notes from Nature (April 15th)

* Image segmentation, OCR, and parsing of data using Google Collab & TensorFlow, and Python (work being developed by Jason Best and Clay Barrett) (April 29th)

HUH: Nothing new to report.

KANU: We have provided a “georeferencing best practices” summary to one of our databasers (LeeAnn Bennett) so she can learn more about the georeferencing process.

MO: Nothing new to report.

NOSU: Nothing new to report.

NY: Nothing to add.

OKL: Online training of OKL staff on the use of the Symbiota portal by Diego Barroso.

OKLA: See multiple online meetings of Clay Barrett with Diego Barroso and Jason Best at BRIT, above.

TAES: Nothing new to report.

TAMUCC: None yet, but there are plans to have undergraduate student participation and training.

TEX/LL: Nothing new to report.

TCC: We have a weekly herbarium meeting where we discuss best practices. This semester, we focused on training students to mount specimens and record specimen data from collector journals.

UTEP: Nothing new to report.

Share and Identify Collaborations with other TCNs, Institutions, and Organizations:
BAYLU: Nothing new to report.

BRIT:

* Created online presence for OKL on TORCH portal (February 18th, 2020)

* Created online presence for SAT on TORCH portal (March 9th, 2020)

* Created online presence for TAES on TORCH portal (March 17th, 2020)

* Launched “Flora of Texas and Oklahoma” Project on Notes from Nature, including 2 TORCH Expeditions, plus a third one in preparation (April 17th – 30th).

* Held first TORCH TCN Executive Committee Meeting (April 28th, 2020), to help steer the project going forward. All P.I.’s were in attendance, and it was determined that further Executive Committee meetings will be held periodically as necessary.

* TEX students have transcribed ~3804 specimens so far (April 30th, 2020), as part of the ongoing collaboration with BRIT. These transcriptions are actively being reviewed by Amber Horning, Collection Manager at TEX.

* See also dissemination with Texas Master Naturalists below.

HUH: Nothing new to report.

KANU: Nothing new to report.

MO: Nothing new to report.

NOSU: Nothing new to report.

NY: We collaborate with the other TCNs we have been involved in as described above under “Other Digitization.”

OKL: Nothing new to report.

OKLA: D.M. Clay Barrett is collaborating with Jason Best at BRIT in order to process images (image segmentation for accession stamp detection, followed by OCR and parsing of the data obtained), as well as in the preparation of the next TORCH Expedition on Notes from Nature.

TAES: Nothing new to report.

TAMUCC: None yet.

TEX/LL: Current data entry at PAUH (data provider) is being funded under a grant from the CONTEX program of University of Texas/CONABIO, to digitize resources on Tamaulipan thornscrub in U.S. and Mexico. Rest of PAUH’s Texas/Oklahoma holdings will be digitized through the TORCH project. The collaboration with BRIT transcription of their records is ongoing.

TCC: Assisted with the addition of the Angelo State University herbarium (SAT) to the TORCH portal, communicating with SAT Collections Manager Diana Kresja.

UTEP: Nothing new to report.

Share and Identify Opportunities and Strategies for Sustainability:
BAYLU: Nothing new to report.

BRIT: The COVID-19 sheltering requirements have resulted in all team members improving their digital communication, and our project staff have begun to use, or continued their reliance on, free and paid services to accomplish this, including the following services: Slack, Click-Up, Microsoft Teams, DropBox, Google Drive, and Zoom.

HUH: Nothing new to report.

KANU: A lot depends on when we’ll be able to regain access to the collection. If that happens by mid-May, there is a reasonable chance we’ll be able to complete our work by the end of August. However, there is a real possibility that students will not be allowed to return to work as quickly as staff members. If the university implements a phased return to campus, we are discussing ways that staff with access to the collection can engage off-site student workers. We think that might be accomplished by imaging batches of specimens that aren’t databased and having students create skeletal records based on the images or, with appropriate safety measures, making actual specimens available to be worked on

remotely.

MO: Nothing new to report.

NOSU: Nothing new to report.

NY: Nothing to add.

OKL: Nothing new to report.

OKLA: OK and TX specimens are now segregated in state-only folders, which will facilitate addition of new records after the life of the project.

TAES: Nothing new to report.

TAMUCC: Faculty and students to grow the collection through field trips or class assignments in Plant Taxonomy course by collecting specimens for the herbarium and digitizing the collections.

TEX/LL: Nothing new to report.

TCC: Nothing new to report.

UTEP: Nothing new to report.

Other Progress not listed above (anything else to share):
BAYLU: Nothing new to report.

BRIT: Company policies during COVID-19 impacted work on the TORCH TCN, as all our full-time staff were given 4 weeks of sick leave. This meant that our only full-time TORCH TCN digitization staff member was not working during this time, and their individual productivity will have decreased this quarter.

HUH: Nothing new to report.

KANU: Nothing new to report.

MO: Nothing new to report.

NOSU: Nothing new to report.

NY: Nothing to add.

OKL: We will likely be able to make good progress on digitizing our own specimens once the university reopens for research, so this should not delay our progress that much. However, it is unclear when we will be able to travel to other herbaria to pick up their specimens for digitizing. This delay will set us back somewhat, since it was mainly planned for the summers. However, it may be possible to work with some of the closer herbaria during the academic year instead.

OKLA: Nothing new to report.

TAES: Nothing new to report.

TAMUCC: None yet, as the project has yet to fully take off.

TEX/LL: Participated in one TORCH Executive Committee online meeting and one meeting with Texas Advanced Computing Center (TACC) about file-hosting.

TCC: Nothing new to report.

UTEP: Nothing new to report.

Share and Identify Education and Outreach (E&O) Activities:
Methods of disseminating results to communities of interest (presentations, lectures, etc.):
BAYLU: Nothing new to report.

BRIT:

With Texas Master Naturalists:

* 21 April (58 attendees): Provided Introductory Botany training via Zoom to the only chapter (North Texas Chapter) continuing with its Spring training of interns. During this class, the TORCH TCN was presented, and the call for citizen scientists was put out to help with TORCH transcriptions in NfN.

* 27 April (38 attendees): Indian Trail Master Naturalist Chapter. Presented the importance of herbarium vouchers and understanding the gaps in our knowledge of the Texas flora, including the TCN and the data that would be available. The call for citizen scientists was put out to help with TORCH transcriptions in NfN.

* Blackland Prairie Chapter attended a ‘curation day’ at BRIT to complete pre-digitization steps for a recently aquired collection that had been gifted to BRIT, of the Collin County College Herbarium. Material is primarily from Texas and Oklahoma, and the group intends to return to complete the project, including the digitization of these specimens.
* GM Financial: Volunteer group from their international loans division volunteered with us to locate and prep Texas and Oklahoma specimens from the collection (and transcribe other TCN specimens online)
HUH: Nothing new to report.

KANU: Nothing new to report.

MO: Nothing new to report.

NOSU: Nothing new to report.

NY: Nothing new to report.

OKL: Nothing new to report.

OKLA: Nothing new to report.

TAES: Nothing new to report.

TAMUCC: Presentations, news release, conference presentation, etc.

TEX/LL: Gave one lecture to Freshman Research Initiative class (32 students) and subsequently led an exercise to give students experience with label transcription and image creation. Also gave two programs on herbaria to local garden clubs, that included slides on the TORCH project. Also mentioned the TORCH project at five other general tours of herbarium.

TCC: TCC Director Matt Johnson gave a presentation on the Herbarium to the Texas Tech University Beta Beta Beta Biology Honors Society.

UTEP: A student poster presentation was given at the UTEP Student COURI Symposium (virtual: April 29, 2020), by undergraduate student Justin Von Seebach, who helped set up our imaging workflow and presented on the TORCH project.

Other Education and Outreach activities:
BAYLU: Nothing new to report.

BRIT: See above.

HUH: Nothing new to report.

KANU: Nothing new to report.

MO: Collection and Project-Related Tours and Public Events
TOTAL: 4 Events, 353 people, as follows:

25 February 2020
World Trade Center, British Delegation
13 people

28 February 2020
Missouri Department of Natural Resources
Cape Girardeau Nature Center
6 people

5 March 2020
Orchid Nights (Garden Members, general public)
317 people

6 March 2020
Poplar Bluff, Missouri, Gardeners Group
17 people

NOSU: Nothing new to report.

NY: McKenna Coyle, our TORCH project manager published this story map in The Handlens, which is the NYBG Herbarium's public outreach outlet. It is a road trip to "see" wildflowers in the southern US, including the TORCH area: Road Trip: Southern Wildflowers by McKenna Coyle, published 23 April 2020 http://sweetgum.nybg.org/science/the-hand-lens/explore/narratives-details/?irn=7471

OKL: Nothing new to report.

OKLA: Nothing new to report.

TAES: Nothing new to report.

TAMUCC: Nothing new to report.

TEX/LL: Discussed the TORCH digitization efforts with staff at the Witte Museum in San Antonio, which holds about 12,000 herbarium specimens.

TCC: Nothing new to report.

UTEP: Nothing new to report.

Google Analytics

Other Progress (that doesn't fit into the above categories):
Products generated (publications, conference presentations, technologies/techniques, websites, etc.):
BAYLU: Nothing new to report.

BRIT:
Webpage for all remote digitization activities, including those of the TORCH TCN: www.brit.org/armchairbotanist

"Flora of Texas and Oklahoma" Project on Notes from Nature: https://www.zooniverse.org/projects/md68135/notes-from-nature-flora-of-texas-and-oklahoma

HUH: Nothing new to report.

KANU: Nothing new to report.

MO: Nothing new to report.

NOSU: Nothing new to report.

NY: See story map by McKenna Coyle above.

OKL: Nothing new to report.

OKLA: Nothing new to report.

TAES: Nothing new to report.

TAMUCC: We have two conference presentations that are linked directly or indirectly to the digitization project as follows:

Rodriguez, J. & Daru, B.H. (2020) Mismatches and congruencies in plant sampling biases between observations and vouchered specimens. 46th conference of the South African Association of Botanists, Qwaqwa, Free State, South Africa (January 2020).

Snyder, L. & Daru, B.H. (2019) How digitization efforts at small local herbaria add to the scientific community and predicting the impact of the Ruth O'Brien Herbarium. Global Change Symposium, Texas A&M University-Corpus Christi, December 2019.

TEX/LL: Nothing new to report.

TCC: Nothing new to report.

UTEP: Nothing new to report.

Participants (especially those who have newly joined the project):
BAYLU: Nothing new to report.

BRIT: Ashley Bordelon, Digitization Technician (abordelon@brit.org); Demetrio Rivas, Cristo Rey high school student who has been trained in digitization and who has been helping build lightboxes under the guidance of Jason Best. Also, there are 28 students at TEX/LL actively working to help transcribe BRIT specimens in Symbiota, as part of the ongoing BRIT-TEX collaboration.

HUH: Nothing new to report.

KANU: We hired four new hourly students in February and were just beginning to get them trained in databasing (they all were helping find specimens in the cases) when the campus shut-down occurred:

* Zoe Chan – hourly student
* Keta Ewing – hourly student
* Tanishka Shah – hourly student
* Megan Wetherington – hourly student

Project participants working on the project during the previous reporting period and continuing are:
* Craig Freeman – PI
* LeeAnn Bennett – databasing
* Maeve Hilgers – hourly student

MO: Although not yet implemented, I believe the most difficult aspect of the entire project will be locating and contracting enough student workers or employees to actually do the work. Recruiting will obviously be a top priority, if and when we return to some kind of "normalcy" from this pandemic.

NOSU: Nothing new to report.

NY: McKenna Coyle (started in November 2019).

OKL: Abby Moore, Amy Buthod, Leann Monaghan (newly joined), Sam Basave (graduating).

OKLA: Clay Barrett, TORCH Data Manager, was hired on March 9th, 2020; he is able to effectively work remotely during the campus shutdown. Joseph Hogan, Alyssa Regier, and Zachary Shiever (undergraduate assistants, supported by the TORCH TCN) continued participating.

TAES: Nothing new to report.

TAMUCC: None yet.

TEX/LL:
* Saint Edward's University Herbarium, Austin, TX (no acronym yet)
* Fort Worth Nature Center, Fort Worth, TX (FWNC)

TCC: 3 Graduate Assistants (Yanni Chen, Haoran Xu, Zhiyuan Li), 5 Undergraduate Assistants (Jennifer Mendez, Hayden Mathews, Chase Bergeron, Cassidy Coker, Madeline Slimp).

UTEP: Justin Von Seebach, UTEP undergrad; Alexa Moreno, UTEP undergrad; Alexandra Bernard-Weiner, UTEP MS Student; Vicky (Mingna) Zhuang, UTEP Collections Manager. Don't know how many of these students will remain after the shutdown.

Questions/comments:
NOTE: The iDigBio TORCH TCN Digitization Workshop, which was scheduled to be held at BRIT in Fort Worth, TX, over the weekend of March 28th and 29th, had to be cancelled due to the coronavirus outbreak. This workshop had a confirmed attendee list of over 50 participants, and would have included talks on all topics of the digitization workflow (specimen staging, imaging, transcription, georeferencing, data curation), as well as talks on the inner workings of the Symbiota portal, on coordinating volunteer and outreach groups, and other relevant topics. Hands-on demo sessions had also been planned for the attendees, as well as meetings for project steering and reporting. The cancellation of this workshop had a great impact on our project, but we have been able to pivot to online meetings and webinars for many of the planned sessions. Nevertheless, we still hope we will be able to hold a TORCH TCN Workshop or Meeting sometime in the near future, especially to further the digitization efforts at the institutions who need it most.

BAYLU: We have 2,000 photos waiting to be uploaded to some portal that will allow our home-bound technicians to begin transcription. We need instruction on where and how to a) upload these, and b) link these into Symbiota.

NOSU: Sorry. I've got nothing. Pandemics make this work hard.

NY: We need to talk about getting our data on the TORCH website, whenever you are ready to do this.

OKLA: I suggest at least quarterly meetings of the Executive Team either before or after the quarterly reports are due. I'm not sure which would be most useful.

TAMUCC: None yet.

Report provided by Sam Houston State University (SHST):
"We don't have much to report. Dr. Justin Williams was going to hire some student workers, but we are not allowing students into the university labs now. We are temporarily on hold until the University opens up again in the Summer."

Attachment 1
TORCH-TCN-compiled-report-Q2-FINAL-2020-05-04.pdf

Attachment 2

Source URL: https://www.idigbio.org/node/564/submission/1624

TORCH TCN — Quarterly Report

February 1st, 2020 - April 30th, 2020

Assembled by BRIT on May 5th, 2020, for May 6th IAC meeting

Digitization TCN: Collaborative: American Crossroads: Digitizing the Vascular Flora of the South-Central United States (TORCH TCN)

Reporting Institutions:

BAYLU – Baylor University

BRIT – Botanical Research Institute of Texas

HUH – Harvard University

KANU – University of Kansas

MO – Missouri Botanical Garden

NOSU – Northeastern State University

NY – New York Botanical Garden

OKL – University of Oklahoma

OKLA – Oklahoma State University

TAES – Texas A&M University-College Station

TAMUCC – Texas A&M University-Corpus Christi

TEX/LL – University of Texas at Austin

TTC – Texas Tech University

UTEP – University of Texas at El Paso

Note: (for SHST – Sam Houston State University, see paragraph at the end of this Quarterly Report)

Progress in Digitization Efforts:

- Number of skeletal records created:

  BAYLU = 0
  BRIT = 0
  HUH = 42
  KANU = 205 (for seed packets in the collection which probably won't be imaged, but will be databased. Nearly all seed specimen records have a corresponding pressed reference specimen in the collection.)
  MO = 0
  NOSU = 0
  NY = 53

OKL = 0
OKLA = 0
TAES = 0
TAMUCC = 0
TEX/LL = 0
TTC = 0
UTEP = 0

Total skeletal records created this quarter: 300

- Number of fully-transcribed records created:

BAYLU = 0
BRIT = 5,963 (includes 3,804 by TEX students & 1,500 from a NfN Expedition)
HUH = 10,082
KANU = 1,656 (increases total of fully-transcribed OK & TX records to 21,395)
MO = 26
NOSU = 0
NY = 24,357
OKL = 153
OKLA = 300
TAES = 0
TAMUCC = 0
TEX/LL = 1,801 (See “Other Digitization Efforts” below for cumulative totals and data provider contributions; see also collaboration with BRIT)
TTC = 0
UTEP = 0

Total fully-transcribed records created this quarter: 44,338

- Number of specimens imaged:

BAYLU = 2,000
BRIT = 5,165
HUH = 2,644
KANU = 0 (previous estimate of total had been ca. 3,000 from OK & TX, but this is now revised up to 5,163, of which 2,993 are from OK and 2,170 are from TX)
MO = 157
NOSU = 0
NY = 0
OKL = 6,467
OKLA = 0
TAES = 0
TAMUCC = 0
TEX/LL = 0
TTC = 0

UTEP = 44 (All 44 specimens are from Texas. Imaging has commenced, but due to UTEP regulations for COVID-19, we have been unable to access facilities since March.)

Total number of specimens imaged this quarter: 16,477

- Number of specimens georeferenced:

BAYLU = 0
BRIT = 0
HUH = 0
KANU = 1,792 (total georeferenced records from OK & TX = 21,069)
MO = 596
NOSU = 0
NY = 17,978 (Texas – 16,183; Oklahoma – 1,795)
OKL = 107
OKLA = 0
TAES = 0
TAMUCC = 0
TEX/LL = 0 (We have not yet begun tracking total number of geo-referenced specimens)
TTC = 2,187
UTEP = 50 (All 50 newly-georeferenced specimens are from Texas)

Total number of specimens georeferenced this quarter: 22,710

- Other digitization or pre-digitization efforts:

BAYLU: Barcodes have been attached to over 60,000 specimens in preparation for imaging.

BRIT:

* Implementing an automated protocol for locating Oklahoma specimens within the BRIT-SMU collection to digitize only this small portion of those folders. Training volunteers in this process.

* Implementing a strategy for identifying TORCH TCN specimens within folders of North American collections for another subset of our specimens (VDB). Training volunteers in this process.

* Hosting weekly #TranscriptionThursdays webinars to encourage citizen scientists to use NotesFromNature (NfN) to transcribe TORCH TCN specimens.

* Began a collaboration with TEX that is helping both of our institutions, keeping 28 TEX students employed through the COVID-19 shutdown, who are helping BRIT by transcribing specimens in the Symbiota Sandbox portal (April 2020). As of April 30th, a total of 3,800 records have been transcribed by TEX students.

* Created a new project in Notes from Nature ("Flora of Texas and Oklahoma") for use by the TORCH TCN (see https://www.zooniverse.org/projects/md68135/notes-from-nature-flora-of-texas-and-oklahoma). The first expedition was launched April 17th, the second was launched April 30th, and the third Expedition is in preparation. Currently, this is all BRIT material – but with plans to add subjects from other institutions in the near future – and with a total participation of 270 volunteers so far.

* Hired a new Digitization Technician (mid-April) to assist with specimen transcription and georeferencing.

* Cleaning legacy datasets for upload into the TORCH portal (some of these were uploaded in this quarter).

* TORCH TCN staff spent significant amounts of time on coordinating image processing and upload to TACC servers (in collaboration with Tomislav Urban and Chris Jordan at UT-Austin), particularly for legacy images.

* Testing for two new imaging set-ups is underway (Nikon DSLRs-Ortery lightboxes-capture/processing software), but these have not yet been put into production. One of the two new units is intended to image specimens sent to BRIT by providers, and the second will be an itinerant setup to be sent out for on-site imaging at provider herbaria.

* Provider herbaria have been contacted, and access to collections was being scheduled when COVID-19 closures went into effect.

* A new BRIT exhibit was created showcasing the BRIT specimens of Texas and Oklahoma of milkweeds and their relationship with Monarchs. This exhibit showcases the TORCH TCN and the Endless Forms TCN, both of which BRIT participates in.

HUH: Currently developing our gereferencing solution: integrating Geo-Locate into our existing applications.

KANU: All OK and TX specimens in Asteraceae, Fabaceae, Poaceae, Cyperaceae, and pteridophytes have been databased and identified in the cases with drop tags for imaging; most also have been georeferenced. Many other genera and families have been identified with drop tags in cases in preparation for databasing and imaging. By our most recent estimate, we have identified (with drop tags) all OK and TX specimens in >47% of our cases (166 out of 350). We know that is an underestimate because some families were completely databased for other projects, but hourly students have not gone through those cases yet to find the OK and TX specimens.

MO: Nothing new to report.

NOSU: Nothing new to report.

NY: State Spotter – The way we digitize on all TCN projects for maximum efficiency is that we digitize all specimens in the US folders regardless of state, and then we focus on completing

records for the geographic area that is the focus of the TCN. Because TORCH is our 6th TCN to follow this procedure, we have essentially already imaged all TORCH specimens, so the trick is to find those among previously imaged specimens that are in the TORCH area. The first step in doing this is what we call State Spotter, which is a pass through the data where we only enter the state. Then, for the TORCH project, we will focus on transcribing only those for the TORCH area. During this period, state values were entered for 7,693 by McKenna Coyle, of which about 15% are in the TORCH region. In total, all NYBG staff and crowd sourcers entered the state name for about 78,000 records, so collectively we probably added the name of the state to about 12,000 records in the TORCH region. These are now in the queue to be fully transcribed.

OKL: Nothing new to report.

OKLA: The remaining 75% of Texas specimens has been located and segregated from other non-Oklahoma collections. OKLA has approximately 2000 images (about 400 fully transcribed) that are queued for ingesting into Symbiota and iDigBio.

TAES: We have acquired a complete imaging station with all requisite parts. We have hired ~5 undergraduate students to engage in the digitization, transcription, and georeferencing, and are working towards establishing a volunteer work force.

TAMUCC: Nothing new to report.

TEX/LL: Cumulative totals for TEX/LL and data providers:

Herbarium	Number Databased	Number Imaged
TEX/LL	228,074	127,938
SRSC	20,662	20,648
HPC	22,883	3,765
TLU	6,277	27
PAUH	2,022	0
FWNC	1,981	1,981
[no reports from other data providers]		
TOTALS:	**281,899**	**154,359**

TTC: Began mounting specimens from Guadalupe Mountains National Park collected in 1973-1977. Students will use the scanned collection notes to create labels for these specimens, and then they will be imaged, transcribed, and georeferenced.

UTEP: Imaging station was set-up and optimization was completed. Bar-coding strategy alongside imaging was implemented. We've developed a strategy moving forward.

- Comments about the digitization process:

BAYLU: Complete digitization (photography) equipment has been set-up, and technicians have been trained. Preliminary photos have been acquired.

BRIT: Nothing new to report.

HUH: Digitization continues despite office closures due to COVID-19. Staff are working remotely and focusing on completing transcription and will soon be georeferencing.

KANU: Due to the COVID-19 pandemic, the KU campus has been shut down since the third week of March. Except for essential staff, staff and students are prohibited from entering buildings until the campus reopens. We initially tried to have our hourly students assist with the digitization project remotely, but that proved to be impossible due to access issues to database records. We continue to explore ways that they might be able to contribute skeletal records to the effort.

MO: The two key parts needed to make any initial progress on this project are ordering and installing the components for the imaging work station and securing student workers and/or employees to do the work.

In late February we were just at the point of ordering the equipment for the imaging station, but it was becoming clear that cities and states were going to shut down, so we did not follow through on the ordering at that time.

At that same time, we were looking to recruit and contract new student workers, but that also had to be suspended because of uncertainties within the local universities and the future circumstances of potential student workers.

We had also advertised an employee position to help with the management of the project, and were beginning to receive resumes, but did not get to the point of actually scheduling interviews.

The COVID-19 pandemic exploded at a crucial point in implementing this project and has severely curtailed our ability to conduct the proposed work. Like most museum collections, the pandemic resulted in the closing of our collections to all on-site activities and forcing staff and students to only work on what might be accessible electronically from home.

Since we were, in reality, just beginning the project, we had not accumulated much in the way of "reserve" work that could be processed externally without access to the collections. This basically limited us to georeferencing existing electronic data records. We were also constrained by the need to use our Tropicos database (http://www.tropicos.org) as the project production platform, which is not compatible with Symbiota or its tools.

NOSU: We are stuck right now with no students and unsure if OU (OKL) is coming to digitize this summer due to COVID-19.

NY: Our work has continued uninterrupted during the quarantine period, although of course we can’t do any work that involves touching the specimens themselves, because we are not allowed to go to the herbarium. Fortunately for TORCH, most of the specimens have already been imaged, so transcription work has to be the focus for now.

OKL: Nothing new to report.

OKLA: Camera purchased. Still awaiting delivery of imaging box.

TAES: We have been at a standstill with progress since the beginning of March because of COVID-19. We plan to begin digitization using isolated workers, and will implement a remote transcription workflow so that our undergraduate students can continue to work.

TAMUCC: Just like in my February 2020 report, we have not yet done anything regarding the project as we only just received the last set of equipment that we ordered for the project. The actual digitization was to start in February/March 2020, but was interrupted due to the COVID-19 pandemic.

TEX/LL: We lost our student workers to the COVID shutdown on 13 March and have been working from home since 23 March. Thus, there has been no new progress from TEX/LL and its data providers since mid-March. For activities of our student workers since the shutdown, please see the BRIT quarterly report.

TTC: We were awaiting the delivery of a new custom imaging station from BRIT in March 2020, before the COVID-19 shutdown prevented delivery of this system. As a result, we have been unable to proceed on imaging and label transcription.

Georeferencing has been productive even after the COVID-19 shutdown, as our student workers are able to edit records directly in the TORCH portal.

UTEP: We had volunteers lined up, but will need to re-assess if anyone will still be available after the UTEP closure. I have one student who intends to continue the project for credit hours.

- Number of records available in iDigBio portal (cumulative):

  BAYLU = 0
  BRIT = 69,638 (iDigBio is behind; hasn't changed since Feb. 3rd, 2020)
  HUH = 30,125 (iDigBio harvest of HUH records from IPT is behind. We have alerted them multiple times about this).
  KANU = 21,069 (We upload a new instance of our database to GBIF & iDigBio at the beginning of each month. All fully-transcribed (21,069) from OK and TX will be available the first week of May).
  MO = 0
  NOSU = 0
  NY =~25,000 (It looks as though there are about 25,000 plant specimen images from Texas and Oklahoma from NY live on iDigBio. I do not know when iDigBio last harvested our data using our IPT instance.)
  OKL = 0
  OKLA = 0
  TAES = 0
  TAMUCC= 0
  TEX/LL = 31,846 (so far, only HPC and TLU)
  TTC = 0

UTEP = 0

Total number of records in iDigBio Portal = 177,678

- Number of records available in TORCH Symbiota portal (cumulative):

BAYLU = 0
BRIT = 92,163 (Note: Another 20,000 are being worked on by TEX students in the Symbiota Sandbox portal; these records will be imported into the TORCH Portal once they are done).
HUH = 35,260
KANU = 21,084 (Working with Diego Barroso and Andy Bentley (KU Specify Team), we were able to push ~21,000 KANU records from OK & TX to the TORCH portal in March.)
MO = 0
NOSU = 0
NY = 0 (We don't appear to have an entry on the TORCH Symbiota portal – maybe I missed the call to do this. I am happy to add us to the project, if you send me the instructions on how to do it (it's been awhile!). Also, we need a discussion with someone from TORCH about how to link to our IPT to obtain our data – or maybe better to get from iDigBio? We probably need to discuss this.)
OKL = 153
OKLA = 0 (TORCH Data Manager Clay Barrett is preparing OKLA records in OVPD/OBIS for ingestion into Symbiota and iDigBio. This should be completed by the next quarterly report).

TAES = 0
TAMUCC = 0
TEX/LL= 259,274 (These are data records, of which 152,151 have images; this includes TEX/LL + data providers)
TTC = 21,445
UTEP = 0

Total number of records in TORCH Portal = 429,379

<u>Best Practices and Standards (Lessons Learned)</u>:

BAYLU: Nothing new to report.

BRIT: Nothing new to report.

HUH: Despite office closures around the country, the current HUH workflow has prepared us to maintain digitization activities while staff work remotely from home. The HUH digitization workflow is phased in several steps: i) imaging in batches, ii) minimal data capture using the HUH transcription web application, iii) full data capture using same, iv) georeferencing using the

HUH transcription web application in conjunction with Geo-Locate. While we are not able to capture new images during office closures, we have accumulated sufficient records for transcription and georeferencing to support remote staff activities for months.

KANU: Hindsight being 20/20, if we knew access to the collection was going to be restricted for some period of time, we would have spent more time imaging specimens that were not databased so we could create more skeletal records remotely.

MO: Nothing new to report.

NOSU: Nothing new to report.

NY: Nothing new to report.

OKL: Digitize before databasing and georeferencing, so that you have images to work from when campus shuts down. We currently have some more specimens for Leann Monaghan to database and georereference, but it is not clear if we have enough to last her until the time the university reopens for research.

OKLA: Locating and segregating Texas specimens filed among general collections seems to have been worthwhile. It permitted student workers to become familiar with the project, herbarium specimens, and collection data while we were waiting for the imaging equipment to arrive. This will also greatly expedite workflow later.

TAES: Nothing new to report.

TAMUCC: Just like above, no work has been done due to the COVID-19 outbreak. We have acquired the equipment for the project and will start once the work reopens.

TEX/LL: Nothing new to report.

TCC: For georeferencing, we have discovered it is effective for a student to work with all specimens located in a county before moving on to a different county. Students are editing all samples from a county before moving on to a new county. This has been successful as it allows students to get used to the geography of an area and increases their efficiency.

UTEP: Nothing new to report.

Identify Gaps in Digitization Areas and Technology (issues preventing progress):

BAYLU: Access to the Herbarium has been limited due to the ongoing COVID-19 situation. The photographs we have acquired need to be uploaded to Symbiota for transcription; we need guidance and facilitation by BRIT.

BRIT: The portion of the workflow that involves image processing (renaming, editing, and upload) requires on-site presence to keep it moving; and, since COVID-19 restrictions do not allow this, this portion of the work has suffered.

HUH: We are still developing our georeferencing workflow, which is expected to combine the Geo-Locate collaborative interface and Geo-Locate into our existing HUH Transcription App. The HUH has a historical collection and we are concerned that our need for historical maps is not well-served by Geo-Locate, which links out to historical maps, but does not integrate historical map overlays that would facilitate fast and efficient plotting of historical locality data.

KANU: Unable to make any progress imaging specimens due to inability to access specimens; we can do some databasing remotely, especially quality control work, but that work has also slowed considerably in the last 30 days, and the number of databased specimens that are not georeferenced specimens is now very small.

There is a good chance that some of the hourly students we hired to assist with the project will leave university employment as soon as the semester ends (May 16) if they are unable to work any hours this summer, which means they will have to have some access to specimens by the middle of the next month.

MO: Nothing new to report.

NOSU: Nothing new to report.

NY: Nothing to add.

OKL: Nothing new to report.

OKLA: Still awaiting delivery of imaging box. It is unclear how many student workers will be available if the equipment is not available early in the summer.

TAES: We have recently acquired all the necessary tech.

TAMUCC: The global lockdown due to the coronavirus outbreak halted the progress of the project.

TEX/LL: Nothing new to report.

TCC: From March 18 – April 30 our University was in a Phase IV of response to COVID-19, preventing all non-essential research activities, and we are unable to work at the University or Herbarium.
Until we receive a new imaging station from BRIT and are able to return to on-campus work in the Herbarium, we will be unable to proceed with imaging and label transcription.

UTEP: The biggest impediment now is the closure due to the pandemic. When UTEP reopens, regaining student volunteers and participation in the project will be a challenge to overcome.

Opportunities to Enhance Training Efforts; Training and Professional Development Opportunities you offered and/or participated in (e.g., webinars, student digitizer training, etc.):

BAYLU: Developed imaging protocol and trained student workers and technician on photography.

BRIT:

* Trained University of Oklahoma (OKL) representatives (Abby Moore, Amy Buthod, Leann Monaghan) in Symbiota use and functionality (February 26th, 2020)

* Protocols for transcription in Symbiota were updated at BRIT (week of March 25th) in anticipation of April training sessions

* Trained students from Rice University in basic Symbiota use / data entry (March 25th)

* Trained 27 TEX-LL students on the use of the Symbiota platform for transcribing herbarium specimens, April 1st & 3rd, 2020. TORCH TCN staff at BRIT responded to questions and guided students, with the assistance of the TEX-LL Curator (George Yatskievych) and the TEX-LL Collection Manager (Amber Horning), both during the webinar and via email since then.

* TORCH Project Manager Diego Barroso provided a Zoom session for BRIT TORCH TCN staff, detailing advanced Symbiota functions and use of the Symbiota back-end (April 8th, 2020), with assistance of Collection Manager Tiana Rehman and Technological Innovator Jason Best.

* Trained 35 Volunteers on the Notes from Nature platform during WeDigBio Lite (wedigbio.org), over the course of two Zoom-based webinars, Sat. and Sun., April 17th - 18th, 2020. Encouraged the transcription of TORCH and other TCN specimens.

* #TranscriptionThursdays launched April 23rd. Guided 2 webinars for a total of 45 members of the public, to contribute to Citizen Science transcription efforts in Notes from Nature.

* Provided digitization training to five new BRIT volunteers in the herbarium, in the tasks of imaging and transcribing specimens.

* Herbarium staff have provided digitization training for high school student intern at BRIT, Technovator Jason Best has trained him in the construction of his light-box designs and he has been completing this activity.

AT BRIT & OKLA: TORCH Project Manager, Data Manager, and Technological Innovator held multiple online meetings and discussions, in order to advance the Project (planning, and innovations), on the following topics:

* OpenRefine, Data Cleaning, & Name Resolution Services (March 20th and April 8th)

* Image Processing, Image hosting and serving, and ingestion of images into TORCH Symbiota Portal (March 24th)

* Discussion with Ed Gilbert on Taxonomic Thesaurus used in Symbiota,Taxonomic cleaning tools, and image mapping (March 25th)

* Using BioSpex to stage subsets of subjects for Notes from Nature (April 7th)

* Symbiota advanced functions and back-end (April 8th)

*With Michael Denslow, creation of Projects & Expeditions in Notes from Nature (April 9th)

* With Tiana Rehman, BRIT Collections Manager, launching a new project and Expedition(s) in Notes from Nature (April 15th)

* Image segmentation, OCR, and parsing of data using Google Collab & TensorFlow, and Python (work being developed by Jason Best and Clay Barrett) (April 29th)

HUH: Nothing new to report.

KANU: We have provided a “georeferencing best practices” summary to one of our databasers (LeeAnn Bennett) so she can learn more about the georeferencing process.

MO: Nothing new to report.

NOSU: Nothing new to report.

NY: Nothing to add.

OKL: Online training of OKL staff on the use of the Symbiota portal by Diego Barroso.

OKLA: See multiple online meetings of Clay Barrett with Diego Barroso and Jason Best at BRIT, above.

TAES: Nothing new to report.

TAMUCC: None yet, but there are plans to have undergraduate student participation and training.

TEX/LL: Nothing new to report.

TCC: We have a weekly herbarium meeting where we discuss best practices. This semester, we focused on training students to mount specimens and record specimen data from collector journals.

UTEP: Nothing new to report.

Collaboration with other TCNs, Institutions, and Organizations:

BAYLU: Nothing new to report.

BRIT:

* Created online presence for OKL on TORCH portal (February 18th, 2020)

* Created online presence for SAT on TORCH portal (March 9th, 2020)

* Created online presence for TAES on TORCH portal (March 17th, 2020)

* Launched "Flora of Texas and Oklahoma" Project on Notes from Nature, including 2 TORCH Expeditions, plus a third one in preparation (April 17th – 30th).

* Held first TORCH TCN Executive Committee Meeting (April 28th, 2020), to help steer the project going forward. All P.I.'s were in attendance, and it was determined that further Executive Committee meetings will be held periodically as necessary.

* TEX students have transcribed ~3804 specimens so far (April 30th, 2020), as part of the ongoing collaboration with BRIT. These transcriptions are actively being reviewed by Amber Horning, Collection Manager at TEX.

* See also dissemination with Texas Master Naturalists below.

HUH: Nothing new to report.

KANU: Nothing new to report.

MO: Nothing new to report.

NOSU: Nothing new to report.

NY: We collaborate with the other TCNs we have been involved in as described above under "Other Digitization."

OKL: Nothing new to report.

OKLA: D.M. Clay Barrett is collaborating with Jason Best at BRIT in order to process images (image segmentation for accession stamp detection, followed by OCR and parsing of the data obtained), as well as in the preparation of the next TORCH Expedition on Notes from Nature.

TAES: Nothing new to report.

TAMUCC: None yet.

TEX/LL: Current data entry at PAUH (data provider) is being funded under a grant from the CONTEX program of University of Texas/CONABIO, to digitize resources on Tamaulipan thornscrub in U.S. and Mexico. Rest of PAUH's Texas/Oklahoma holdings will be digitized through the TORCH project. The collaboration with BRIT transcription of their records is ongoing.

TCC: Assisted with the addition of the Angelo State University herbarium (SAT) to the TORCH portal, communicating with SAT Collections Manager Diana Kresja.

UTEP: Nothing new to report.

Methods of disseminating results to communities of interest (presentations, lectures, etc.):

BAYLU: Nothing new to report.

BRIT:

With Texas Master Naturalists:

* 21 April (58 attendees): Provided Introductory Botany training via Zoom to the only chapter (North Texas Chapter) continuing with its Spring training of interns. During this class, the TORCH TCN was presented, and the call for citizen scientists was put out to help with TORCH transcriptions in NfN.

* 27 April (38 attendees): Indian Trail Master Naturalist Chapter. Presented the importance of herbarium vouchers and understanding the gaps in our knowledge of the Texas flora, including the TCN and the data that would be available. The call for citizen scientists was put out to help with TORCH transcriptions in NfN.

* Blackland Prairie Chapter attended a 'curation day' at BRIT to complete pre-digitization steps for a recently aquired collection that had been gifted to BRIT, of the Collin County College Herbarium. Material is primarily from Texas and Oklahoma, and the group intends to return to complete the project, including the digitization of these specimens.

* GM Financial: Volunteer group from their international loans division volunteered with us to locate and prep Texas and Oklahoma specimens from the collection (and transcribe other TCN specimens online)

HUH: Nothing new to report.

KANU: Nothing new to report.

MO: Nothing new to report.

NOSU: Nothing new to report.

NY: Nothing new to report.

OKL: Nothing new to report.

OKLA: Nothing new to report.

TAES: Nothing new to report.

TAMUCC: Presentations, news release, conference presentation, etc.

TEX/LL: Gave one lecture to Freshman Research Initiative class (32 students) and subsequently led an exercise to give students experience with label transcription and image creation. Also gave two programs on herbaria to local garden clubs, that included slides on the TORCH project. Also mentioned the TORCH project at five other general tours of herbarium.

TCC: TCC Director Matt Johnson gave a presentation on the Herbarium to the Texas Tech University Beta Beta Beta Biology Honors Society.

UTEP: A student poster presentation was given at the UTEP Student COURI Symposium (virtual: April 29, 2020), by undergraduate student Justin Von Seebach, who helped set up our imaging workflow and presented on the TORCH project.

Other Education and Outreach activities:

BAYLU: Nothing new to report.

BRIT: See above.

HUH: Nothing new to report.

KANU: Nothing new to report.

MO: Collection and Project-Related Tours and Public Events
TOTAL: 4 Events, 353 people, as follows:

25 February 2020
World Trade Center, British Delegation
13 people

28 February 2020
Missouri Department of Natural Resources
Cape Girardeau Nature Center
6 people

5 March 2020
Orchid Nights (Garden Members, general public)
317 people

6 March 2020
Poplar Bluff, Missouri, Gardeners Group
17 people

NOSU: Nothing new to report.

NY: McKenna Coyle, our TORCH project manager published this story map in The Handlens, which is the NYBG Herbarium's public outreach outlet. It is a road trip to "see" wildflowers in the southern US, including the TORCH area: Road Trip: Southern Wildflowers by McKenna Coyle, published 23 April 2020 http://sweetgum.nybg.org/science/the-hand-lens/explore/narratives-details/?irn=7471

OKL: Nothing new to report.

OKLA: Nothing new to report.

TAES: Nothing new to report.

TAMUCC: Nothing new to report.

TEX/LL: Discussed the TORCH digitization efforts with staff at the Witte Museum in San Antonio, which holds about 12,000 herbarium specimens.

TCC: Nothing new to report.

UTEP: Nothing new to report.

Products generated (publications, conference presentations, technologies/techniques, websites, etc.):

BAYLU: Nothing new to report.

BRIT:

Webpage for all remote digitization activities, including those of the TORCH TCN: www.brit.org/armchairbotanist

"Flora of Texas and Oklahoma" Project on Notes from Nature: https://www.zooniverse.org/projects/md68135/notes-from-nature-flora-of-texas-and-oklahoma

HUH: Nothing new to report.

KANU: Nothing new to report.

MO: Nothing new to report.

NOSU: Nothing new to report.

NY: See story map by McKenna Coyle above.

OKL: Nothing new to report.

OKLA: Nothing new to report.

TAES: Nothing new to report.

TAMUCC: We have two conference presentations that are linked directly or indirectly to the digitization project as follows:

> Rodriguez, J. & **Daru, B.H.** (2020) Mismatches and congruencies in plant sampling biases between observations and vouchered specimens. *46th conference of the South African Association of Botanists*, Qwaqwa, Free State, South Africa (January 2020).
>
> Snyder, L. & **Daru, B.H.** (2019) How digitization efforts at small local herbaria add to the scientific community and predicting the impact of the Ruth O'Brien Herbarium. *Global Change Symposium*, Texas A&M University-Corpus Christi, December 2019.

TEX/LL: Nothing new to report.

TCC: Nothing new to report.

UTEP: Nothing new to report.

Participants (especially those who have newly joined the project):

BAYLU: Nothing new to report.

BRIT: Ashley Bordelon, Digitization Technician (abordelon@brit.org); Demetrio Rivas, Cristo Rey high school student who has been trained in digitization and who has been helping build lightboxes under the guidance of Jason Best. Also, there are 28 students at TEX/LL actively working to help transcribe BRIT specimens in Symbiota, as part of the ongoing BRIT-TEX collaboration.

HUH: Nothing new to report.

KANU: We hired four new hourly students in February and were just beginning to get them trained in databasing (they all were helping find specimens in the cases) when the campus shut-down occurred:

* Zoe Chan – hourly student
* Keta Ewing – hourly student
* Tanishka Shah – hourly student
* Megan Wetherington – hourly student

Project participants working on the project during the previous reporting period and continuing are:

* Craig Freeman – PI
* LeeAnn Bennett – databasing
* Maeve Hilgers – hourly student

MO: Although not yet implemented, I believe the most difficult aspect of the entire project will be locating and contracting enough student workers or employees to actually do the work. Recruiting will obviously be a top priority, if and when we return to some kind of "normalcy" from this pandemic.

NOSU: Nothing new to report.

NY: McKenna Coyle (started in November 2019).

OKL: Abby Moore, Amy Buthod, Leann Monaghan (newly joined), Sam Basave (graduating).

OKLA: Clay Barrett, TORCH Data Manager, was hired on March 9th, 2020; he is able to effectively work remotely during the campus shutdown. Joseph Hogan, Alyssa Regier, and Zachary Shiever (undergraduate assistants, supported by the TORCH TCN) continued participating.

TAES: Nothing new to report.

TAMUCC: None yet.

TEX/LL:

* Saint Edward's University Herbarium, Austin, TX (no acronym yet)
* Fort Worth Nature Center, Fort Worth, TX (FWNC)

TCC: 3 Graduate Assistants (Yanni Chen, Haoran Xu, Zhiyuan Li), 5 Undergraduate Assistants (Jennifer Mendez, Hayden Mathews, Chase Bergeron, Cassidy Coker, Madeline Slimp).

UTEP: Justin Von Seebach, UTEP undergrad; Alexa Moreno, UTEP undergrad; Alexandra Bernard-Weiner, UTEP MS Student; Vicky (Mingna) Zhuang, UTEP Collections Manager. Don't know how many of these students will remain after the shutdown.

Opportunities and Strategies for Sustainability:

BAYLU: Nothing new to report.

BRIT: The COVID-19 sheltering requirements have resulted in all team members improving their digital communication, and our project staff have begun to use, or continued their reliance on, free and paid services to accomplish this, including the following services: Slack, Click-Up, Microsoft Teams, DropBox, Google Drive, and Zoom.

HUH: Nothing new to report.

KANU: A lot depends on when we'll be able to regain access to the collection. If that happens by mid-May, there is a reasonable chance we'll be able to complete our work by the end of August. However, there is a real possibility that students will not be allowed to return to work as quickly as staff members. If the university implements a phased return to campus, we are discussing ways that staff with access to the collection can engage off-site student workers. We think that might be accomplished by imaging batches of specimens that aren't databased and having students create skeletal records based on the images or, with appropriate safety measures, making actual specimens available to be worked on remotely.

MO: Nothing new to report.

NOSU: Nothing new to report.

NY: Nothing to add.

OKL: Nothing new to report.

OKLA: OK and TX specimens are now segregated in state-only folders, which will facilitate addition of new records after the life of the project.

TAES: Nothing new to report.

TAMUCC: Faculty and students to grow the collection through field trips or class assignments in Plant Taxonomy course by collecting specimens for the herbarium and digitizing the collections.

TEX/LL: Nothing new to report.

TCC: Nothing new to report.

UTEP: Nothing new to report.

Other Progress not listed above (anything else to share):

BAYLU: Nothing new to report.

BRIT: Company policies during COVID-19 impacted work on the TORCH TCN, as all our full-time staff were given 4 weeks of sick leave. This meant that our only full-time TORCH TCN digitization staff member was not working during this time, and their individual productivity will have decreased this quarter.

HUH: Nothing new to report.

KANU: Nothing new to report.

MO: Nothing new to report.

NOSU: Nothing new to report.

NY: Nothing to add.

OKL: We will likely be able to make good progress on digitizing our own specimens once the university reopens for research, so this should not delay our progress that much. However, it is unclear when we will be able to travel to other herbaria to pick up their specimens for digitizing. This delay will set us back somewhat, since it was mainly planned for the summers. However, it may be possible to work with some of the closer herbaria during the academic year instead.

OKLA: Nothing new to report.

TAES: Nothing new to report.

TAMUCC: None yet, as the project has yet to fully take off.

TEX/LL: Participated in one TORCH Executive Committee online meeting and one meeting with Texas Advanced Computing Center (TACC) about file-hosting.

TCC: Nothing new to report.

UTEP: Nothing new to report.

Questions/comments:

NOTE: The iDigBio TORCH TCN Digitization Workshop, which was scheduled to be held at BRIT in Fort Worth, TX, over the weekend of March 28th and 29th, had to be cancelled due to the coronavirus outbreak. This workshop had a confirmed attendee list of over 50 participants, and would have included talks on all topics of the digitization workflow (specimen staging, imaging, transcription, georeferencing, data curation), as well as talks on the inner workings of the Symbiota portal, on coordinating volunteer and outreach groups, and other relevant topics. Hands-on demo sessions had also been planned for the attendees, as well as meetings for project steering and reporting. The cancellation of this workshop had a great impact on our project, but we have been able to pivot to online meetings and webinars for many of the planned sessions. Nevertheless, we still hope we will be able to hold a TORCH TCN Workshop or Meeting sometime in the near future, especially to further the digitization efforts at the institutions who need it most.

BAYLU: We have 2,000 photos waiting to be uploaded to some portal that will allow our home-bound technicians to begin transcription. We need instruction on where and how to a) upload these, and b) link these into Symbiota.

NOSU: Sorry. I've got nothing. Pandemics make this work hard.

NY: We need to talk about getting our data on the TORCH website, whenever you are ready to do this.

OKLA: I suggest at least quarterly meetings of the Executive Team either before or after the quarterly reports are due. I'm not sure which would be most useful.

TAMUCC: None yet.

Report provided by Sam Houston State University (SHST):
"We don't have much to report. Dr. Justin Williams was going to hire some student workers, but we are not allowing students into the university labs now. We are temporarily on hold until the University opens up again in the Summer."

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Submission #1618

Submission information

Form: TCN Quarterly Progress Report to iDigBio
Submitted by EPICC
Friday, May 1, 2020 - 18:53
67.170.238.79

TCN Name:
Documenting Fossil Marine Invertebrate Communities of the Eastern Pacific - Faunal Responses to Environmental Change over the last 66 million years

Person completing the report:
aadineen@berkeley.edu

Progress in Digitization Efforts:
As of 04/24/2020, the TCN has fully curated and computer cataloged 1,933,432 specimens (118% of goal) and made 690,470 of these specimens (41% of goal) available in the iDigBio portal. The TCN has photographed 137,227 specimens (164% of goal) and georeferenced 36,062 localities (110% of goal). UC-Riverside reports that they have also scanned 223 well records to add to their database. ANSP has an undergraduate student currently working remotely full time to investigate the history of the invertebrate paleontology department. She has been identifying gaps in their digitization efforts, including helping to track down EPICC-relevant locality data. Since the COVID-19 shutdown, LACM has transitioned to many digital-only activities. These include: 1) scanning old taxonomy file cards (thousands of Eastern Pacific Cenozoic species); 2) identification of specimens from images on behalf of other institutions (>2000 specimen lots for USNM); 3) improving data quality and dwc compliance without their own IPT data file; and 4) working with other institutions to rectify data quality issues raised during the end-2019 EPICC meeting, particularly with regard to age precision and lithostratigraphic data quality. UO also helped out UCMP by digitizing two USGS Cenozoic locality ledgers.

Share and Identify Best Practices and Standards (including Lessons Learned):
PRI reports that they had the good fortune of having a few contingency plans in place when the Covid-19 crisis induced stay-at-home orders, including an opportunity to dismantle a photography workstation (including the computer, camera stand, camera, and miscellaneous accouterments) and transfer it, as well as a large number of small (<4 mm) specimens, to an employee's home. They had ordered a new camera lens (Macro Photo Lens MP-E 65mm f/2.8 with zoom capability of 1-5x) and ring light as well as new, smaller sized color targets (ColorGuage Pico Targets from Image Science Associates) that got delivered right before the shutdown, which allowed them to begin photographing many of

the smaller specimens that had been skipped over (when larger specimens were given precedence). Unfortunately, while the table is sturdy enough for the photography, the ring light seems to induce a small vibration. The home set-up can not be further modified, so a true test of the ring light will not take place until the entire set-up can be reinstalled at the office with a sturdier base. Furthermore, another PRI staff member was able to take a small number of specimens (~100-200) home in order to catalog them.
At ANSP, they have been teaching three undergraduate students remotely since the COVID-19 pandemic began. None of these students ever got the chance to work with them in the collection before starting their work remotely. Two of the students are working primarily on georeferencing EPICC localities. They have all been learning together how to teach/learn over Zoom videoconferencing, showing each other their georeferencing work by screensharing, and helping each other from a distance. Demonstrating examples through screensharing has been very effective. Setting up a standing “conference room” in Zoom so that students can ask to meet there virtually when they need help has been one of the most useful tricks they have used. They have daily standing meetings twice a day, which help keep the students motivated and provides time and space for socializing and creating a bonded team.
UO says that having their workers organized on Slack before the crisis has made it easy to transition to remote work during the COVID-19 lockdown. They moved their efforts from specimen photography to transcription of locality logs. One student made a cache of snapshots of specimens that she used to identify them in a spreadsheet, in which she can then use to update the database when they are allowed to return to campus.

Identify Gaps in Digitization Areas and Technology:
All of the TCN partners report a slowdown in digitization due to closures from the COVID-19 pandemic. At UC-Riverside, most of their specimen and locality records are unfortunately recorded partially or solely on paper, which they are currently unable to access. PRI reports that they are unable to verify information for material that needs to be digitized and actual digitization of the specimens. Very little of these procedures can be accomplished without the specimens being available. Also, because of security protocols, trained volunteers, who do much of these two procedures, cannot access PRI’s main server if they are not at their physical location. They have installed a version of their database in the cloud (Specify 7), but it has not been rigorously tested and debugged by staff yet, nor can any staff or volunteer training take place.
ANSP reports that the COVID-19 pandemic has changed their timeline, but not the deliverables. They had planned to continue to work on EPICC photography along with their new students, but since all are working remotely that is not currently possible, so they have swapped photography to occur in the second year of the grant. They have switched to georeferencing and are making excellent progress. Unfortunately, they still do not have a functional, relational database. ANSP is currently in discussions about whether to move to a modern museum-wide collections database (most likely Specify or Arctos). In the meantime they are using Excel, as the Filemaker database they inherited is out of date and non-relational. They are working on updating and cleaning the data in their Excel database to prepare to implement to a new platform.

Share and Identify Opportunities to Enhance Training Efforts:
UCMP staff worked to identify student employee activities that could be done online and remotely, while also working with separately-funded graduate students to establish a workflow for re-labelling field and prep lab images for eventual upload. ANSP also trained two new undergraduates on how to georeference so that they can work remotely on the project. At CAS, they have been expanding georeferencing efforts to include staff who were not directly involved with EPICC, or working on georeferencing, and are currently

providing training to these staff during the museum closure. This training will prove useful not only to EPICC, but to future work in CAS's collections.
At PRI, one of their collection assistants is taking specimen photographs and doing image post processing from home. She has been exploring a new camera lens (Macro Photo Lens MP-E 65mm f/2.8 with zoom capability of 1-5x) and ring light with hands-on training and by watching training videos and exploring online forums to expand her knowledge base. Lastly, several members of the TCN participated in the virtual iDigBio workshop on April 28-29th, "Georeferencing for Paleo: Refreshing the Approach to Fossil Localities".

Share and Identify Collaborations with other TCNs, Institutions, and Organizations:
LACM has been working with USNM to provide identifications, as well as improve stratigraphic and age data. ANSP reports that since the COVID-19 pandemic has left us all looking for opportunities for remote work, and for connection to colleagues, they have partnered with EPICC team members at LACM, PRI, and the NMNH to create opportunities for students. Using Zooniverse, students will connect with students of our EPICC partners to count and identify EPICC specimen lots that have been photographed at NMNH. The NMNH and ANSP have collections made by the same researchers that were split amongst various institutions, so working with the NMNH equivalents will enable them to identify and update their own collections once they're back to work.

Share and Identify Opportunities and Strategies for Sustainability:
Nothing to report at this time.

Share and Identify Education and Outreach (E&O) Activities:
In late February, PRI's VFE construction team of Don Haas and Rob Ross, along with Lisa White (UCMP), collected images and video in the field of the Astoria Formation near Newport, Oregon and visited collections at the Natural and Cultural History at the University of Oregon Museum in Eugene. They were joined by individuals from the UCMP (Pat Holroyd and Ashley Dineen), the University of Oregon (Edward Davis, PhD student Kellum Tate-Jones, and undergraduate Megan Pollak), and Portland State University (Frank Granshaw), as well as prominent local amateur paleontologist Kent Gibson. Additional images for the VFEs taken on other trips are being contributed by Warren Allmon (PRI) and from Granshaw and Tate-Jones. Since late February, Haas, Ross, White, and Tate-Jones (UO) have begun work on the virtual fieldwork experience for the Astoria Formation in Oregon. Haas, Ross, and White in the meantime continue work on a VFE for the Pleistocene terraces south of Los Angeles. The COVID-19 crisis has not substantially changed the process of creating the EPICC VFEs. However, a tremendous need has arisen for online resources for teachers, and the first two EPICC VFEs are being promoted with PRI's other online materials. At PRI, they are internally discussing how to provide more support to help teachers and professors who wish to create their own VFEs for students at home or have their students create VFEs in their own neighborhoods.
ANSP displayed EPICC specimens and talked to visitors about their digitization efforts at the Academy's "PaleoPaleooza" weekend event, March 7-8. On April 17, they used the EPICC Virtual Field Experience for the Kettleman Hills' outcrop and fossils to remotely present to a group of Academy donors and trustees about how the department is digitizing collections and working remotely during the pandemic. Their EPICC-funded students spoke about their experiences and goals, and were a big hit with the audience. This remote event was also attended by Academy senior management, including the Academy president, to test how to remotely engage donors and the public, and each member of the senior management team indicated that this was a very successful event. Lastly, LACM has been developing a Zooniverse platform "Reading the Fossil Record" for volunteers and students to help USNM harvest specimen attribute dwc data from thousands of

specimen lots, and develop a streamlined workflow for providing identifications to those specimen lots. This will provide a potentially public facing glimpse into the behind-the-scenes of museum collections during this COVID-19 shutdown.

Google Analytics

Other Progress (that doesn't fit into the above categories):
UCMP worked with their staff computer programmer, Joyce Gross, to update licensing of images and testing of modified batch image uploading scripts. They have also been working on cleaning taxonomic errors and misspellings in their database. PRI has begun preliminary discussions about how they are going to make up the work that has been paused because of the Covid-19 crisis. Ideas on how to proceed are heavily dependent on when they can access the building, what social distancing guidelines are in force, how many of their trained volunteers return, and other internal factors.
CAS reports that previous digital capture of their ledgers/catalogs has allowed them to make excellent progress with locality verification and cleaning, as well as verifying data from our types collection, while working off-site. Having so much already in digital form has allowed staff to maintain steady, relevant progress in areas outside of specimen databasing, without having to move irreplaceable hard-copy materials off-site. One tangible impact is the verification of legacy type material which has now been ingested into our EPICC database and will be served along with EPICC data to GBIF and iDigBio.
Lastly, LACM is close to submitting their data through the IPT to GBIF and iDigBio. They are about four weeks into a very detailed final scrub of the 74,000 specimen lots that are being submitted, and are reconciling variations in taxonomic data, preservation, anatomy, age, and lithostratigraphy.

Attachment 1

Attachment 2

Source URL: https://www.idigbio.org/node/564/submission/1618

Published on *iDigBio* (https://www.idigbio.org)

Submission #1626

Submission information

Form: TCN Quarterly Progress Report to iDigBio
Submitted by dcblackburn
Tuesday, May 5, 2020 - 17:08
70.185.108.81

TCN Name:
oVert: Open Exploration of Vertebrate Diversity in 3D

Person completing the report:
dblackburn@flmnh.ufl.edu

Progress in Digitization Efforts:
Since 1 September 2017 (when our TCN officially began), we have added more than 10,500 media files representing >5,100 specimens to MorphoSource as part of the oVert TCN. We have CT-scanned >7,7100 fluid-preserved specimens approaching 3,800 genera of amphibians (>90% of all type genera), reptiles (73%), fishes (41%), mammals (39%), and birds (31%) representing approximately half of all vertebrate families, including specimens from across more than 45 US institutions. To date, the media files on MorphoSource have been viewed >416,000 times and downloaded >13,000 times (~60% for research in a broad range of biological fields).

While scanning is on-going at institutions across the TCN, we have developed priority lists of target species using iDigBio specimen data. We have shared lists for fishes, reptiles, and mammals, and birds such that different institutions can begin prioritizing and mobilizing specimens in their collections for imaging. We have also developed lists of target species for contrast-enhanced CT and lists of species that would aid in answering questions of broad interest to the research community (e.g. intraspecific variation, ontogeny, extinction).

Share and Identify Best Practices and Standards (including Lessons Learned):
We continue to work closely with staff at MorphoSource (Doug Boyer, Julie Winchester) on issues related to the oVert TCN. Building on our recent work to integrating specimen data from iDigBio into MorphoSource, we continue to work on strategies to allow institutions to ingest metadata for media files into their own institutional databases and IPT. We have recently outlined a strategy to achieve better integration between MorphoSource and local Specify databases and have nearly completed a demonstration of this at FLMNH.

Previously reported efforts to achieve standardization in CT-scanning workflows are on-

going. We have found that group discussions on our project management app have led to sharing and development of protocols that can be implemented across the network. For example, scripts developed by oVert for different parts of our workflow are used by many network partners and are hosted on GitHub and updated as needed.
https://github.com/FLMNH/MorphoSourceRSSDownloader
https://github.com/nsvitek/CT_tools/tree/master/morphosource_batch_convert

We continue to work on text that institutions can use for their policy for digital data ownership. We are working with MorphoSource and local IT departments at each institution to accomplish this task. We have found that having policy paperwork separate from MorphoSource's native data usage agreement can create a barrier to data usage and are working to streamline these issues.

Zach Randall (UF) has worked with participating oVert institutions ANSP (PI Sabaj) and YPM (CoPI Watkins-Colwell) to improve workflows related to specimen packaging and scanning. He has also trained staff at the Smithsonian National Museum of Natural History, a non-partner institution that will be loaning a large number of specimens for oVert scanning, in these methods.

The oVert postdoctoral scientist, Dr. Catherine Early, has led efforts to develop efficient, standardized workflows for generating contrast-enhanced CT-scans of each vertebrate family. This has supported the start of contrast-enhanced CT scanning at UMMZ, UChicago, and MCZ before the cessation of all scanning. These efforts will continue as a priority of oVert when it is safe to resume in-person research activities.

Identify Gaps in Digitization Areas and Technology:
We continue to deal with challenges of long-term data storage for the project, since scanning produces large amounts of 3D data. We are working with institutions to repatriate raw projection data from scanning events that will be archived at those institutions. In addition, we are participating in efforts led by MorphoSource to create a workflow where institutions can manage their CT data in that on-line depository (as opposed to local databases) by "containerizing" MorphoSource for specific institutions. We have found that the process of uploading scans to MorphoSource has been the biggest bottleneck in digitization, but this can only be resolved by more dedicated manpower at scanning institutions. Via iDigBio, oVert and MorphoSource hosted a workshop in January 2020 focused on using institutional data storage solutions to archive CT-data that are then made available through discipline-specific on-line depositories such as MorphoSource.

Share and Identify Opportunities to Enhance Training Efforts:
In Year 3, we have been continuing to focus on best practices and training. In addition to our on-site training workshop for imaging staff in late 2018, we continue with bi-weekly calls to discuss issues in the imaging workflow.

The oVert team continues to develop digital media (both PDFs and short videos) that provide background information about CT-scanning as well as guides on creating, sharing, and using media generated by the oVert TCN. Files are available via the oVert iDigBio wiki and videos are available on the MorphoSource YouTube page (https://www.youtube.com /channel/UCusG--ELmxbSHNuTIcVL5mQ). Other instructional videos about processing oVert CT data have been developed by oVert research scientist Ramon Nagesan and his colleagues at UMMZ (https://www.youtube.com /playlist?list=PLRu5Ab94NHuxquFgNafDfVY6cJPe1jWRt). Several institutions have undergraduate and doctoral students working as grant-funded technicians, which provides

an opportunity for training students in CT research methods. Across our network of institutions, images, digital and 3D-printed models, and actual CT-scan data are used in undergraduate and graduate courses as well as in outreach events, exhibits, and social media.

In January 2020, oVert and MorphoSource hosted an iDigBio workshop at Duke University that addressed architecture of potential solutions to the problem of efficiently and sustainably acquiring, organizing, and serving digital media files, including images, audio, video, and three-dimensional datasets representing observations or objects from the natural world. Many oVert partners were able to share their experiences with data management and learn from other institutions (18 represented in total) at this workshop.

In March 2020, the oUTCT PEN hosted a workshop co-sponsored by oVert at the University of Texas at Austin High-Resolution X-Ray CT Facility (UTCT). The ten participants from as many institutions received a crash-course in best practices for CT specimen selection and data acquisition, as well as hands-on training in ImageJ, Avizo and Dragonfly. The workshop was led by oUTCT PEN PI Dr. Jessie Maisano and her UTCT colleagues, and oVert postdoc Dr. Catherine Early and MorphoSource staff member Mackenzie Shepherd were present to provide support.

We continue to support opportunities for training in CT-scanning at Friday Harbor Labs as part of the Broader Impacts of the oVert TCN (http://bit.ly/ScanWithoVert2019). While at scientific conferences, we are disseminating this advertisement to solicit applications from undergrad and graduate students as well as professionals.

Share and Identify Collaborations with other TCNs, Institutions, and Organizations:
Almost as soon as the oVert TCN began in September 2017, there was wide interest from colleagues and institutions in the US and internationally in participating in or collaborating with our project. We have been working with unfunded US-based institutions at which we will CT-scan selected high-value specimens representing key taxa that are otherwise not available in oVert-participating institutions. We have recently begun work with both the the Carnegie Museum of Natural History and the Smithsonian National Museum of Natural History related to CT-scanning fluid-preserved birds. We are discussing opportunities to work with other institutions that have ongoing collaborations with oVert-participating institutions, such as scanning large marine mammal specimens through connections at Texas A&M-Galveston. The oVert PEN oMEGA (led by Leif Tapanila, Idaho State University) is underway and recently conducted site visits for imaging at both the University of California – Berkeley and the California Academy of Sciences. The oMEGA PEN uses light-based scanning to image individual skeletal elements of large vertebrates (e.g., whales) that would otherwise not be included within oVert due to size limitations of CT-scanning. Two other PEN proposals associated with oVert were recently funded by NSF: oUTCT is led by PI Jesse Maisano at the University of Texas – Austin (UTCT) and will mobilize legacy data at the federally supported UTCT facility via MorphoSource; and FuncQEE, led by Noé de la Sancha at Chicago State University, will CT-scan rodent diversity to provide an in-depth perspective on ecomorphological diversity using fluid-preserved specimens, as well as skins and disarticulated skeletons.

Share and Identify Opportunities and Strategies for Sustainability:
The oVert TCN builds on existing resources by adding media files to an existing database platform, MorphoSource (supported by Duke University and the US National Science Foundation), and each institution is individually responsible for long-term storage of original media files if they choose to do so.

The University of Florida has entered into a licensing agreement to share CT scans generated using UF funds (i.e., not funded by NSF) with Interspectral (http://www.interspectral.com/). Revenue generated through licensing CT datasets from UF specimens will be used to support curation, research, and education at FLMNH. While not directly funded by oVert, this strategy of licensing media files for commercial use may provide funds that sustain data storage and museum curation into the future.

Share and Identify Education and Outreach (E&O) Activities:
In June 2019, we conducted our first hands-on workshop with 9 middle school and high school teachers in June 2019 via the Summer Science Institute based at the UF Center for Precollegiate Education and Training. Teachers worked with oVert PIs and students based at UF to create learning exercises (available here: https://www.cpet.ufl.edu/teachers /lesson-plans-and-curricula-/#oVERT19) using digital models on-line (via MorphoSource and/or Sketchfab) or 3D-printed models.

Information about products from the oVert TCN are regularly communicated on social media (https://twitter.com/hashtag/overttcn). Social media coming from oVert is received well on-line and often used by the US National Science Foundation in their social media feeds.

Google Analytics

Other Progress (that doesn't fit into the above categories):
As of this report, there are at least 36 scientific publications citing one of the 16 oVert TCN Awards. In addition, there have been more than 40 presentations at professional meetings related to oVert, including recent presentations at the national meetings of the 3rd iDigBio Digital Data in Biodiversity Research Conference, American Society of Mammalogists, and Joint Meeting of Ichthyologists and Herpetologists, and international meetings such as the 9th Congresso Brasileiro de Herpetologia and 12th International Congress of Vertebrate Morphology. Publications and presentations are detailed on the oVert iDigBio wiki page: (https://www.idigbio.org/wiki/index.php /OVert:_Open_Exploration_of_Vertebrate_Diversity_in_3D).

The oVert TCN is regularly highlighted in publications by those not directly associated with our project. For example, Hipsley & Sheratt (2019; Scientific Data) listed oVert (and only oVert!) as a project that can "fully realize the potential of open digital morphology." Similarly, the promise of data from oVert was also highlighted in recent work by Harmon et al. (2019; Frontiers in Ecology & the Environment) in their discussion of using museum collections to track pathogens and parasites. A version of figure 1 from the oVert NSF proposal recently appeared in the book Animal: Exploring the Zoological World (Phaidon Publishers, London).

Impacts of COVID-19 on oVert TCN:
All oVert institutions have had their staff working remotely for weeks to prevent the spread of COVID-19, which halted all museum loans and CT scans. oVert staff have attempted to continue work on the project from home, but as CT-scanning specimens on loan or loaning the specimens themselves are required to generate new data, we have had to get creative.

Some partners have used the time to better organize and explore their databases so they are prepared to begin loans for oVert as soon as it is safe to resume shipping. In a few cases, they had to reverse work that they had begun to prepare specimens for shipping by

returning those specimens to long-term storage when they received the news that their institutions would be closed.

Others have taken advantage of training opportunities for new software use to process oVert data or developed training materials of their own. Those who have access to the appropriate software have been generating virtual models from the CT scans to share on MorphoSource and in their outreach efforts. However, the limited number of computers with appropriate power and software to process CT means that researchers want to process the data at a higher rate than they are able.

The easiest activity for oVert researchers to do from home is to upload the backlog of CT scans to MorphoSource. Two scanning institutions already report that they have completed this, and we are working with others to make sure they have the resources they need to accomplish this task.

We promoted the virtual models of specimens available on MorphoSource when COVID-19 began to impact American universities in the hopes that the models could be useful for teachers. There was a spike in usage of oVert data on MorphoSource in the month of April. This coincides with many comparative anatomy courses being transitioned to online teaching, so the two could be related. We are planning targeted scanning efforts to make virtual models of organisms commonly used in comparative anatomy labs in case these courses have to remain online in the fall semester.

Attachment 1

Attachment 2

Source URL: https://www.idigbio.org/node/564/submission/1626

Published on *iDigBio* (https://www.idigbio.org)

Submission #1628

Submission information

Form: TCN Quarterly Progress Report to iDigBio
Submitted by CatChapman
Wednesday, May 6, 2020 - 11:13
66.231.139.49

TCN Name:
TPT

Person completing the report:
kathrynsully95@gmail.com

Progress in Digitization Efforts:
All participating institutions have collections registered on TPT's data portal SCAN (https://scan-bugs.org/portal/). We are working with all data providers to be sure their database platforms can accommodate specimen host association data. We continue to make modifications to Symbiota, Specify, Arctos, and EMu. It was our goal to develop a translation table with controlled vocabularies for host data entry at the TPT data integration workshop in February, and we have since completed this document and delivered it to the TPT network on Friday, May 1st; we are also planning a webinar that will take place June 10th. Currently, TPT has 43,864 records transcribed, 1,115 high resolution images, 21,719 scanned images of slide-mounted specimens, and 428 scanned images of ethanol stored specimens.

SCAN
Collections have begun to deliver data to SCAN either as snapshot collections or live databases. A total of 771 new records were shared on SCAN this quarter, bringing the total number of records on SCAN from TPT collections for target groups to 14,425. As of 5/4/2020 there were 4,166 images on SCAN. In order to adapt to remote digitization environments, some collections are now using SCAN as a crowdsourcing platform by uploading skeletal records with images and having volunteers or digitization technicians transcribe label data from the images directly into the live Symbiota portal. There is a significant number of skeletal records with images on SCAN that are being transcribed this way or with Notes from Nature that will be integrated into collection databases and SCAN in the near future.

GloBI
Collections provided 18,000 new interaction records to the TPT GloBI page this quarter for a total of 100,000 interactions to date. Also included in the latest Terrestrial Parasite

Tracker GloBI report are all biotic interactions from Arctos collections in VertNet and collections in SCAN. The total number of interactions included in the TPT GloBI report to date is 376,671 records. See below for information on the indexed datasets and the published report for this quarter. https://doi.org/10.5281/zenodo.3778773

This report documents that GloBI indexed datasets where TPT data providers are included. The datasets come from various sources (Darwin Core Archive, spreadsheet, etc.). Some of the datasets are very big (e.g., VertNet, SCAN), and include many more collections than just TPT collections.Two reports were published in the last quarter:

February 24 2020, 8 datasets, 10,829,201 reviewed records, 332,968 interactions
April 30 2020, 12 datasets, 11,233,569 reviewed records, 376,671 interactions

Datasets under review (including datasets outside of TPT collections):
- Field Museum of Natural History IPT accessed via https://github.com /globalbioticinteractions/fmnh/archive/83cf7fca9608859f5d9f8bf702e2ab4c5e08af80.zip on 2020-04-29T22:33:45.300Z

- Illinois Natural History Survey Insect Collection accessed via https://github.com /globalbioticinteractions/inhs-insects/archive /81b23b7d7e709f992ce1e43e5e3e71eaf732e5f4.zip on 2020-04-29T22:34:26.094Z *Added over 11,000 interactions

- Milwaukee Public Museum Biological Collections Data Portal accessed via https://github.com/globalbioticinteractions/mpm/archive /9f2e8359c2c84655e564247f07dd522655f8f7bb.zip on 2020-04-29T22:35:00.885Z

- Symbiota Collections of Arthropods Network (SCAN) accessed via https://github.com /globalbioticinteractions/scan/archive/de508d162f60698d3733199e79cff6a6bc4913ee.zip on 2020-04-29T22:41:14.766Z

- Texas A&M University Insect Collection accessed via https://github.com /globalbioticinteractions/tamuic-ent/archive /fa37da08931044f953d3a6db8df37c440593459c.zip on 2020-04-29T22:41:29.836Z

- University of California Santa Barbara Invertebrate Zoology Collection accessed via https://github.com/globalbioticinteractions/ucsb-izc/archive /01ebc8d7b4d42a7ad5897f531fb6978b1b10220e.zip on 2020-04-29T22:42:08.501Z *Added about 1,300 interactions

- University of Michigan Museum of Zoology Insect Division. Full Database Export 2020-01-27 provided by Erika Tucker and Barry Oconner. accessed via https://github.com /globalbioticinteractions/ummzi/archive/32fa98582c5f7d56e04e583c787371f0c5bd1b09.zip on 2020-04-29T22:42:26.421Z

- University of New Hampshire Collection of Insects and other Arthropods accessed via https://github.com/globalbioticinteractions/unhc/archive /55737ae08a3df37415b0a384456ce99648b2e306.zip on 2020-04-29T22:42:45.835Z *Added over 3,000 interactions

- Data were obtained from specimens belonging to the United States National Museum of Natural History (USNM), Smithsonian Institution, Washington DC and digitized by the

Walter Reed Biosystematics Unit (WRBU). accessed via https://github.com /globalbioticinteractions/usnmentflea/archive /f7de7a2154f8b965de193926434a28d95f3327fc.zip on 2020-04-29T22:42:51.996Z
*Added 2,700 interactions

- Giraldo-Calderón, G. I., Emrich, S. J., MacCallum, R. M., Maslen, G., Dialynas, E., Topalis, P., … Lawson, D. (2015). VectorBase: an updated bioinformatics resource for invertebrate vectors and other organisms related with human diseases. Nucleic acids research, 43(Database issue), D707–D713. doi:10.1093/nar/gku1117. accessed via https://github.com/globalbioticinteractions/vectorbase/archive /2ce1516d04d5d0e5fb206c0c9b0a15fc31641c86.zip on 2020-04-29T22:42:55.783Z

- https://vertnet.org accessed via https://github.com/globalbioticinteractions/vertnet/archive /6cdf78c1c34bdbf8a736c85ff4de9cdcd4e7b801.zip on 2020-04-29T23:17:37.275Z

*Denotes collections were indexed for the first time this quarter.

Share and Identify Best Practices and Standards (including Lessons Learned):
Workflows
Several workflows were demonstrated and shared with participants at the TPT workshop held at the Field Museum of Natural History in February:
● Milwaukee Public Museum (MPM) digitization manager Alyssa Caywood and Macroscopic Solutions' Mark Smith produced a high-resolution imaging workflow for the Macropod that includes guidelines for both pinned and slide-mounted specimens.
● Julia Colby and PM Kat Sullivan (MPM) updated a workflow produced by the InvertNet TCN for high-throughput slide scanning, including additional instructions for batch image processing and image segmentation in Inselect. During this quarter, 20 slide-scanning trays were assembled and distributed to 5 participating institutions. One more batch of trays still needs to be assembled once collections re-open.
● The MPM digitization team also shared a detailed workflow and user guide for GeoLocate georeferencing. Since many collections do not have an integrated specimen record entry/georeferencing workflow it makes sense for most to delay georeferencing until sufficient data have been digitized. A georeferencing group formed at the workshop and will be led by Petra Sierwald at FMNH. The group will refine best practices and monitor new automation workflows during the project period.
● All major data entry platforms have developed workflows specific to entering biotic association data. Symbiota, Arctos, EMu, Specify, and TaxonWorks are all actively developing modifications to their databases to improve how this data is captured.

TPT Association data working group (section prepared by Katja Seltmann)
● (February 24-25, 2020) Participated in the Terrestrial Parasite Tracker Workshop: Best Practices and Standardization of Digital Data Capture workshop, Field Museum, Chicago. Presentation, Understanding Biotic Interaction Data and Natural History Collections and Interactions Data Group Exercise co-organized with Jen Zaspel, Kat Sullivan and Jorrit Poelen.
● (February 24, 2020) First data publication from TPT at the workshop Terrestrial Parasite Tracker of indexed biotic interactions and review summary of project data. Poelen, Jorrit H., Seltmann, Katja C., & Campbell, Mariel. (2020). Terrestrial Parasite Tracker indexed biotic interactions and review summary (Version 0.1) [Data set]. Zenodo. http://doi.org /10.5281/zenodo.3685365.
● (Ongoing) Evin Dunn (SCAN developer), Neil Cobb and co-PI Seltmann continue to discuss and improve the import mapping and editing functionality of SCAN/Symbiota to

support species interaction and TPT data. This includes creating the capacity to include dwc:associatedOccurrences.
● (March 23, 2020) co-PI Seltmann met with a group of iDigBio, NSF, TPT and other researchers to discuss capacity for biodiversity information science training at universities and in museums. This discussion comes directly from the need to provide training and support for museum collection managers to understand opportunities in projects like TPT, including how to use tools built by iDigBio and TPT to improve data quality.
● (Ongoing) Continue to work with Jorrit Poelen to maintain and document TPT integration profiles and progress through https://www.globalbioticinteractions.org/parasitetracker/
● (Ongoing) co-PI Seltmann had several conversations in this period around the development of another TCN about bees and in collaboration with the USDA funded Bee RCN project. The Extended Bee Network would digitize over 2 million bee specimens, with a focus on bees and agricultural security. Conversations for the new Bee TCN are building off and benefiting from TPT networking, workshops and relationships developed during this project.
● (Ongoing) co-PI Seltmann continues to work with Jorrit Poelen to develop reporting in support of data reports for TPT tracking and research.
● (April 30, 2020) A second data publication was produced for this reporting period. Poelen, Jorrit H., Seltmann, Katja C., & Campbell, Mariel. (2020). Terrestrial Parasite Tracker indexed biotic interactions and review summary (Version 0.2) [Data set]. Zenodo. http://doi.org/10.5281/zenodo.3778773
● (April 30, 2020) Third release of TPT reporting software: Jorrit Poelen, & Katja Seltmann. (2020, April 30). ParasiteTracker/tpt-reporting: Quarterly report (Version 0.0.3). Zenodo. http://doi.org/10.5281/zenodo.3779018
● (April 2020) PI Seltmann, PM Kat Sullivan, and PI Zaspel worked to create a presentation about biotic interactions for a follow up community webinar about biotic interactions, TPT and GloBI. This presentation takes the lessons learned from the TPT workshop and repackages them to help explain how TPT and GloBI work together; various ways collection managers work with interaction data; and how GloBI is interpreting data. http://doi.org/10.5281/zenodo.3780543

Taxonomy
PM Sullivan continued to assemble and distribute taxonomic authority files for the network. This quarter we added files for the sandflies, chiggers, ticks, and additional mite families. The mite, flea, and sandfly taxonomies were standardized and imported into TaxonWorks for demonstration at the workshop in February. PI Zaspel, PM Sullivan, co-PI Jim Boone, co-PI Neal Evenhuis and Bishop Museum informatics met to discuss a standardized file for all Diptera families covered by TPT, which will be filtered to Nearctic and Australian faunal regions. It has become a challenge for many large collections to get started on digitization without North American specific checklists, so we will work on obtaining additional region specific checklists in the next quarter. PI Zaspel met with co-PI Rob Guralnick to discuss using a pre-existing list of available names for NA vertebrate hosts for TPT. PI Zaspel has since hired a postdoctoral researcher from Guralnick's lab to work on formatting vertebrate taxonomy for TPT platforms and then develop a similar resource for NA arthropod parasites.

Identify Gaps in Digitization Areas and Technology:
On March 12th PI Zaspel and PM Sullivan sent out recommendations to the network to assist collections in preparing for shutdowns during the COVID-19 pandemic. It is expected that overall digitization progress will slow during this time, but an increased effort in crowdsourcing helped close the gap for this quarter. The workshop and subsequent follow-up discussions have taken priority during this period, which will allow data providers

to be prepared to return to their collections with more guidance. Beginning in April, PIs Zaspel and Allen and PM Sullivan have disseminated highlights in TPT through a biweekly newsletter, including unique remote setups, adaptation for digitization, and new staff introductions.

At this early stage in the project collections vary widely in terms of digitization progress and ability to continue remote work. Some examples of collection adaptation include:
1. MPM collections staff work remotely with some reduction in support staff hours. While digitization progress will be put on hold for most of this time, improvements to data management, taxonomy, and EMu will be made.
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MPM: 1 postdoctoral researcher hired
PERC: Hired grad student to coordinate digitization (August 2020)
TAMU: Hired BRTC technician
UWSP: 2 interns

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scanning, Inselect, Macropod imaging, specimen data entry, taxonomy management, and GloBI integration are included in these workflows. A full report on the workshop was submitted to iDigBio on March 9. (https://www.idigbio.org/content/tpt-workshop-report-february-2020)

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University of Utah Press Release: https://attheu.utah.edu/facultystaff/discover-parasite-biodiversity/
Deseret News:

https://www.deseret.com/utah/2020/4/16/21222366/university-utah-professor-citizen-scientists-48-hour-we-dig-bio-event-host-parasite-relationships
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Google Analytics

Other Progress (that doesn't fit into the above categories):

Attachment 1
2020-05-06 TPT TCN iDigBio Qreport (1).docx

Attachment 2

Source URL: https://www.idigbio.org/node/564/submission/1628

TPT TCN-- Quarterly Report --February-April 2020

Digitizing collections to trace parasite-host associations and predict the spread of vector-borne disease (TPT)

Assembled by Jen Zaspel, Kat Sullivan, Katja Seltmann, and Julie Allen, May 4, 2020

Progress in Digitization Efforts:

All participating institutions have collections registered on TPT's data portal SCAN (https://scan-bugs.org/portal/). We are working with all data providers to be sure their database platforms can accommodate specimen host association data. We continue to make modifications to Symbiota, Specify, Arctos, and EMu. It was our goal to develop a translation table with controlled vocabularies for host data entry at the TPT data integration workshop in February, and we have since completed this document and delivered it to the TPT network on Friday, May 1st; we are also planning a webinar that will take place June 10th. Currently, TPT has 43,864 records transcribed, 1,115 high resolution images, 21,719 scanned images of slide-mounted specimens, and 428 scanned images of ethanol stored specimens.

Progress by collection for the reporting period:

	Transcribed records	High resolution images	Scanned slides	Scanned vials
MPM	571			
UM	17643	259	263	
UMSP			10895	
CAS	154			
TAMU	6149			
INHS	445	348		43
UWSP			941	
UNH	658			
TOTALS	25620	607	12099	43

SCAN

Collections have begun to deliver data to SCAN either as snapshot collections or live databases. A total of 771 new records were shared on SCAN this quarter, bringing the total number of records on SCAN from TPT collections for target groups to 14,425. As of 5/4/2020 there were 4,166 images on SCAN. In order to adapt to remote digitization environments, some collections are now using SCAN as a crowdsourcing platform by uploading skeletal records with images and having volunteers or digitization technicians transcribe label data from the images directly into the live Symbiota portal. There is a significant number of skeletal records with

images on SCAN that are being transcribed this way or with Notes from Nature that will be integrated into collection databases and SCAN in the near future.

GloBI

Collections provided 18,000 new interaction records to the TPT GloBI page this quarter for a total of 100,000 interactions to date. Also included in the latest Terrestrial Parasite Tracker GloBI report are all biotic interactions from Arctos collections in VertNet and collections in SCAN. The total number of interactions included in the TPT GloBI report to date is 376,671 records. See below for information on the indexed datasets and the published report for this quarter. https://doi.org/10.5281/zenodo.3778773

This report documents that GloBI indexed datasets where TPT data providers are included. The datasets come from various sources (Darwin Core Archive, spreadsheet, etc.). Some of the datasets are very big (e.g., VertNet, SCAN), and include many more collections than just TPT collections.Two reports were published in the last quarter:

February 24 2020, 8 datasets, 10,829,201 reviewed records, 332,968 interactions
April 30 2020, 12 datasets, 11,233,569 reviewed records, 376,671 interactions

Datasets under review (including datasets outside of TPT collections):
- Field Museum of Natural History IPT accessed via https://github.com/globalbioticinteractions/fmnh/archive/83cf7fca9608859f5d9f8bf702e2ab4c5e08af80.zip on 2020-04-29T22:33:45.300Z

- Illinois Natural History Survey Insect Collection accessed via https://github.com/globalbioticinteractions/inhs-insects/archive/81b23b7d7e709f992ce1e43e5e3e71eaf732e5f4.zip on 2020-04-29T22:34:26.094Z
*Added over 11,000 interactions

- Milwaukee Public Museum Biological Collections Data Portal accessed via https://github.com/globalbioticinteractions/mpm/archive/9f2e8359c2c84655e564247f07dd522655f8f7bb.zip on 2020-04-29T22:35:00.885Z

- Symbiota Collections of Arthropods Network (SCAN) accessed via https://github.com/globalbioticinteractions/scan/archive/de508d162f60698d3733199e79cff6a6bc4913ee.zip on 2020-04-29T22:41:14.766Z

- Texas A&M University Insect Collection accessed via https://github.com/globalbioticinteractions/tamuic-ent/archive/fa37da08931044f953d3a6db8df37c440593459c.zip on 2020-04-29T22:41:29.836Z

- University of California Santa Barbara Invertebrate Zoology Collection accessed via https://github.com/globalbioticinteractions/ucsb-izc/archive/01ebc8d7b4d42a7ad5897f531fb6978b1b10220e.zip on 2020-04-29T22:42:08.501Z
*Added about 1,300 interactions

- University of Michigan Museum of Zoology Insect Division. Full Database Export 2020-01-27 provided by Erika Tucker and Barry Oconner. accessed via https://github.com/globalbioticinteractions/ummzi/archive/32fa98582c5f7d56e04e583c787371f0c5bd1b09.zip on 2020-04-29T22:42:26.421Z

- University of New Hampshire Collection of Insects and other Arthropods accessed via https://github.com/globalbioticinteractions/unhc/archive/55737ae08a3df37415b0a384456ce99648b2e306.zip on 2020-04-29T22:42:45.835Z
*Added over 3,000 interactions

- Data were obtained from specimens belonging to the United States National Museum of Natural History (USNM), Smithsonian Institution, Washington DC and digitized by the Walter Reed Biosystematics Unit (WRBU). accessed via https://github.com/globalbioticinteractions/usnmentflea/archive/f7de7a2154f8b965de193926434a28d95f3327fc.zip on 2020-04-29T22:42:51.996Z
*Added 2,700 interactions

- Giraldo-Calderón, G. I., Emrich, S. J., MacCallum, R. M., Maslen, G., Dialynas, E., Topalis, P., … Lawson, D. (2015). VectorBase: an updated bioinformatics resource for invertebrate vectors and other organisms related with human diseases. Nucleic acids research, 43(Database issue), D707–D713. doi:10.1093/nar/gku1117. accessed via https://github.com/globalbioticinteractions/vectorbase/archive/2ce1516d04d5d0e5fb206c0c9b0a15fc31641c86.zip on 2020-04-29T22:42:55.783Z

- https://vertnet.org accessed via https://github.com/globalbioticinteractions/vertnet/archive/6cdf78c1c34bdbf8a736c85ff4de9cdcd4e7b801.zip on 2020-04-29T23:17:37.275Z

*Denotes collections were indexed for the first time this quarter.

Share and Identify Best Practices and Standards (including Lessons Learned):

<u>Workflows</u>
Several workflows were demonstrated and shared with participants at the TPT workshop held at the Field Museum of Natural History in February:

- Milwaukee Public Museum (MPM) digitization manager Alyssa Caywood and Macroscopic Solutions' Mark Smith produced a high-resolution imaging workflow for the Macropod that includes guidelines for both pinned and slide-mounted specimens.

- Julia Colby and PM Kat Sullivan (MPM) updated a workflow produced by the InvertNet TCN for high-throughput slide scanning, including additional instructions for batch image processing and image segmentation in Inselect. During this quarter, 20 slide-scanning trays were assembled and distributed to 5 participating institutions. One more batch of trays still needs to be assembled once collections re-open.
- The MPM digitization team also shared a detailed workflow and user guide for GeoLocate georeferencing. Since many collections do not have an integrated specimen record entry/georeferencing workflow it makes sense for most to delay georeferencing until sufficient data have been digitized. A georeferencing group formed at the workshop and will be led by Petra Sierwald at FMNH. The group will refine best practices and monitor new automation workflows during the project period.
- All major data entry platforms have developed workflows specific to entering biotic association data. Symbiota, Arctos, EMu, Specify, and TaxonWorks are all actively developing modifications to their databases to improve how this data is captured.

TPT Association data working group (section prepared by Katja Seltmann)

- (February 24-25, 2020) Participated in the *Terrestrial Parasite Tracker Workshop: Best Practices and Standardization of Digital Data Capture workshop*, Field Museum, Chicago. Presentation, *Understanding Biotic Interaction Data and Natural History Collections* and Interactions Data Group Exercise co-organized with Jen Zaspel, Kat Sullivan and Jorrit Poelen.
- (February 24, 2020) First data publication from TPT at the workshop Terrestrial Parasite Tracker of indexed biotic interactions and review summary of project data. Poelen, Jorrit H., Seltmann, Katja C., & Campbell, Mariel. (2020). Terrestrial Parasite Tracker indexed biotic interactions and review summary (Version 0.1) [Data set]. Zenodo. http://doi.org/10.5281/zenodo.3685365.
- (Ongoing) Evin Dunn (SCAN developer), Neil Cobb and co-PI Seltmann continue to discuss and improve the import mapping and editing functionality of SCAN/Symbiota to support species interaction and TPT data. This includes creating the capacity to include dwc:associatedOccurrences.
- (March 23, 2020) co-PI Seltmann met with a group of iDigBio, NSF, TPT and other researchers to discuss capacity for biodiversity information science training at universities and in museums. This discussion comes directly from the need to provide training and support for museum collection managers to understand opportunities in projects like TPT, including how to use tools built by iDigBio and TPT to improve data quality.
- (Ongoing) Continue to work with Jorrit Poelen to maintain and document TPT integration profiles and progress through https://www.globalbioticinteractions.org/parasitetracker/
- (Ongoing) co-PI Seltmann had several conversations in this period around the development of another TCN about bees and in collaboration with the USDA funded Bee RCN project. The Extended Bee Network would digitize over 2 million bee specimens, with a focus on bees and agricultural security. Conversations for the new Bee TCN are building off and benefiting from TPT networking, workshops and relationships developed during this project.

- (Ongoing) co-PI Seltmann continues to work with Jorrit Poelen to develop reporting in support of data reports for TPT tracking and research.
- (April 30, 2020) A second data publication was produced for this reporting period. Poelen, Jorrit H., Seltmann, Katja C., & Campbell, Mariel. (2020). Terrestrial Parasite Tracker indexed biotic interactions and review summary (Version 0.2) [Data set]. Zenodo. http://doi.org/10.5281/zenodo.3778773
- (April 30, 2020) Third release of TPT reporting software: Jorrit Poelen, & Katja Seltmann. (2020, April 30). ParasiteTracker/tpt-reporting: Quarterly report (Version 0.0.3). Zenodo. http://doi.org/10.5281/zenodo.3779018
- (April 2020) PI Seltmann, PM Kat Sullivan, and PI Zaspel worked to create a presentation about biotic interactions for a follow up community webinar about biotic interactions, TPT and GloBI. This presentation takes the lessons learned from the TPT workshop and repackages them to help explain how TPT and GloBI work together; various ways collection managers work with interaction data; and how GloBI is interpreting data. http://doi.org/10.5281/zenodo.3780543

Taxonomy

PM Sullivan continued to assemble and distribute taxonomic authority files for the network. This quarter we added files for the sandflies, chiggers, ticks, and additional mite families. The mite, flea, and sandfly taxonomies were standardized and imported into TaxonWorks for demonstration at the workshop in February. PI Zaspel, PM Sullivan, co-PI Jim Boone, co-PI Neal Evenhuis and Bishop Museum informatics met to discuss a standardized file for all Diptera families covered by TPT, which will be filtered to Nearctic and Australian faunal regions. It has become a challenge for many large collections to get started on digitization without North American specific checklists, so we will work on obtaining additional region specific checklists in the next quarter. PI Zaspel met with co-PI Rob Guralnick to discuss using a pre-existing list of available names for NA vertebrate hosts for TPT. PI Zaspel has since hired a postdoctoral researcher from Guralnick's lab to work on formatting vertebrate taxonomy for TPT platforms and then develop a similar resource for NA arthropod parasites.

Identify Gaps in Digitization Areas and Technology:

On March 12th PI Zaspel and PM Sullivan sent out recommendations to the network to assist collections in preparing for shutdowns during the COVID-19 pandemic. It is expected that overall digitization progress will slow during this time, but an increased effort in crowdsourcing helped close the gap for this quarter. The workshop and subsequent follow-up discussions have taken priority during this period, which will allow data providers to be prepared to return to their collections with more guidance. Beginning in April, PIs Zaspel and Allen and PM Sullivan have disseminated highlights in TPT through a biweekly newsletter, including unique remote setups, adaptation for digitization, and new staff introductions.

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Submission #1632

Submission information

Form: TCN Quarterly Progress Report to iDigBio
Submitted by akasameyer
Friday, May 8, 2020 - 18:38
135.180.99.98

TCN Name:
The Pteridological Collections Consortium: An integrative Approach to Pteridophyte Diversity Over the Last 420 Million Years

Person completing the report:
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Progress in Digitization Efforts:
Note: Due to ongoing stay-at-home orders which limit access to workplaces, some project participants were unable to accurately report their institution's progress during this quarter. They will include this information in our next quarterly report.

For extant specimen progress during this reporting period, Pteridophyte Collections Consortium members created skeletal records for 17,047 specimens, fully transcribed 80,057 specimens, imaged 42,799 specimens, and geo-referenced 11,055 specimen records. The total pteridophyte extant specimen progress including work done prior to the start of the grant is 564,986 (34% of goal) skeletal records created, 1,079,967 (65% of goal) extant specimens imaged, 928,697 (56% of goal) extant specimens fully transcribed, and 253,837 (15% of goal) extant specimens geo-referenced.

In the Pteridoportal (http://pteridoportal.org/), we currently have the following data available for extant specimens:
1,463,614 occurrence records
331,794 (23%) georeferenced
1,108,963 (76%) occurrences imaged
901,197 (62%) identified to species

For fossil specimen progress during this reporting period, Pteridophyte Collections Consortium members databased 412 specimens, imaged 2,159 specimens, and geo-referenced 184 specimen records. The total pteridophyte fossil specimen progress including work done prior to the start of the grant is 28,474 (32% of goal) specimens databased, 28,713 (33% of goal) specimens imaged, and 10,238 (11.7% of goal) specimen records geo-referenced.

In the Pteridoportal (http://pteridoportal.org/), we currently have uploaded the UCMP data as a test of the Paleo Module for fossil specimens:
752 occurrence records
101 (13%) georeferenced
1 (0.13%) occurrences imaged

Share and Identify Best Practices and Standards (including Lessons Learned):
Rutgers University has changed their filing practices to include reference sheets for name changes so that if a specimen is looked for under its previously recognized name there is now a sheet to indicate the change and where the specimens are now located. This made it easier for their less experienced interns to file specimens accurately.

Volunteer programs do not need to be a major undertaking. Michigan State University successfully recruited just a few really good volunteers who have made significant contributions to the project using the crowdsourcing module of Symbiota.

At the University of Michigan, two experienced undergraduate technicians have specialized in specific geographical regions (Philippines and Mexico currently) and review transcription by their peers in their selected geographical units. Students pass partially completed datasets of specimen data and images between each other in order to improve data quality and reduce research time needed for accurate transcriptions. Especially in the Philippines, where many old province names have changed, this effort has reduced the number of records with skeletal-only entry for geography and locality fields.

Identify Gaps in Digitization Areas and Technology:
We are still working to make the Paleo Module available to project participants.

Share and Identify Opportunities to Enhance Training Efforts:
An intern at Rutgers University attended an online webinar on Biological and Herbarium Specimen Data hosted by the Morton Arboretum.

Many institutions were able to quickly train staff, students, and volunteers to complete transcription remotely after stay-at-home orders were issued.

Share and Identify Collaborations with other TCNs, Institutions, and Organizations:
Participants are working with the Cretaceous World and Endless Forms TCNs.

Share and Identify Opportunities and Strategies for Sustainability:
Nothing to report at this time.

Share and Identify Education and Outreach (E&O) Activities:
The Sam Noble Museum presented a talk describing the PCC digitization project and recruited volunteers at the Cleveland County Master Gardeners meeting in February 2020.

Prior to closing, the NYBG Herbarium hosted a few public tours of the collections. Tours featured the Digital Imaging Center and highlighted the TCNs, their digitization staff, and the value in preserving and digitizing natural history collections. During the closure, the Herbarium participated in the WeDigBio Lite transcription event (April 16-19) and in an NYBG Earth Day webinar (April 25) to promote NYBG's citizen science projects to online visitors.

The Missouri Botanical Garden held 4 events reaching 353 people:
1) 25 February 2020. World Trade Center, British Delegation, 13 people
2) 28 February 2020, Missouri Department of Natural Resources, Cape Girardeau Nature Center, 6 people
3) 5 March 2020, Orchid Nights (Garden Members, general public), 317 people
4) 6 March 2020, Poplar Bluff, Missouri, Gardeners Group, 17 people.

The Botanical Research Institute of Texas created an exhibition for the general public at the BRIT herbarium and wrote two blogs: http://brit.org/cabinet-curiosities/muir, http://www.brit.org/cabinet-curiosities/ferns

Michigan State University has posted on Twitter about interesting specimens or collectors. A couple of these resulted in new additions to Natural History Specimen tracking website https://bloodhound-tracker.net after Siobhan Leachman saw the posts.

Google Analytics

Other Progress (that doesn't fit into the above categories):
Progress continues to be made on the Pteridoportal's Paleo Module. As of 4/30/2020 Ed Gilbert completed the fossil data entry form, worked out some of the existing bugs, and uploaded 752 fossil specimen records for UCMP. Erwin is updating the PCC website to provide guidance for entering data into the paleo fields.

Effects of COVID-19 on project progress: The COVID-19 pandemic has reduced grant progress for the project, however participants continue to perform work on the project to the best of their ability. Almost all project staff have been unable to access their workspaces since mid-March. Imaging has completely stopped at all institutions. Some institutions are unable to complete any work at this time, while others are able to have staff, students, and volunteers work remotely on transcription and geo-referencing. Some institutions have expressed concern about their ability to maintain social distancing at their imaging stations, and may not be able to re-open at full capacity while social distancing orders are in effect.

Attachment 1

Attachment 2

Source URL: https://www.idigbio.org/node/564/submission/1632

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Submission #1627

Submission information

Form: TCN Quarterly Progress Report to iDigBio
Submitted by nyeung
Tuesday, May 5, 2020 - 21:50
98.151.79.189

TCN Name:
PILSBRY

Person completing the report:
nyeung@hawaii.edu

Progress in Digitization Efforts:
About 4000 lots (~28,000 specimens) were digitized including 15 ledgers and linked to records. Additionally 400 bibliocards containing 1200 Pacific island land snail names were linked to literature for the taxonomic authority file.

Share and Identify Best Practices and Standards (including Lessons Learned):
Due to the COV ID-19 pandemic, all institutions were closed in March 2020. Staff have been working at home with limited access to the collections. At home, personnel have been georeferencing, cleaning up specimen data and linking records.

Identify Gaps in Digitization Areas and Technology:
No specimen images are being generated as access to collections are limited. Due to slower out-of-campus internet speed and unstable connectivity, productivity has been impeded. Additionally, in November, Bishop Museum was hit by ransomware but data are safe. In February, Bishop Museum began to update servers, hardware and software. However equipment was stalled when China shutdown production due to COVID19. We are hopeful in getting servers up in May to continue developing the online portal for data sharing among collaborators.

Share and Identify Opportunities to Enhance Training Efforts:
Through cloud based data sharing, personnel has been slowly continuing their digitization efforts. Via zoom and other video conferencing software, we have been able to continue to provide some taxonomic training to participants.

Share and Identify Collaborations with other TCNs, Institutions, and Organizations:
Other than communications with members of the PILS TCN, no new collaborations have been established.

Share and Identify Opportunities and Strategies for Sustainability:
We are developing online tools to hopefully allow collaboration and sharing of data.

Share and Identify Education and Outreach (E&O) Activities:
4 volunteers, 3 undergraduates, 2 post-baccalaureate, and 2 graduate students were recruited to assist in the digitization activities. Four individuals are native Hawaiian and one is a Philippine American. Several science festivals and outreach activities were scheduled for the spring but due to COVID19, all were canceled. Currently, all spring and summer internship programs are canceled.

Google Analytics

Other Progress (that doesn't fit into the above categories):

Attachment 1

Attachment 2

Source URL: https://www.idigbio.org/node/564/submission/1627