Eli Agbayani <eagbayani@eol.org>

method: parent basal values

25 messages

Eli Agbayani <eagbayani@eol.org> Mon, Oct 1, 2018 at 10:20 AM
To: Jen Hammock <jen.hammock@gmail.com>

Hi Jen, this is for method: basal values parent.
You sent the attachment last Sep 19.
I wasn't able to continue because of other things we did.
Anyway I'm now working on it.

I was able to do your first 2 sections:
- "combined values from the original records (all REC records of children):,"
- de-duplicated tips:

But I got lost how you generated the next section: 'tree'. What are your working data for the 'tree' section?

Once I figure 'tree', I should be able to do the other sections. I think.

Thanks,
Eli

habitat for 7662.txt
22K

Jen Hammock <jen.hammock@gmail.com> Mon, Oct 1, 2018 at 11:45 AM
To: Eli Agbayani <eagbayani@eol.org>

OK, let me see...

The section "Jen's human readable version" was helpful for me, because I did it by hand, but you can probably ignore it. What I did to construct the tree was to imitate what I imagine you did to construct the tree for the regular basal values method. Actually, I think the safest thing to do is this: ignoring the rest of my example, (which may contain errors) once you have the list of combined REP records and the list of deduplicated tips, treat the example just like a regular basal values process. So construct the tree, remove the magic deletable nodes, find set 1, find set 2, etc.

Does that make sense?

Jen

[Quoted text hidden]

Eli Agbayani <eagbayani@eol.org> Mon, Oct 1, 2018 at 3:02 PM

To: Jen Hammock <jen.hammock@gmail.com>

Hi Jen, please see attached.
The bottleneck is the initial input to build the "initial shared values ancestry tree: n=33".
As input I used the deduplicated tips (n=35). Everything after it is automatic since we finished the 'method basal values' already.
But if my input to the initial tree is wrong then everything is wrong.

I'm wondering why I have so much less in my initial tree compared to yours.
I may have used the wrong input.

Thanks
Eli

PS: FYI. The time when you first assembled the test case (habitat for 7662.txt) we don't have yet the two new delete steps in basal values. Thus the slight discrepancy in the initial deduplicated tips (32 old vs 35 new)

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habitat for 7662 test.txt
28K

Jen Hammock <jen.hammock@gmail.com> Mon, Oct 1, 2018 at 4:41 PM
To: Eli Agbayani <eagbayani@eol.org>

Thanks, Eli!

I'm still parsing, but I've found a few discrepancies that I can describe:

in your initial shared values ancestry tree, 16 values are listed as singlets. Five of them seem to have ancestors that already appear elsewhere in the tree:

ancestor	tip
http://purl.obolibrary.org/obo/ENVO_00002030	http://purl.obolibrary.org/obo/ENVO_00000020
http://purl.obolibrary.org/obo/ENVO_00000002	http://purl.obolibrary.org/obo/ENVO_00000078
http://purl.obolibrary.org/obo/ENVO_00000446	http://purl.obolibrary.org/obo/ENVO_00000081
http://purl.obolibrary.org/obo/ENVO_00000446	http://purl.obolibrary.org/obo/ENVO_00000316
http://purl.obolibrary.org/obo/ENVO_00000447	http://purl.obolibrary.org/obo/ENVO_00000316
http://eol.org/schema/terms/tropicalOrSubtropical	http://purl.obolibrary.org/obo/ENVO_01000204

I am also reminded I should update your parent-child source files for these, but that's not your problem :)

Jen
[Quoted text hidden]

Jen Hammock <jen.hammock@gmail.com> Mon, Oct 1, 2018 at 5:10 PM
To: Eli Agbayani <eagbayani@eol.org>

I think the other significant difference between my hierarchy and yours, apart from a fistful of errors in mine, is that in your hierarchy, each node can have only one immediate parent. If that's a constraint you can remove, it's worth doing. It may cause complications in counts and duplication which we'll then have to deal with, but multiple lines of ancestry are important for the basal values methods.

Note that for the taxon summary methods, the hierarchy should remain strictly single parent. Habitats and geographic locations can have several parents; taxa cannot.

Thanks!

Jen
[Quoted text hidden]

Eli Agbayani <eagbayani@eol.org> Tue, Oct 2, 2018 at 11:56 AM
To: Jen Hammock <jen.hammock@gmail.com>

Hi Jen, for a slightly (or entirely) different approach altogether.
Just testing the waters here.
Since in our regular basal values method, our input are records directly from the Traits.csv for the taxon in question.
And that more ore less the 'basal values' process has been tested and maybe almost final.

For the 'parent basal values' method, can we just use the same process.
But here we will get all the records from Traits.csv for the children of the taxon in question.
Cramp all those records and feed it to our regular basal values method process.
Will that work? Anyway I tried that and attached is the result.

This way we won't tweak anything anymore.
Thanks,
Eli

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use_all_recs_from_children.txt
51K

Jen Hammock <jen.hammock@gmail.com> Wed, Oct 3, 2018 at 2:19 PM
To: Eli Agbayani <eagbayani@eol.org>

Hi, Eli!

Finally getting back to you about basal values. This one is complicated.

First of all, I like your approach. Let's have just one method, for all the records of a species, or for a higher taxon... ok, let's try all the records of all the children. I was worried about "undesireable" records and hoped to leave them out, but those should probably be dealt with the same way in both cases, once we've got some results to examine.

Next: I think there's a problem with the tree construction method, based on the example you gave me. This

should apply the same to both cases now- species or higher taxa.

I've attached the list of root nodes you found for 7662 and /habitat, along with the ancestry which some of them turn out to share, per the ancestry file at https://opendata.eol.org/dataset/terms-relationships/resource/c5ff5c62-a2ef-44be-9f59-88cd99bc8af2. I suspect the reason you didn't detect these shared ancestors has to do with the fact that this hierarchy can have multiple parents for any node, which you haven't had to parse before- but I'm not sure.

Let me know what you make of this. If it suggests a tweak to the tress builder, go ahead and try it and we can examine those results.

Thanks!

Jen

P.S. I am also doing more revisions on that ancestry file, but I tried not to use any of the new information in the attached sample, so you can compare directly with your previous results. Sorry for the confusion!

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shared ancestry.csv
5K

Jen Hammock <jen.hammock@gmail.com> Wed, Oct 3, 2018 at 3:50 PM
To: Eli Agbayani <eagbayani@eol.org>

also for the basal values method:

one more term for the DELETE ALONG WITH CHILDREN list: http://purl.obolibrary.org/obo/ENVO_00000358

and one for the DELETE BUT LEAVE THE CHILDREN list: http://purl.obolibrary.org/obo/ENVO_00001995

thanks!

Jen
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Jen Hammock <jen.hammock@gmail.com> Wed, Oct 3, 2018 at 3:54 PM
To: Eli Agbayani <eagbayani@eol.org>

oops, I forgot

yet one more term for the DELETE ALONG WITH CHILDREN list: http://purl.obolibrary.org/obo/ENVO_00000144

ok, I'm probably done for awhile :)
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Eli Agbayani <eagbayani@eol.org> Thu, Oct 4, 2018 at 2:08 AM
To: Jen Hammock <jen.hammock@gmail.com>

Hi Jen,
Oops I've not checked/used if there are latest versions of the three files we're using for sometime.
- habitat-parent-child.csv
- geoterms-parent-child.csv
- preferredsynonym-aug-16-1-2-3.csv

I will now assume whatever versions are in here is latest and will use it automatically.

I will give you feedback soon on your latest email.

Thanks,
Eli

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Eli Agbayani <eagbayani@eol.org> Thu, Oct 4, 2018 at 8:34 AM
To: Jen Hammock <jen.hammock@gmail.com>

Hi Jen,
Please see attached updated version. For review.

I also used these latest versions now:
preferred synonym = "https://opendata.eol.org/dataset/237b69b7-8aba-4cc4-8223-c433d700a1cc/resource/41f7fed1-3dc1-44d7-bbe5-6104156d1c1e/download/preferredsynonym-sept-27.csv"
habitat parent child = "https://opendata.eol.org/dataset/237b69b7-8aba-4cc4-8223-c433d700a1cc/resource/c5ff5c62-a2ef-44be-9f59-88cd99bc8af2/download/habitat-parent-child-6-1.csv"
geoterms parent child = "https://opendata.eol.org/dataset/237b69b7-8aba-4cc4-8223-c433d700a1cc/resource/e1dcb51b-9a03-4069-b5bf-e18b6bc15798/download/geoterms-parent-child-1.csv"

One notable change I did was, when we did the two new deletion steps. I did not check the roots that came our from those steps if they are actually roots based on our ancestry file.
I've now done that.

Anyway, will be waiting for your feedback.
Thanks,
Eli

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all_recs_from_children_v2.txt
49K

Jen Hammock <jen.hammock@gmail.com> Thu, Oct 4, 2018 at 9:55 AM
To: Eli Agbayani <eagbayani@eol.org>

I'm following a lot of it now; I think we're getting close. There's something still off about the behavior of "DELETE ROOTS BUT KEEP CHILDREN". When these roots were deleted,

```
[0] => http://purl.obolibrary.org/obo/ENVO_00001995
[1] => http://purl.obolibrary.org/obo/ENVO_00002030
[2] => http://purl.obolibrary.org/obo/ENVO_01001305
```

some of their children were left. Most of the *immediate* children (not children-of-children, just the nodes directly connected to 1995, 2030, or 1305) should have become roots, eg: with 2030 out of the way, 0447 should have become a root, as it no longer has a parent in the trimmed shared ancestry tree.

If you can find the newly promoted roots and adjust the tree accordingly, I think this might be finished :)

THanks!

Jen
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Eli Agbayani <eagbayani@eol.org> Thu, Oct 4, 2018 at 11:11 AM
To: Jen Hammock <jen.hammock@gmail.com>

Hi Jen, thanks.
Please check attached.
Thanks,
Eli

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all_recs_from_children_v3.txt
51K

Jen Hammock <jen.hammock@gmail.com> Thu, Oct 4, 2018 at 3:12 PM
To: Eli Agbayani <eagbayani@eol.org>

Thanks, Eli!

Very close! But I think you are still not capturing multiple parents in your tree building. (By multiple parents I mean this.) I see this in two remaining issues:

There are a few of the new roots you found which should not be roots, because they still have shared ancestors with other nodes (i.e. the deleted root node was not their only parent.)

parent	child
http://purl.obolibrary.org/obo/ENVO_00000873	http://purl.obolibrary.org/obo/ENVO_00000025
http://purl.obolibrary.org/obo/ENVO_00000447	http://purl.obolibrary.org/obo/ENVO_00000032
http://purl.obolibrary.org/obo/ENVO_00000873	http://purl.obolibrary.org/obo/ENVO_00000033
http://purl.obolibrary.org/obo/ENVO_01001125	http://purl.obolibrary.org/obo/ENVO_00002200
http://purl.obolibrary.org/obo/ENVO_00000447	http://purl.obolibrary.org/obo/ENVO_01000020

Also, there's a parent that was never included in your tree, though it was shared by several of the original records:

http://eol.org/schema/terms/tropicalOrSubtropical http://eol.org/schema/terms/tropical_and_subtropical_coniferous_forests
http://eol.org/schema/terms/tropicalOrSubtropical http://eol.org/schema/terms/tropical_and_subtropical_dry_broadleaf_forests
http://eol.org/schema/terms/tropicalOrSubtropical http://eol.org/schema/terms/tropical_and_subtropical_moist_broadleaf_forests
http://eol.org/schema/terms/tropicalOrSubtropical http://eol.org/schema/terms/tropical_and_subtropical_grasslands_savannas_and_shrublands

Hang in there! Let me know if this is too mysterious.

Jen
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Eli Agbayani <eagbayani@eol.org> Fri, Oct 5, 2018 at 2:42 AM
To: Jen Hammock <jen.hammock@gmail.com>

Hi Jen, please see below.

Given:
```
(
   [Selected] => Array
      (
         [0] => http://purl.obolibrary.org/obo/ENVO_00000067
         [1] => http://purl.obolibrary.org/obo/ENVO_00000086
         [2] => http://purl.obolibrary.org/obo/ENVO_00000220
         [3] => http://purl.obolibrary.org/obo/ENVO_00000304
         [4] => http://purl.obolibrary.org/obo/ENVO_00000446
         [5] => http://purl.obolibrary.org/obo/ENVO_00002000
         [6] => http://purl.obolibrary.org/obo/ENVO_01000206
         [7] => http://purl.obolibrary.org/obo/ENVO_01001125
         [8] => http://purl.obolibrary.org/obo/ENVO_00000025
         [9] => http://purl.obolibrary.org/obo/ENVO_00000032
         [10] => http://purl.obolibrary.org/obo/ENVO_00000033
         [11] => http://purl.obolibrary.org/obo/ENVO_00000043
         [12] => http://purl.obolibrary.org/obo/ENVO_00000447
         [13] => http://purl.obolibrary.org/obo/ENVO_00002200
         [14] => http://purl.obolibrary.org/obo/ENVO_01000020
      )
   [label] => REP
)
```

[http://purl.obolibrary.org/obo/ENVO_00000067]: -- no parent
[http://purl.obolibrary.org/obo/ENVO_00000086]: -- no parent
[http://purl.obolibrary.org/obo/ENVO_00000220]: -- no parent
[http://purl.obolibrary.org/obo/ENVO_00000304]: -- no parent
[http://purl.obolibrary.org/obo/ENVO_00000446]: -- no parent
[http://purl.obolibrary.org/obo/ENVO_00002000]: -- no parent
[http://purl.obolibrary.org/obo/ENVO_01000206]: -- no parent

[http://purl.obolibrary.org/obo/ENVO_01001125]: -- no parent
[http://purl.obolibrary.org/obo/ENVO_00000025]: has parents
(
[0] => http://purl.obolibrary.org/obo/ENVO_00000002
[1] => http://purl.obolibrary.org/obo/ENVO_00000873
[2] => http://purl.obolibrary.org/obo/ENVO_00002030
)

[http://purl.obolibrary.org/obo/ENVO_00000032]: has parents
(
[0] => http://purl.obolibrary.org/obo/ENVO_00000447
[1] => http://purl.obolibrary.org/obo/ENVO_00002030
[2] => http://purl.obolibrary.org/obo/ENVO_02000049
)

[http://purl.obolibrary.org/obo/ENVO_00000033]: has parents
(
[0] => http://purl.obolibrary.org/obo/ENVO_00000873
[1] => http://purl.obolibrary.org/obo/ENVO_00002030
)

[http://purl.obolibrary.org/obo/ENVO_00000043]: has parents
(
[0] => http://purl.obolibrary.org/obo/ENVO_00002030
[1] => http://purl.obolibrary.org/obo/ENVO_01001305
)

[http://purl.obolibrary.org/obo/ENVO_00000447]: has parents
(
[0] => http://purl.obolibrary.org/obo/ENVO_00002030
[1] => http://purl.obolibrary.org/obo/ENVO_00002227
)

[http://purl.obolibrary.org/obo/ENVO_00002200]: has parents
(
[0] => http://purl.obolibrary.org/obo/ENVO_00000447
[1] => http://purl.obolibrary.org/obo/ENVO_00002030
[2] => http://purl.obolibrary.org/obo/ENVO_01001125
)

[http://purl.obolibrary.org/obo/ENVO_01000020]: has parents
(
[0] => http://purl.obolibrary.org/obo/ENVO_00000447
[1] => http://purl.obolibrary.org/obo/ENVO_00002030
[2] => http://purl.obolibrary.org/obo/ENVO_02000049
)

I understand when you said for these five:
"There are a few of the new roots you found which should not be roots, because they still have shared ancestors with other nodes (i.e. the deleted root node was not their only parent.)"

http://purl.obolibrary.org/obo/ENVO_00000873 http://purl.obolibrary.org/obo/ENVO_00000025

http://purl.obolibrary.org/obo/ENVO_00000447	http://purl.obolibrary.org/obo/ENVO_00000032
http://purl.obolibrary.org/obo/ENVO_00000873	http://purl.obolibrary.org/obo/ENVO_00000033
http://purl.obolibrary.org/obo/ENVO_01001125	http://purl.obolibrary.org/obo/ENVO_00002200
http://purl.obolibrary.org/obo/ENVO_00000447	http://purl.obolibrary.org/obo/ENVO_01000020

How about ENVO_00000043 and ENVO_00000447 ?
You mentioned:
"some of their children were left. Most of the *immediate* children (not children-of-children, just the nodes directly connected to 1995, 2030, or 1305) should have become roots, eg: with 2030 out of the way, 0447 should have become a root, as it no longer has a parent in the trimmed shared ancestry tree."

e.g. ENVO_00000447 has another parent (ENVO_00002227). So ENVO_00000447 cannot become a root. Is that correct?

e.g. ENVO_00000043 is a different case. Both of its parents are in our delete list for DELETE, BUT KEEP THE CHILDREN ('http://purl.obolibrary.org/obo/ENVO_01001305', 'http://purl.obolibrary.org/obo/ENVO_00002030', 'http://purl.obolibrary.org/obo/ENVO_01000687')
So does this mean that ENVO_00000043 can become a root.

Thanks for your patience Jen.
Eli

[Quoted text hidden]

Jen Hammock <jen.hammock@gmail.com> Fri, Oct 5, 2018 at 9:46 AM
To: Eli Agbayani <eagbayani@eol.org>

Yes, I think we're getting somewhere now.

You're right about ENVO_00000447. I just added that parent-child relationship to the file yesterday, and forgot. However: please add ENVO_00002227 to the DELETE, BUT KEEP THE CHILDREN list. ENVO_00002227 is not a very informative value.

and yes, ENVO_00000043 can become a root. If all the parents were on the DELETE, BUT KEEP THE CHILDREN list, that works.

THanks!!

Jen

[Quoted text hidden]

Eli Agbayani <eagbayani@eol.org> Fri, Oct 5, 2018 at 12:53 PM
To: Jen Hammock <jen.hammock@gmail.com>

Hi Jen, please see attached how we chose the parent for the 4 terms:

http://eol.org/schema/terms/tropical_and_subtropical_coniferous_forests

http://eol.org/schema/terms/tropical_and_subtropical_dry_broadleaf_forests
http://eol.org/schema/terms/tropical_and_subtropical_moist_broadleaf_forests
http://eol.org/schema/terms/tropical_and_subtropical_grasslands_savannas_and_shrublands

Maybe our current criteria for selecting the parent works only for species basal values and not for higher rank basal values.
Maybe we need to have a different criteria for the latter.
Thanks,
Eli

On Fri, Oct 5, 2018 at 11:08 AM, Eli Agbayani <eagbayani@eol.org> wrote:

> Nice, thanks Jen!
>
> I'm now working on the 2nd issue you reported:
>
> Also, there's a parent that was never included in your tree, though it was shared by several of the original records:
> http://eol.org/schema/terms/tropicalOrSubtropical http://eol.org/schema/terms/tropical_and_subtropical_coniferous_forests
> http://eol.org/schema/terms/tropicalOrSubtropical http://eol.org/schema/terms/tropical_and_subtropical_dry_broadleaf_forests
> http://eol.org/schema/terms/tropicalOrSubtropical http://eol.org/schema/terms/tropical_and_subtropical_moist_broadleaf_forests
> http://eol.org/schema/terms/tropicalOrSubtropical http://eol.org/schema/terms/tropical_and_subtropical_grasslands_savannas_and_shrublands
>
> Regards,
> Eli
>
> [Quoted text hidden]

choosing_parent.txt
6K

Jen Hammock <jen.hammock@gmail.com> Fri, Oct 5, 2018 at 1:26 PM
To: Eli Agbayani <eagbayani@eol.org>

Sorry, Eli, I'm not sure what "ancestor_ranking_preferred: Array" is. A few of those terms look like ancestors of http://eol.org/schema/terms/tropical_and_subtropical_moist_broadleaf_forests, but most of them look unrelated to it. Can you clarify?

Jen
[Quoted text hidden]

Eli Agbayani <eagbayani@eol.org> Sat, Oct 6, 2018 at 4:54 AM
To: Jen Hammock <jen.hammock@gmail.com>

Hi Jen, the 'ancestor_ranking_preferred' is just my term and it actually has scores. See below.
Array
(
[http://purl.obolibrary.org/obo/ENVO_01000179] => 23
[http://purl.obolibrary.org/obo/ENVO_01000175] => 20
[http://purl.obolibrary.org/obo/ENVO_01000174] => 19
[http://purl.obolibrary.org/obo/ENVO_01000180] => 13
[http://purl.obolibrary.org/obo/ENVO_01000177] => 12
[http://purl.obolibrary.org/obo/ENVO_01000178] => 8
[http://purl.obolibrary.org/obo/ENVO_01000253] => 6
[http://purl.obolibrary.org/obo/ENVO_01000252] => 5
[http://purl.obolibrary.org/obo/ENVO_01000687] => 4
[http://purl.obolibrary.org/obo/ENVO_01000181] => 3
[http://purl.obolibrary.org/obo/ENVO_00000077] => 3
[http://purl.obolibrary.org/obo/ENVO_00002030] => 2
[http://purl.obolibrary.org/obo/ENVO_01000022] => 1
)
How was it scored? In our case given the no. of terms = 435 (original records).
435 because it came from the 5 children of 7662.
First, I get the preferred_names for each of the 435 using our file (preferredsynonym-sept-27.csv).
And I add a point to each preferred name for its every occurrence among the 435. That's how I got the scores.

So now, e.g. a term in question that's looking for a parent: [http://eol.org/schema/terms/tropical_and_subtropical_coniferous_forests] :

For this term -> There is NO preferred term
So I check the immediate parents.

Since There are 3 immediate parent(s) for term in question:
Array
(
[0] => http://eol.org/schema/terms/tropicalOrSubtropical
[1] => http://purl.obolibrary.org/obo/ENVO_00000109
[2] => http://purl.obolibrary.org/obo/ENVO_01000174
)

So I'm now inclined to go use the 'ancestor_ranking_preferred' to choose the parent from 3 contenders.
And based on ranking we chose: [http://purl.obolibrary.org/obo/ENVO_01000174] => 19 points

*I normally don't go to 'ancestor_ranking_preferred' if there is only 1 immediate parent.
*And also it goes to a different path if term in question has a preferred term. This case example doesn't.

Thanks,
Eli

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Jen Hammock <jen.hammock@gmail.com> Sat, Oct 6, 2018 at 9:58 AM
To: Eli Agbayani <eagbayani@eol.org>

Ah, thanks for the clarification. I like that they are handled differently if there's a preferred term vs. a regular parent. The thing is, if there are multiple immediate parents, all lines of ancestry should be built. The same goes for if any of the parents have multiple parents. I don't want it to be pruned into a single parent tree. Sorry, I should have been explicit about that.

Does that make sense? And does it throw a monkeywrench into later calculations?

Jen
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Eli Agbayani <eagbayani@eol.org> Sat, Oct 6, 2018 at 11:08 AM
To: Jen Hammock <jen.hammock@gmail.com>

Your suggestion makes sense Jen.
So in my example: we will add these pairs to our "initial shared values ancestry tree"

http://eol.org/schema/terms/tropicalOrSubtropical , http://eol.org/schema/terms/tropical_and_subtropical_coniferous_forests
http://purl.obolibrary.org/obo/ENVO_00000109 , http://eol.org/schema/terms/tropical_and_subtropical_coniferous_forests
http://purl.obolibrary.org/obo/ENVO_01000174 , http://eol.org/schema/terms/tropical_and_subtropical_coniferous_forests

Is that correct?

Also for this another example where term in question has a preferred term:

term in question: [http://purl.obolibrary.org/obo/ENVO_00000106]

There are preferred term(s):
Array
(
[0] => http://purl.obolibrary.org/obo/ENVO_01000177
)

parent(s) of http://purl.obolibrary.org/obo/ENVO_01000177:
Array
(
[0] => http://purl.obolibrary.org/obo/ENVO_00000446
[1] => http://purl.obolibrary.org/obo/ENVO_01001305
)

What pairs are created here?

Thanks,
Eli

Thanks,
Eli

[Quoted text hidden]

Jen Hammock <jen.hammock@gmail.com> Sat, Oct 6, 2018 at 11:13 AM
To: Eli Agbayani <eagbayani@eol.org>

Good examples, Eli. Yes, I'm with you on that first one, and for the second,

http://purl.obolibrary.org/obo/ENVO_01000177 , http://purl.obolibrary.org/obo/ENVO_00000106
http://purl.obolibrary.org/obo/ENVO_00000446 , http://purl.obolibrary.org/obo/ENVO_01000177
http://purl.obolibrary.org/obo/ENVO_01001305 , http://purl.obolibrary.org/obo/ENVO_01000177

Does that scan ok?

Jen
[Quoted text hidden]

Eli Agbayani <eagbayani@eol.org> Sat, Oct 6, 2018 at 11:33 AM
To: Jen Hammock <jen.hammock@gmail.com>

Great, thanks Jen.
Yes that looks good.

[Quoted text hidden]

Eli Agbayani <eagbayani@eol.org> Sat, Oct 6, 2018 at 1:10 PM
To: Jen Hammock <jen.hammock@gmail.com>

Hi Jen, attached latest version of 'parent basal values' for 7662.
For review.
Thanks,
Eli

[Quoted text hidden]

all_recs_from_children_v4.txt
65K

Jen Hammock <jen.hammock@gmail.com> Sat, Oct 6, 2018 at 1:40 PM
To: Eli Agbayani <eagbayani@eol.org>

That is a long tree :) Yes, I think this is as expected. I have some work to do cleaning up our habitat resources, and I may update your relationships files again. I'll let you know if I do. In the long run we'll probably update these summary resources every so often, maybe a couple of times per year. Meanwhile, the process looks good!

Jen

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