

[11. July. 2012]

I entered data into Arctos for specimens for which I had gotten data yesterday at Dominique's.

I scanned my previous lab notebook and fiddled with including citations from it in Arctos.

[12. July. 2012]

I performed safety checks in the lab.

I started to try to put together Dominique's database, but I found that I need to use Dominique's computer to open up the Filmaker Pro files.

I added barcode labels and scanned in the rest of the Hymenoptera to be sent out for DNA barcoding.

[KNWR 4384] is a ♀ Sphaerocerid pretty much exactly matching [KNWR 6152], so I am labeling it "Cumomyia pilosa?".

The culture of *Basonnetia* I have been keeping has been doing well. They have almost completely consumed the batch of dead insects I had put in there approximately two weeks ago. All that remains are some wings and most of the exoskeleton of one large Muscid, but some of the exoskeleton has been eaten away. There are some dark, wingless individuals that run faster than the winged females. These may be males.

[13. July 2012]

I spent the morning moving all of the drawers and cabinets of the collection. Toby helped me move the old photo drawer to the brook, then I brought in an old vial storage cabinet that I had gotten from UAM and which I had been storing at home.

New positions of drawers in cabinets:

<u>drawer</u>	<u>cabinet</u>
KNURC18	KNURC3
8	
40	
41	
87	KNURC7
93	
85	
45	
44	
47	
73	5

Also, UAM cabinets C06044 and C06039 are now in our specimen room, KNURC2.

I took photos of [KNUR 8499], a Xylene.

OSHA stopped by for an inspection today, so I spent part of the afternoon cleaning up the lab. They didn't visit the lab, though.

16. July. 2012

I am putting barcode labels on the rest of the Cornell drawers in the lab. cabinet

cabinet	drawer
KNMRC3	KNMRC 101-107
KNMRC7	108-113
6	114-119
5	120

I created drawer series 121-148 and printed labels

cabinet	drawer
KNMRC5	KNMRC 121-124
C06039	125-129
C06044	130-138
KNMRC4	139-148

KNMRC149 is now the herbarium cabinet.

I have 89 specimens selected to go out for PNA barcoding. I need 8 more to make 97.

7791 Ichneumoninae, same as 7790 and 7765.

7511	Ichneumonidae
7248	"
7247	"
7500	"
7967	"

NA	Ichneumonidae
NA	"

I took care of the mail run today.

I spent the latter part of the day sorting 211 REA specimens into the collection.

I worked more on sorting specimens into

17. July. 2012

I worked more on sorting specimens into the collection.

Now I am sorting labeled specimens.

7827	Anthomyiidae	"
7826	Anthomyiidae	"
7825	Scutophagidae	-
7824	Pteromalidae	-
7819	Cicadellidae	"
7817	Lygaeidae	✓
7998	Beccetidae	-
7997	Lepididae	"
7996	Dryomyzidae	"
7995	Scutophagidae	✓

- 7994 - Scelionidae ✓
 7993 - Tenthredinidae ✓
 7992 - Muscidae ✓
 7991 - Diapriidae ✓
 7990 - Dryomyzidae ✓
 7989 - Megaspilidae ✓
 7988 - Eupilidae ✓
 7987 - Tenthredinidae ✓
 7986 - Cynipidae ✓

I assembled 24 small unit trays.

18 July 2012

I started work revising the checklist and key to the braconids of North America. I ended up needing to reinstall TextLive.

I looked up some literature on our two cottonwood spp. or subspecies. *Aspicampa*
 I walked outside and gathered adults from a ♀ on the ski trail. It is much more like *P. balsamifera* than *P. trichocarpa*.

I am trying to key KNUR 7996 using Steyskal (1957), p. 55 1 → no
 This key to *Dryomyza* in MND.

Steyskal (1957), p. 57 1 or (1) → 7 or (2) → 13 or (14) setosa? KNUR 7990 is the same. Both are ♂♂. KNUR 3856 is the same.

19 July 2012

I worked on completing my FFSST training.

I worked some on the key to the braconids of North America.

John asked me to work with Pam on the website, in particular with publications. I started on this.

20 July 2012

I worked on the website literature assignment from John until noon. Kim is not feeling well, so I will try to work at home.

23. July. 2012

I spent most of the day finishing the literature list for the website.

I am doing some sorting.

KMUR 7985 is Muscidae

7984 Anthomyiidae ♂

7983 Diapriidae

7982 ♀ This looks like

Asteriidae, but is different than what I have in the collection. Keying using MWD, p. 900 1 → 2 → 3 → No, it is Clusiidae p. 857 1 → Clusiodes. Using the Lucid Key of Lonsdale, et al. (2011), I keyed this to Clusiodes melanostomus-complex.

24. July. 2012

KMUR 7981 is Chalcididae, Pteromalidae?
♂ ✓

7980 is Ichneumonidae. ✓

7979 looks like Muscidae, but it is difficult to discern the end of the anal vein. ✓

7978 is Tenthredinidae ✓

7977 is Proctotrupidae ✓

7976 Diapriidae ✓

7975 Ichneumonidae ✓

7974 Tenthredinidae ✓

7973 Ichneumonidae ✓

7972 Scathophagidae ✓

7971 Empidoidea ✓

8117 Chalcididae ✓

8116 Syrphidae ✓

8115 Scathophagidae ✓

8114 Syrphidae ✓

8113 Empidoidea ✓

8112 Muscidae ✓

8111 Muscidae ✓

8086 Anthomyiidae ✓

8104 Muscidae ✓

8098 Syrphidae ✓

8103 Tipulidae ✓

8102 Ichneumonidae ✓

8101 Empidoidea ✓

8097 is Acalyptidae, one which I am

having trouble with. Keying, using

MWD, p. 105 72 → 73 → 74 → 75 → 76 → 77 → 78 → 81 →

108 → 112 → 116 → 117 → Psilidae ✓

8082 Anthomyiidae ✓

8081 Muscidae ✓

8079 Cicadellidae ✓

8076 Pipunculidae ✓

8080 Thoridae ✓

- 8075 Sciuridae ✓
 8074 Chloropidae ✓
 7150 Empid ✓
 8330 Anthomyiidae ✓
 8329 Ichneumonidae ✓
 8328 Anthomyiidae ✓
 8337 Ceratopogonidae ✓
 8334 Anisopodidae ✓
 8336 Tephritidae? Keying using MNP,
 p. 1075 1→3→4→Helomyzella? No.
 Helomyzidae? p. 975 1→4→6→9→
Borboropsis? I could not see thoracic
 pits. Leaving it as Helomyzidae ✓
 8333 Lauxaniidae ✓
 8332 Lauxaniidae ✓
 8335 Diapriidae ✓
 8331 Muscidae ✓
 8326 Scathophagidae ✓
 8325 Sciomyzidae ✓
 8324 Empidoidea ✓
 8323 Sciomyzidae ✓
 8322 Mycetophilidae ✓
 8221 Ichneumonidae ✓

(25. July. 2012)

I did some date entry on identification
 from yesterday.

In the morning I reported to Beacon
 in Kona for a respirator fit test,
 which went well.

I am trying to key KMPR 7977
 using Townes and Townes (1981), p. 8 1→
 Serphinae, p. 19 1→2→ Serphini,
 p. 133 1→2→3→4→5→6→ Serphus, p. 170
 1→3→5→bistriatus?

KMPR 7648 is another Proctotrupid.
 p. 8 1→ Serphinae, p. 19 1→2→
 Serphinae Serphini p. 133 1→2→3→4
 →5→8→ Serphus?? This is a ♂ I think.
 I am going to leave it as Proctotrupidae,
 even though it may be a ♂ Serphus.

I walked down to Headquarters
 Lake in the afternoon, mostly looking
 for Acrididae, which I found.

[27 July 2012]

~~I worked today~~ I worked on some cleaning and organizing, etc.

[9 August 2012]

I did some catching up on e-mail.
I added barcodes to Neuroptera specimens.

I prepared a map of localities of Spheroiid collecting sites for working with Wayne Mathis next week.

I took a walk down to Headquarters Lake for a little while in the afternoon. I saw no Smithheims.

I brought a tray and some Uniscite to State Forestry, giving to Eric on the FIA crew. They are to wash their boots in this.

[10 August 2012]

I pinned and entered data on specimens collected recently.

I started work ~~to~~ toward making barcode vial labels for specimen vials.

I prepared a web page for the KNUR collection.

[13 August 2012]

I went out in the field collecting with Wayne and Diane Mathis and Janine Ray.

[14 August 2012]

Wayne and Diane are working in our lab today on the specimens they collected yesterday and material from the KNUR collection.

I keyed [KNUR 7008] to Letrix ornata using Vickery and Keon (1985). I think it is a ♂.

Now I am trying to key (KNWR 8504),
 p. 326 1→2→Melanophina? p. 333
 p. 334 1→4→5→8→9→10→~~11~~→13→
 →14→15→16→

Melanoplus?

This is a ♀. p. 364 1→2→5→6→wolfii?
 →7→11→16→17
 →18→19→20→borealis? There appears to be
 a Kenai NWR of record on the map, p. 397.

16 August 2012

I worked some on organizing
 KNWR publications.

Now I am keying (KNWR 8513) using
 Vickery and Keon (1985), p. 326 1→3→
 This is a ♀ 4→Gomphocerina? p. 531
 1→2→Gomphocerini, p. 552 1→2→3→4
 →Chorthippus urticensis

(KNWR 8514) is the same, also ♀.

(KNWR 8515) is a ♂ looking like
Melanoplus, p. 364 1→2→5→7→(11)→16→17→
 18→19→21→22→~~24~~→fasciatus?

(KNWR 8516) is a ♂ looking like
Melanoplus, p. 364 1→23→24→28→31
 →32→38→41→43→44→45→... bruneri or
sanguinipes.

(KNWR 8517) is also a ♂ of the same.

I spent the afternoon composing new
 vial labels that include barcodes.

17 August 2012

I labeled a bunch of vial specimens.

Sorting...

8327	} Lepidoptera
8289	
8302	
8301	
8293	
8300	
8249	} Aridae
8261	} Carabidae
8254	
8255	
8260	
8256	

8109 } Ichneumonidae ✓
 8262 }
 8118 }

8095 }
 8091 } Pimplinae ✓
 8090 }

8063 - Palidae

8320 - Muscidae ✓

8319 Diptera 72 → 73 → 74 → 75 → 76 → 77 → 78 →
 81 → 82 → 93 → 94 → 95 → 96 → 99 → 100 → 102 →

103 → Helconidae? ♂ ✓

8318 → Scionyxidae ♀ ✓

8317 → Scathophagidae ✓

8316 → Proctotrupidae ✓

8315 - Ichneumonidae ✓

22. August 2012

I am helping Dominique with his collection. He received several ~~replies~~ replies from specialists to a notification he sent (rather, had me send) to Entomo-L that he wanted to find homes for his material. He asked me to make a reply saying that he is considering these responses. I intend to work on his collection database today, trying to get it in order.

File Colletdatabase 510209 ff⁷ has records
 3240 - 7438

Colletdatabase 33108 ff⁷ 3240 - 7710 ✓

Collet database 07022005 ff⁷ 3833 - 6810

New Collet collection.xls 7928 - 9897 ✓

Collet DB Copy ff⁷ 3787 - 7193

new Collet DB ods 7971 - 8060

Back at the office, I started working on assembling Dominique's data.

23. August 2012

I am again working on Dominiqua's database. Derek sent me a nicely exported file

Collectedatabase1242008exp.xls 3240 - 7590

I started cataloging some of his specimens.

24. August 2012

I worked some on pulling AK Mannerheim locality records.

I packaged up bristletails to go back to RBCM.

I am examining a bristletail with label data

Lake Cowichan, British Columbia, Canada
48°49'N, 124°04'W
15. IX. 2001
F. Whiting

This is a ♀ with a long, feathery ovipositor; sickle-shaped lateral exellae; 2+2 ev. on II-III. I think this is Pedetonotus submutans. → (ICMR: Euro: 8513)

I must get better at identifying Anthomyiidae and Muscidae.

I am sorting some males and females before keying.

7237 ♀

7238 ♀

7375 ♀

7260 ♀

7245 ♀

7275 ♀

7104 ♂

7385 ♀

7392 ♀

7272 ♂

7737 ♂

7230 ♀

7642 ♀

7240 ♂

7241 ♀

7632 ♀ Looks like Scathophagidae, but has setae under scutellum.

7641 ♂

7285 ♂

7497 ♀

7107 ♀

(27. August, 2012)

I am trying to key (KUMR 7272)
using MND, p. 1100 1→3→5→6→10→14→16→
18→24→25→27→28→29→32→38→39→40→
41→42→43→ Hydrophoria?

Huckett (1965), p. 136
1→15→21→22→23→24→26→27→28→29→
Trying Huckett (1971), p. 77 1→5→11→14→15→
flavohalterata?

→ ambigua or flavohalterata?

I need Griffiths (1978).

Keying another Anthomyid, (KUMR 7737),
MND, p. 1100 1→3→5→6→10→14→16→18→19→20→
21→23→ Hydrophoria? It is different than
(KUMR 7272), though.

(KUMR 7244), same key 1→3→5→6→10→14→16→18→
19→20→21→23→ Hydrophoria?

(KUMR 7641) 1→3→5→1→10→14→16→18→24→25→
27→28→29→32→38→39→41→47→50→

Phorbia? Huckett (1965), p. 72 1→2→3→!
Maybe I have the wrong genus.

50→51→49→ Acrostilpna? Huckett (1965), p.
107 1→2→3→! I think I have to leave this
in Anthomyiidae for now.

Examining a specimen with label
data

Royal British Columbia Museum
ENT006-002834

(RAC06-50)

This looks like a ♀ Pedestanus
submutans, I think an immature ♀.

28. August 2012

I am at Dominique's house again today. We are going through some of his illustrations. I need to be able to associate illustrations with specimens, so we are going over his collecting code methods

example: gall

4286 B62

collecting event
(ie. station) specific specimen

Capitula

- A - rosaria, Rhabdophaga specios group
- B - stem gall, salicis
- C - rigidulae, Rhabdophaga
- D - rosaria on Salix pulchra
- E - * Pontania
- G - rosaria on Salix sitchensis
- H - salicis triticoides
- I -
- J - stem gall on salicina

- Q - salicis on salicina
- S - strobiloides
- T - stem gall on sitchensis

Also, red tags are rosaria
green tag is Populus tremuloides
blue tag is Arctostaphylos
yellow is Margyriola, bright yellow
light blue is Picea.
Red dot indicates a drawing.

R - Rubus spectabilis

I brought home another drawer of Dominique's specimens (Encyrtidae) and some of his illustrations.

29. August 2012

I took care of paperwork for a while in the morning.

New ♀ in keying *Anthonomyia* (CNR 7285),
 MND, ♀. 1100 1→3→5→6→10→14→16→18→24→
 25→27→28→29→32→38→39→40→44→45→

Eremomyia.

♀ photographed this specimen.

3826 - 3841

♀ removed the abdomen and placed it in
 KOH solution.

Sorting *Anthonomyia* by sex.

6015 ♂ ✓
 4977 ♀
 4962 ♂
 5770 ♂
 2502 ♀
 4998 ♂
 4718 ♀
 2504 ♀
 5771 ♂
 4999 ♂
 3702 is ♀ *Scathophagidae*. ✓
 4221 ♀
 5006 is ♂, badly damaged
 3526 is ♂ *Scathophagidae*.
 2897 ♀
 5012 ♀

4245 ♀
 1751 ♀
 5107 ♀
 4249 ♀
 4756 ♂
 4250 ♀
 4467 ♀
 4468 ♀
 4514 ♀
 4249 ♀
 6099 ♀
 6001 ♀
 4426 ♂
 5476 ♂
 4637 ♂
 5725 ♀
 4641 ♂
 1164 ♀
 6062 ♂
 4112 ♀
 6011 ♂
 4113 ♀
 7403 ♀
 7390 ♂
 7400 ♀
 7401 ♂
 7318 ♂

7397 ♂
 7257 ♀
 7389 ♂
 7621 ♀
 7645 ♂
 7363 ♀
 7631 ♀
 7384 ♂
 7613 ♀
 1413 ♂
 1964 ♂
 2265 ♂
 2557 ♀
 2558 ♀
 2630 ♀
 2676 ♀
 2639 ♀
 4059 ♀
 3847 ♀
 4424 ♀
~~26~~ 2685 ♂
 4423 ♂
 3951 ♀
 2840 ♀
 4428 ♂
 3954 ♀
 2486 ♂

4429 ♀
 4430 ♀
 3955 ♂
 3633 ♂
 4442 ♂
 3956 ♀
 3701 is ♀ *Scathophagidae*
 3733 ♂
 4447 ♂
 3957 ♀
 4450 ♂
 4448 ♂
 3978 ♀
 3703 is ♀ *Scathophagidae*
 3980 ♀
 4366 ♀
 3735 ♀
 3984 ♀
 7418 ♀
 4367 ♂
 3841 ♀
 3845 ♀
 3986 ♀
 4056 ♀
 4058 ♀
 2555 ♀
 2487 ♀

2488 7 ✓

30. August. 2012

I packaged Trichoptera specimens to be mailed to Oliver Flint.

I dissected genitalia of (KUNR 7255) that I had placed in KOH yesterday.

I am comparing this with figures in Griffiths (1984) of species known from Alaska.

E. tunicata no

E. labridorensis no

E. triciperda no

E. parafacialis closer no

E. setosa no

E. frigida no

E. tarsata no

E. longissima no?

I may have the wrong genus. Based on comparisons in Huckett (1965) illustrations, it may be *Delia*. I requested Griffiths (1991a). I would like to know where I went wrong in the key.

Keying using MND, p. 1109 40 → 41 → 42 → 43 → 54 → 55 → Pegohylemyia? Delia?

31. August. 2012

I started working on adding Odonate records to the refuge's checklist.

John asked for a list of flora from LTEMP from the vicinity of headquarters. This is for landscaping purposes.

I generated these data.

I pulled 9 *Hydrellia* specimens (KUNR 7470) and (7482) to go to Wayne Mathis.

Sept 4-7

I participated in the Stormy Lake treatment with rotenone to eradicate Northern Pike.

10 Sept. 2012

I received a plate from CDB, so I will be loading this plate with samples.

I looked through DNA recording records for samples we have submitted in the past. Different primers were used for the Diptera, Lepidoptera, and Hemiptera, so I will load the plate with only one order.

I prepared and submitted specimen data for 97 specimens.

Now I am photographing specimens.

cat_num	frames	
7036	2334 - 2335	✓
8360	2336 - 2337	✓
7176	2338 - 2340	✓
7175	2341 - 2342	✓
8613	2343 - 2344	✓

cat_num	frames	
4230	2345 - 2346	✓
5174	2347 - 2348	✓
4391	2349 - 2350	✓
6668	2351 - 2352	✓
3892	2353 - 2354	✓
6758	2355 - 2356	✓
3236	2357 - 2358	✓
4061	2359 - 2360	✓
8361	2361 - 2362	✓
8362	2363 - 2364	✓
2715	2365 - 2366	✓
1980	2367 - 2368	✓
3510	2369 - 2370	✓
1437	2371 - 2372	✓
2700	2373 - 2374	✓
1653	2375 - 2376	✓
2801	2377 - 2378	✓
7127	2379 - 2380	✓
2800	2381 - 2382	✓
6412	2383 - 2384	✓
8380	2385 - 2386	✓
7621	2387 - 2388	✓
8502	2389 - 2390	✓
8501	2391 - 2392	✓
7248	2393 - 2394	✓
7611	2395 - 2396	✓

<u>cat. num</u>	<u>frames</u>	
7791	2397 - 2398	✓
7797	2399 - 2400	✓
7297	2401 - 2402	✓

(11. September 2012)

I processed images I had taken yesterday. I have now photographed 34 of 97 specimens.

Now I am photographing more specimens.

<u>cat. num</u>	<u>frames</u>	
7448	2403 - 2404	✓
7618	2405 - 2406	✓
7038	2407 - 2408	✓
7970	2409 - 2410	✓
7173	2411 - 2412	✓
8381	2413 - 2414	✓
8382	2415 - 2416	✓
7215	2417 - 2418	✓
7961	2419 - 2420	✓
7960	2421 - 2422	✓
8385	2423 - 2424	✓
8386	2425 - 2426	✓

Now I am switching to the stereoscope and Coolpix for the smaller specimens.

<u>cat. num</u>	<u>frames</u>	
1505	3845 - 3847	✓
1530	3848 - 3850	✓
1597	3851 - 3853	✓
1608	3854 - 3856	✓
1629	3857 - 3859	✓
1833	3860 - 3862	✓
1853	3863 - 3865	✓
2067	3864 - 3868	✓
2068	3869 - 3872	✓
2192	3873 - 3875 3876 3877	✓
2196	3878 - 3881	✓
2215	3882 - 3885	✓
2285	3886 - 3888	✓
2407	3889 - 3891	✓
2531	3892 - 3894	✓
2587	3895 - 3897	✓
2619	3898 - 3900	✓
3413	3901 - 3904	✓
3415	3905 - 3907	✓
3518	3908 - 3910	✓
3523	3911 - 3913	✓
3524	3914 - 3916	✓
3661	3917 - 3919	✓
3780	3920 - 3922	✓

<u>cat. num</u>	<u>frames</u>	
3799	3923 - 3925	✓
3887	3926 - 3927	✓
4039	3928 - 3930	✓
4065	3931 - 3933	✓
4869	3935 3934 - 3935	✓
4941	3936 - 3937	✓
5140	3938 - 3940	✓
5141	3941 - 3942	✓
5156	3943 - 3945	✓
5268	39 3946 - 3948	✓
5327	3949 - 3951	✓
5355	3952 - 3954	✓
5666	3955 - 3957	✓
5710		

I was called away to go rescue an injured sandhill crane off of Humby River Road. It flew off.

5710	3958 - 3961	✓
5960	3962 - 3964	✓

← The head is missing.

6154	3965 - 3967	✓
6277	3968 - 3970	✓
7330	3971 - 3973	✓
7472 7573	3974 - 3978	✓

<u>cat. num</u>	<u>frames</u>	
7967	3977 - 3980	✓
8379	3981 - 3984	✓
8383	3985 - 3987	✓
8384	3988 - 3990	✓
8387	3991 - 3995	✓

← abdomen missing

12. September 2012

I processed photos taken yesterday.

I made ready to start populating the plate from CCDB. I need 95 specimens and have selected 97. I must remove two as alternates:

KNUR:Ento:8387

KNUR:Ento:8383

I am loading plate CCDB-11352.

<u>well</u>	<u>KNUR cat. num</u>	<u>parts</u>
A01	7036	left mid leg ✓
A02	8360	left tibia
A03	7176	hind tibia
A04	7175	left mid leg

well	KNUR cat-num	parts	well	cat-num	parts
A05	8613	left mid. tibia and tarsus.	C05	5960	all left legs
A06	4230	left midleg	C06	2800	mid coxa/trochanter
A07	5174	left midleg	C07	4903	all left legs
A08	4391	left midleg	C08	3415	all left legs
A09	6668	left midleg	C09	4039	all left legs
A10	3892	left midleg	C10	8380	left mid leg
A11	6758	left midleg	C11	6412	mid tibia
A12	3236	left midleg	C12	2192	all left legs
B01	4061	left midleg	D01	2215	all left legs
B02	8361	left midleg	D02	3799	all left legs and right hind leg
B03	8362	left midleg	D03	1853	all left legs
B04	2715	left midleg	D04	3887	left hind and mid legs
B05	1980	left midleg	D05	3661	all left legs
B06	3510	left midleg	D06	1530	all left legs
B07	1437	left midleg	D07	1833	all left legs
B08	2700	left midleg	D08	2407	all left legs
B09	1653	left midleg	D09	6277	left mid and hind legs
B10	2801	left midleg	D10	7573	all left legs
B11	7127	left mid coxa - femur	D11	7330	left mid and hind leg.
B12	8379	All left legs	4	This whole specimen fell off of the pin I glued it back on.	
C01	5140	all left legs	D12	7173	left mid leg
C02	5327	all left legs			
C03	2068	all left legs			
C04	5355	left mid and hind leg, right hind leg			

13. September 2012

I am continuing the work from yesterday where I left off.

well	cat num	parts
E01	7970	left midleg
E02	7038	left midleg
E03	7448	left midleg
E04	7618	left hindleg
E05	7356	left mid and hind leg
E06	6154	all left legs
E07	5268	all left legs
E08	5156	all left legs
E09	5141	all left legs
E10	4862	all left legs
E11	4941	all left legs
E12	5710	all left legs
F01	5666	left fore and hind legs
F02	7621	left tibia and tarsus of midleg
F03	7747	left midleg
F04	7791	left midleg
F05	7611	left midleg
F06	7248	left midleg
F07	7247	left midleg
F08	7500	left midleg and hindleg
F09	7967	left midleg and hindleg

well	cat num	parts
F10	8501	left midleg
F11	8345 8502	left midleg
F12	8381	left mid trochanter-femur
G01	8382	left foreleg or midleg and hindleg
G02	7215	left mid femur
G03	8384	left mid and hind legs
G04	7461	left midleg
G05	7960	mid femur
G06	8385	mid femur
G07	8386	left mid and hind legs
G08	3518	all left legs
G09	2067	all left legs
G10	3413	left fore and hind legs
G11	2531	all left legs
G12	2196	left mid and hind legs
H01	3780	all left legs
H02	1629	all left legs
H03	2587	all left legs
H04	3523	all left legs
H05	2619	all left legs
H06	4065	all left legs
H07	1597	all left legs
H08	1608	all left legs
H09	2285	all left legs
H10	1508	both forelegs and left hind leg

well cont. num parts
H11 3524 all left legs

[17. September. 2012]

I did some correspondence. I uploaded data to BOLD (data for the microplate). Actually, I e-mailed this.

I worked on adding taxonomy and more ids and hit loc data to our Peninsular DNA barcode database.

I scanned Griffiths (1991).

[18. September. 2012]

Yesterday evening as we were harvesting ^{releases} ~~beets~~ in our S high tunnel, I found a couple of very mature root maggots on a radish root.

This morning I put one of these under the scope to compare it with illustrations from Griffiths (1991), p. 978. It is D. floridis. I took several photos of this specimen.

VBCT specimen with ID label

[CC05-2] is a ♂ Pedestritus submontanus.
This is [KNUR:Ent:811]

Now I am trying to buy Hydrophoria specimens using Griffiths (1998), pp. 1912-1913. [KNUR 4565] is a ♀. 1 → 2 → 3 → ♀.
cinerascens?

[KNUR 7272] is a ♂. 1 → 2 → 3 → 4 →
cinerascens ♀ or hacketti. I need to dissect genitalia.

[KNUR 7737], also a ♂, is different. I think I need to compare Zophra and Hydrophoria as defined by Griffiths here.

[KNUR 7240] is also a ♂. I think all of these males may be Zophra based on the short aristal hairs.

I put the abdomen of [KNUR 7737] in KOH to dissect tomorrow.

[19. Sept. 2012]

I am trying to identify [KNWR 7737]

I dissected the genitalia and photographed this. Keying using Griffiths (1991), p. 212. 1 → 2 → 3 → 25 → 27 → 29 → 30 → 39 → 41 → 3. Zetterstedtii. The genitalia agree perfectly.

I pulled off the abdomen of [KNWR 7272] and placed it in KOH.

I did some data entry on some of Dominique's specimens.

[KNWR 7389] is a rather beastly Anthomyid ♂. Keying using MND, p. 1100. 1 → 3 → 5 → 6 → 10 → 14 → 16 → 18 → 24 → 25 → 27 → 28 → 29 → 32 → 38 → 39 → 41 → Botanophila?

Now keying [KNWR 7641], same key
1 → 10 → 14 → 16 → 18 → 24 → 25 → 27 → 28 → 29 → 32 → 38 → 39 → 46 → 47 → 50 → 51 → 52 → 53 → 54 → 55 → Delia

Now [KNWR 5476], same key
1 → 10 → 14 → 16 → 18 → 24 → 25 → 27 → 28 → 29 → 32 → 38 → 39 → 41 → 47 → 48 → 49 → Acrostelma?

[KNWR 1062], same key 14 → 16 → 17 → 18 → 19 → 20 → 21 → 22 → 23 → 24 → 25 → 26 → 27 → 28 → 29 → 30 → 31 → 32 → 33 → 34 → 35 → 36 → 37 → 38 → 39 → 40 → 41 → 42 → 43 → 44 → 45 → 46 → 47 → 48 → 49 → 50 → 51 → 52 → 53 → 54 → 55 → 56 → 57 → 58 → 59 → 60 → 61 → 62 → 63 → 64 → 65 → 66 → 67 → 68 → 69 → 70 → 71 → 72 → 73 → 74 → 75 → 76 → 77 → 78 → 79 → 80 → 81 → 82 → 83 → 84 → 85 → 86 → 87 → 88 → 89 → 90 → 91 → 92 → 93 → 94 → 95 → 96 → 97 → 98 → 99 → 100 → 101 → 102 → 103 → 104 → 105 → 106 → 107 → 108 → 109 → 110 → 111 → 112 → 113 → 114 → 115 → 116 → 117 → 118 → 119 → 120 → 121 → 122 → 123 → 124 → 125 → 126 → 127 → 128 → 129 → 130 → 131 → 132 → 133 → 134 → 135 → 136 → 137 → 138 → 139 → 140 → 141 → 142 → 143 → 144 → 145 → 146 → 147 → 148 → 149 → 150 → 151 → 152 → 153 → 154 → 155 → 156 → 157 → 158 → 159 → 160 → 161 → 162 → 163 → 164 → 165 → 166 → 167 → 168 → 169 → 170 → 171 → 172 → 173 → 174 → 175 → 176 → 177 → 178 → 179 → 180 → 181 → 182 → 183 → 184 → 185 → 186 → 187 → 188 → 189 → 190 → 191 → 192 → 193 → 194 → 195 → 196 → 197 → 198 → 199 → 200 → 201 → 202 → 203 → 204 → 205 → 206 → 207 → 208 → 209 → 210 → 211 → 212 → 213 → 214 → 215 → 216 → 217 → 218 → 219 → 220 → 221 → 222 → 223 → 224 → 225 → 226 → 227 → 228 → 229 → 230 → 231 → 232 → 233 → 234 → 235 → 236 → 237 → 238 → 239 → 240 → 241 → 242 → 243 → 244 → 245 → 246 → 247 → 248 → 249 → 250 → 251 → 252 → 253 → 254 → 255 → 256 → 257 → 258 → 259 → 260 → 261 → 262 → 263 → 264 → 265 → 266 → 267 → 268 → 269 → 270 → 271 → 272 → 273 → 274 → 275 → 276 → 277 → 278 → 279 → 280 → 281 → 282 → 283 → 284 → 285 → 286 → 287 → 288 → 289 → 290 → 291 → 292 → 293 → 294 → 295 → 296 → 297 → 298 → 299 → 300 → 301 → 302 → 303 → 304 → 305 → 306 → 307 → 308 → 309 → 310 → 311 → 312 → 313 → 314 → 315 → 316 → 317 → 318 → 319 → 320 → 321 → 322 → 323 → 324 → 325 → 326 → 327 → 328 → 329 → 330 → 331 → 332 → 333 → 334 → 335 → 336 → 337 → 338 → 339 → 340 → 341 → 342 → 343 → 344 → 345 → 346 → 347 → 348 → 349 → 350 → 351 → 352 → 353 → 354 → 355 → 356 → 357 → 358 → 359 → 360 → 361 → 362 → 363 → 364 → 365 → 366 → 367 → 368 → 369 → 370 → 371 → 372 → 373 → 374 → 375 → 376 → 377 → 378 → 379 → 380 → 381 → 382 → 383 → 384 → 385 → 386 → 387 → 388 → 389 → 390 → 391 → 392 → 393 → 394 → 395 → 396 → 397 → 398 → 399 → 400 → 401 → 402 → 403 → 404 → 405 → 406 → 407 → 408 → 409 → 410 → 411 → 412 → 413 → 414 → 415 → 416 → 417 → 418 → 419 → 420 → 421 → 422 → 423 → 424 → 425 → 426 → 427 → 428 → 429 → 430 → 431 → 432 → 433 → 434 → 435 → 436 → 437 → 438 → 439 → 440 → 441 → 442 → 443 → 444 → 445 → 446 → 447 → 448 → 449 → 450 → 451 → 452 → 453 → 454 → 455 → 456 → 457 → 458 → 459 → 460 → 461 → 462 → 463 → 464 → 465 → 466 → 467 → 468 → 469 → 470 → 471 → 472 → 473 → 474 → 475 → 476 → 477 → 478 → 479 → 480 → 481 → 482 → 483 → 484 → 485 → 486 → 487 → 488 → 489 → 490 → 491 → 492 → 493 → 494 → 495 → 496 → 497 → 498 → 499 → 500 → 501 → 502 → 503 → 504 → 505 → 506 → 507 → 508 → 509 → 510 → 511 → 512 → 513 → 514 → 515 → 516 → 517 → 518 → 519 → 520 → 521 → 522 → 523 → 524 → 525 → 526 → 527 → 528 → 529 → 530 → 531 → 532 → 533 → 534 → 535 → 536 → 537 → 538 → 539 → 540 → 541 → 542 → 543 → 544 → 545 → 546 → 547 → 548 → 549 → 550 → 551 → 552 → 553 → 554 → 555 → 556 → 557 → 558 → 559 → 560 → 561 → 562 → 563 → 564 → 565 → 566 → 567 → 568 → 569 → 570 → 571 → 572 → 573 → 574 → 575 → 576 → 577 → 578 → 579 → 580 → 581 → 582 → 583 → 584 → 585 → 586 → 587 → 588 → 589 → 590 → 591 → 592 → 593 → 594 → 595 → 596 → 597 → 598 → 599 → 600 → 601 → 602 → 603 → 604 → 605 → 606 → 607 → 608 → 609 → 610 → 611 → 612 → 613 → 614 → 615 → 616 → 617 → 618 → 619 → 620 → 621 → 622 → 623 → 624 → 625 → 626 → 627 → 628 → 629 → 630 → 631 → 632 → 633 → 634 → 635 → 636 → 637 → 638 → 639 → 640 → 641 → 642 → 643 → 644 → 645 → 646 → 647 → 648 → 649 → 650 → 651 → 652 → 653 → 654 → 655 → 656 → 657 → 658 → 659 → 660 → 661 → 662 → 663 → 664 → 665 → 666 → 667 → 668 → 669 → 670 → 671 → 672 → 673 → 674 → 675 → 676 → 677 → 678 → 679 → 680 → 681 → 682 → 683 → 684 → 685 → 686 → 687 → 688 → 689 → 690 → 691 → 692 → 693 → 694 → 695 → 696 → 697 → 698 → 699 → 700 → 701 → 702 → 703 → 704 → 705 → 706 → 707 → 708 → 709 → 710 → 711 → 712 → 713 → 714 → 715 → 716 → 717 → 718 → 719 → 720 → 721 → 722 → 723 → 724 → 725 → 726 → 727 → 728 → 729 → 730 → 731 → 732 → 733 → 734 → 735 → 736 → 737 → 738 → 739 → 740 → 741 → 742 → 743 → 744 → 745 → 746 → 747 → 748 → 749 → 750 → 751 → 752 → 753 → 754 → 755 → 756 → 757 → 758 → 759 → 760 → 761 → 762 → 763 → 764 → 765 → 766 → 767 → 768 → 769 → 770 → 771 → 772 → 773 → 774 → 775 → 776 → 777 → 778 → 779 → 780 → 781 → 782 → 783 → 784 → 785 → 786 → 787 → 788 → 789 → 790 → 791 → 792 → 793 → 794 → 795 → 796 → 797 → 798 → 799 → 800 → 801 → 802 → 803 → 804 → 805 → 806 → 807 → 808 → 809 → 810 → 811 → 812 → 813 → 814 → 815 → 816 → 817 → 818 → 819 → 820 → 821 → 822 → 823 → 824 → 825 → 826 → 827 → 828 → 829 → 830 → 831 → 832 → 833 → 834 → 835 → 836 → 837 → 838 → 839 → 840 → 841 → 842 → 843 → 844 → 845 → 846 → 847 → 848 → 849 → 850 → 851 → 852 → 853 → 854 → 855 → 856 → 857 → 858 → 859 → 860 → 861 → 862 → 863 → 864 → 865 → 866 → 867 → 868 → 869 → 870 → 871 → 872 → 873 → 874 → 875 → 876 → 877 → 878 → 879 → 880 → 881 → 882 → 883 → 884 → 885 → 886 → 887 → 888 → 889 → 890 → 891 → 892 → 893 → 894 → 895 → 896 → 897 → 898 → 899 → 900 → 901 → 902 → 903 → 904 → 905 → 906 → 907 → 908 → 909 → 910 → 911 → 912 → 913 → 914 → 915 → 916 → 917 → 918 → 919 → 920 → 921 → 922 → 923 → 924 → 925 → 926 → 927 → 928 → 929 → 930 → 931 → 932 → 933 → 934 → 935 → 936 → 937 → 938 → 939 → 940 → 941 → 942 → 943 → 944 → 945 → 946 → 947 → 948 → 949 → 950 → 951 → 952 → 953 → 954 → 955 → 956 → 957 → 958 → 959 → 960 → 961 → 962 → 963 → 964 → 965 → 966 → 967 → 968 → 969 → 970 → 971 → 972 → 973 → 974 → 975 → 976 → 977 → 978 → 979 → 980 → 981 → 982 → 983 → 984 → 985 → 986 → 987 → 988 → 989 → 990 → 991 → 992 → 993 → 994 → 995 → 996 → 997 → 998 → 999 → 1000

[KNWR 6061] is the same.

[KNWR 6061]

I dissected the genitalia of [KNWR 7272] from the abdomen.

Keying this in Griffiths (1991), p. 212. 1 → 2 → 3 → 25 → 27 → 29 → 30 → 31 → 33 → 35 → 36 → 37 →

Z. borealis

[20. September 2012]

I collected some slugs from outside the back door. I went to town to identify them. I saw and photographed one slug that seemed to have a Carabid larva attached attached to it. This was at about 09:30. The beetle was attached to the side of the slug by the larva's posterior end. It was working with some slime or silk about its head and thorax. I could not tell if it was trapped or intentionally associating with the slug. I also photographed a Spinidwile.

Now I am trying to key live
slugs using Forsyth (2004), p. 33
1 → 3 → 4 → 6 → 8 → Derocera?
↳ 9 → 10 → Lima?

p. 116 1 → ..

I dissected out the genitalia of one
of the larger, mottled slugs. It is
Derocera reticulatum.

Tricolima? no. I dissected several of
the smaller, paler individuals and I think
they may be Derocera reticulatum.

I removed the abdomen from [KNUR 7240]
and put this in KOH.

[20. September 2012]

I dissected the genitalia of [KNUR 7240] Now
I am taking it through Griffiths (1991) key,
p. 2112 1 → 2 → 3 → 25 → 27 → 28 → 3
Lineatocollis. I took some quick
photographs.

Keying an Anthomyiid, [KNUR 6065],
using Hackett (1987), p. 1100... 10 → 14 → 16 → 18
→ 24 → 25 → 27 → 28 → 29 → 32 → 38 → 39 → 40 → 41 →
42 → 47 → 54 → 55 → Psychomyia? Delia?

Keying [KNUR 4962], same key 10 → 14 → 16
→ 18 → 24 → 25 → 27 → 28 → 29 → 32 → 38 → 39 →
40 → 41 → 42 → 43 → Hydrophoria?

[KNUR 4448], [4450], are the same I think.
[KNUR 4448], same key 10 → 14 → 16 → 17 →!
(switching to [KNUR 4450], which is in
a little bit better shape.) 18 → 24 → 25 → 27 →
28 → 29 → 32 → 38 → 39 → 40 → 41 → 42 → 43 → 54 → 55 →
Delia [KNUR 4442] I think is the same.
[KNUR 4447] I think is the same.

[24. September 2012]

I used John's credit card to pay for DNA
barcoding of Hymenoptera specimens.

I will be sampling forest bristletail
from my last culture to send to Herb
Kjer, New Brunswick, N.J.

cat. num	preservative	#
8636	100% ETOH	1
8637	RNA later	::
8638	RNA later	::
8639	RNA later	::
8640	RNA later	::
8641	RNA later	::

This left only five bristle tails in my lab colony.

I drove to Dominiqua's house in the afternoon to work on moving his collection. He may be selling his house within the month, so I need to get going on this. I brought back five boxes of slides, 9 Cornell drawers, and one large cardboard box of willow galls.

I mailed off the bristle tails to Ralph Peters at the Kailof post office.

(28. September 2012)

I am trying to identify a Polygonum brought to me by Candace from her house. I am using efloras.org. Polygonum sect. Polygonum.
1 → 2 → 3 → 4 → !

↳

What about Polygonum cilinode?
No, this is Fallopia. The tegulae are keeled. ~~1 → 4 → 5 → 6~~ → convoluted,
not scandens, not dumetorum.

I attended the safety committee meeting from 09:00 - 10:15. I need to get JHAs together for biology.

In the afternoon I worked on Dominiqua's data, starting a project on Arctos, etc. I also did some data entry for some specimens.

I started trying to configure a new Motrola 2D scanner.

26. September 2012

I entered data on Platygoter specimens from Dominigue.

I started working on optimizing ~~the~~ code 20 barcodes for our new scanner.

27. September 2012

I worked on insect labels and my LTP/MP presentation for tomorrow.

In the afternoon I collected some mushrooms on near the Centennial Trail that I think are Hygrophorus canarophyllus. I am going to try to rear flies from some of these.

28. September 2012

I joined the Entomological Society of America.

I spent most of the morning on my presentation for this afternoon.

I was going to give a presentation in the afternoon, but the Russian delegation was hours late. I left early to go to Homer with my family as planned.

1. October 2012

I removed the abdomen from (KUMR: Ent: 6062), placing it in KOH.

I am now examining the slugs I collected on Friday from the Segers' new house in Homer. Keying using Forsyth (2004), p. 33 1→3→4→5→
Arion, p. 126 1→2→ A. distinctus?
↳ (KUMR: Ent: 8685)

I had also collected four earthworms at the same time: three large worms looking to me like Lumbricus rubellus (KUMR: Ent: 8687) and one paler worm (KUMR: Ent: 8686).

Keying [KNWR: Ent: 8687] using Reynolds (1977),
p. 32 1 → 2 → 3 → (Clitellum begins on 28) 4 →
Lumbricus rubellus.

Keying [KNWR: Ent: 8686] same key 1 → 2 → 6 →
(Clitellum on 30-35) 7 → 11 → (MP on 15) 12 → 15 →
16 → Octolasion tyzaceum.

I scanned Griffiths (1980).

I dissected the genitalia of [KNWR: Ent: 1062].
I do not think it is Egle. Keying using
MNP, p. 1106 16 → 18 → 24 → 25 → 27 → 28 → 29 →
32 → 38 → 39 → 40 → 41 → 42 → 43 → 54 → 55 →

Pegohylomyia? No. After comparing my
specimens with figures of genitalia in
Huckett (1965), I think it is Delia.

[2. October 2012]

I arrived at work late because I took
time off to go duck hunting with
Todd this morning.

I am labeling some of Dominique's
material.

[3. October 2012] I worked on entering data
for specimens from Dominique.

I drove out to Dominique's house in
the late morning. He was soundly
asleep, so I grabbed a few drawers and
left.

I spent the afternoon pulling spatial data
for invasive earthworms, slugs, and insects
from the Kerai vicinity.

[4. October 2012]

I worked on cross-links between recent
Arctos and BOLD Hymenoptera records and
linked the BOLD images to the specimens.

I entered data for Trichoptera I
received from Oliver Flis and put
them in the collection.

I am examining a bristletail with
label data ON NELSON House
NELSON?
NR LSON?

IK W. OR NELSON Hwy 30
FROM DOUG FIR FIN?
7/IX/87

This was difficult to read, so my
interpretation above may not be
accurate. Another label read

[ENT991-63146]

It has 212 ev on II-VI and lateral ocelli
like Pedeticobius vesticus. I think it is this,
but it could be Pedetontus subg. Pedetontus.
It is a ♀.

[5. October, 2012]

I worked on late evening for a few of
Dominique's specimens.

I scanned Griffiths (1998).

I am examining specimens with
label data

CANADA BC.
GOLDSTREAM PROVINCIAL PARK
BOUNDARY OF PARK; NORTH SIDE OF ROAD
moss & litter from maple crotch
14 APR 1975
MACKIE, A.P.
ROYAL BRITISH COLUMBIA MUSEUM
ENT991-60567 70% EtOH
THYSANURA

This vial contained two bristletails,
both ♀. Pedetontus submutans.
→ [KNWR:Ento:8737]

Now I am keying [KNWR:Ento:4426]
using MND, p. 1102 10 → 14 → 16 → 18 → 24 → 25 → 27 →
28 → 29 → 32 → 38 → 39 → 40 → 41 → 42 → 43 → 54 → 55 →

Delia. I think [KNWR:Ento:4423] and
[KNWR:Ento:4428] are also Delia.

Now I am making some educated
guesses:

KNWR 5770 - Delia?

5771 - Delia?

[KNUK:Ents:1412] is damaged, but a different Anthomyiid than I have seen.

It may be Pegomyia Pegoplate?

As I was adding refilling the water cvette of my culture of Bardonia, I got to watch two female adults fight each other over a piece of dried fly larva. They went after each other with their mandibles, but only pushed each other away. They were feisty. As I watched, I saw that these interactions are quite common. The larger ones tend to have the best feeding choices, but they frequently tussle. The immatures first sneak in, but are repelled after a while.

[9. October 2012]

I did some data entry in the morning. I did some personal shopping in the mid morning and returned by 11:00.

I labeled herbarium containers.

A specimen containing only the label [CC09-39] is Machilinus aurantivus ♂.

→ [KNUK:Ents:8739]

I am pinning Trichoptera to be mailed to O. Flint.

[KNUK:Ents:6716]

[KNUK:Ents:3851]

I am finding that I am having a hard time finding specimens. I must improve my object tracking.

I refined my printed pin labels, printed some off, and started labeling specimens.

[10. October 2012]

I labeled specimens.

I took a short walk in the woods in the morning.

Now I am sorting specimens & just labeled and filing them into the collection.

At the end of the day I developed an organic unit tray based on the mass.

[11. Oct. 2012]

I drove out to Dominiques this morning and picked up more drawers and boxes of specimens.

[KNUR 8399] is Sphaeroceridae with reduced wings. It keys to Aptilotus in MND. I requested Marshall (1983).

[KNUR 8370] is wingless Ichneumonidae.

Keying using Gaulier & Huber (1993), p. 359 1 → 7 → 8 → Ichneumonidae p. 396 1 → Delia?

[12. October 2012]

I scanned Griffiths (1991) (#8).

I dissected the genitalia off of [KNUR 2264]. I broke its left hind leg off accidentally. I glued this to the paper point on which the specimen is mounted.

Now I am trying to based educated guesses based on my ^{limited} experience.

[KNUR 1964] → Delia?

2215 → Delia?

2685 mangled, but maybe Eucromomyia?

3638 Delia?

3773 is in bad shape and will require dissection to get anywhere with it.

4141 Delia?

4133 Pegomyia?

3755 Delia?

4756 Delia?

4998 Delia?

~~4779~~ Delia? 4999

5006 extremely mangled.

7384 Delia?

7645 Delia

- 7397 - Delia?
 7398 - Delia?
 7409 - Delia?
 7401 - This looks quite different. I
 will try to key it out.
 7390 - ?

Keying (KNUK 7401) in MND, p. 1102 10 → 14 →
 16 → 18 → 24 → 25 → 27 → 28 → 29 → 32 → 38 → 39 → 40 →
 41 → 42 → 43 → 54 → Pegohylemyia?

Now I am trying to key (KNUK 8349)
 using Marshall (1983), p. 1902 1 → 2 → 3 →
 I am going to have to dissect this thing.
 I did dissect off the abdomen, placing
 it in KOH.

Now I am trying to key (KNUK 2269)
 using Griffiths (1986), p. 602 1 → 13 → 19 → 23 →
 30 →

I think I may have the wrong genus now
 so I compare the genitalia with Griffiths'
 (1984) illustrations. Based on the illustrations
 in Hackett (1965), I think it is
Pegohylemyia. It appears they may
 now be in Botanophila. I may need
 Griffiths (1987). I might need Griffiths #6.

15. October 2012

I am keying Lumbricus worms I
 collected at my house yesterday.
 They are Lumbricus rubellus. (KNUK 8741)

Now I am examining the cleared genitalia
 of (KNUK 8349), on Aptilatus. It is
Aptilatus parvipennis. I photographed
 the terminalia.

I came over to Dominique's this morning.
 We set up an Arctos account for him,
 but for some reason I could not give him
 data entry permissions.

initial account data:
username: dcollet
password: toymus!!

We worked on data entry so that
 Dominique will be able to perform
 data entry himself.

16. October 2012

I entered ~~AM:O~~ ~~VAM:Ent:Obs~~ records from Marshall (1983).

Sequences for the Hymenoptera we submitted last month have been uploaded to BOLD. 67/95 specimens were successfully sequenced, but it appears on first glance that most of the specimens for which sequences were not obtained were older specimens (circa 2004).

I attended the meeting with Jim Kvard in the morning.

I took a nice walk around the Continental Loop as the snow came down. It was beautiful.

I worked on examining Hymenoptera sequence data and trying to obtain molecular IDs until 14:00, when it was time for the regional I&M program teleconference.

17. October 2012

I did more updating of Arctos records based on DNA barcoding data.

I did some corresponding related to regional I&M.

I pulled Arachnid specimens for Laura Woodward to use at our upcoming Spooky Season event.

I examined specimen [KMR:Ent: 7175] trying to determine if it is *V. cyanus* or *V. nitidus*, but I could not see the characters on the ovipositor used for identification.

18. October 2012

I started out catching up on regional I&M stuff and on related correspondence.

I drove over to Dominiquis in the afternoon and labeled specimens. I found that I was labeling type specimens from Matt MacGown! These were *Pseudocryptus borealis* MacGown (1979).

Back at work, I requested Mac Gown (1979) through ARLIS.

I talked with Anna-Marie Pearson about sampling design.

Now I am sorting specimens.

KVWK 8169 looks like Helconyx serrata.

It has lots of mites on it.

8170 is the same.

8171

8172

8174

8175

8181

8180

8178

8176

8177 - Scathophagidae ♂

All like the specimen I had identified as H. serrata, but there is color variation.

(19 October - 2012)

I worked on molecular IDs for more of my Hymenoptera specimens.

I did more correspondence relating to sampling design of the regional IDM program.

Curious as to whether or not I have males in my culture of Badonnelia titii, I gulled out one of the small, dark, fast-running ~~male~~ wingless forms out using an aspirator. Comparison of this specimen with illustrations in Pearson (1958) showed that this is a ♂. I photographed this specimen (frames 4065-4070). I also photographed the culture dish and original collection location, the drain in the lab (frames 1760-1769).

I also worked at home in the evening on posting related to the Badonnelia on Arctos.

64

20. October 2012

I rose early and worked on *Schroenomidae*, checking their sequences against BOLD.

I found that the images for the following specimens were mixed up:

7330

7356

7448

7500

7573

7611

7618

7621

I could not fix this, so I will need to contact a BOLD data manager.

~~The internet~~

22. October 2012

E-mail and the internet are down today, so I may head home, where I can work on the BOLD sequences.

I took a video of *Balanocella* feeding.

At home, I continued scrutinizing the *Hymenoptera* DNA barcoding results, querying the sequences against the BOLD database.

23. October 2012

I finished entering checklist data from Marshall (1983).

I attended a 10:00 meeting (phone conference) with Trevor Doward, John Morton, Libby, and Ed Berg on DNA barcoding of lichens.

I did some data entry of Dominiguez's willow gall specimens.

[24. October 2012]

I talked with Robert Lieberman for some time about sampling design for the regional EDM program. He wants to use subjective sampling and relive methods on a small number of refuges.

I continued working on entering data for some of Dominiques specimens.

I worked on labeling ~~the lab~~ re-labeling KNUK specimens of Coleoptera, Neuroptera, and Orthoptera with 2d barcode labels.

[25. October 2012]

Today I am examining the left midleg of [KNUK:Ent:5275]. I photographed this leg through the stereoscope (frames 4074-4103).

Measurements under compound scope at 40x.

segment	length (ticks @ 40x).
coxa	61 20
trochanter	39
femur femur	41
tibia	39
tarsus	44

The coxal style is about 13 ticks long at 40x.

I traced a montage image of the left midleg, mounting the leg on a slide and using the stereoscope to see the details I am illustrating.

There is a pit structure on the apex of the tibia, hidden under scales.

[26. October 2012]

I crushed some dried dog food and fed this to my culture of *Badionetia*. They fell upon it readily.

I started preparing Trichoptera to go out to Flint.

I made a bunch of point mounts.

29 October 2012

I did some data entry on Collet material.

I sent some notes on Padonnelia titus to ~~sent~~ to Todd for posting on Facebook.

I labeled KNUR:Ento specimens.

30 October 2012

I am processing bulk sample

KNUR:Ento: 7179

Gammaridae	☒	::	7179	
Ephemeroptera	☒	"	7179A	8768
Heptageniidae			7179B	8769
Plecoptera	☒		7179C	8770
Diptera	☒		7179D	8771
Platyhelminthes			7179E	8772
Oligochaeta			7179F	8773
Cicadellidae			7179G	8774

I performed data entry on Kenai REA specimens, some Collet material, and other specimens.

Using an aspirator, I collected some Padonnelia for E. L. Mockford.

♀ ☐
♂ " ...
imm. " ...

} I quickly lost count.

I also looked through a dump of dried moss that had been in with my culture of bristletails from Lurnagain Arm. I quickly found eggs singly. These were about 1.0mm long, dark, irregular, and attached glued to bits of moss. There were often other things glued to the egg like pieces of sand, moss leaves, and grass rendering them inconspicuous. I photographed and then dissected one egg. In it was a young viable embryo. I am curious as to whether or not the eggs will hatch without cold weather.

[31 October 2002]

I drove to Dominiquis this morning to check on him and to get specimen data for some of his specimens that I cannot find in his database.

[9622 G Jim's Landing] - This is a plastic box of Salix sitchensis galls. Dominiquis said that there might not be data for some of these. We found this on a hard copy with a date of "2-Jan-2010" or "4/25/10". There is some confusion as to which record. It probably was record [9623 I].

[3438 G type collection sitchensis] This gall had been under water on a gravel bar in the river at Jim's Landing. It is a plastic box of S. sitchensis galls.

This number is incorrect. It may be [7438 I], also from Jim's Landing. This record says it should be the paratype galls.

[A20] [7920 G] - These are more S. sitchensis galls. ("1 of 3" I). I found the record in a database hard copy, but there was no data.

[7451 G] (or 7431 G) - more S. sitchensis galls. These have been under water. Found it in a hard copy of the database! Jim's Landing "4/20/2007", no other data.

[7771 G], more S. sitchensis galls. Jim's Landing, "4/24/2008"

One that looks like 9622 is 9622, from Jim's Landing.

[2237 G], more S. sitchensis galls. This must be [7237 I], a big series.

[5482 G], more S. sitchensis. From Seward.

[7803 G] larval S. sitchensis in a vial.

[5920 G], vial. - This is not right.

Found this in "new Culler DB.cds", Alaska, near parking lot, mi 20 creek, Seward Hwy". No date, but 7811 is from "07/11/08" and 7791 is from "4/10/2005", so it would have been between these dates. This locality is the parking lot at 20mi River.

[79206] is a ^{spring} ~~summer~~ gall.
 [59206] are recently emerged ♂, ♀, exuviae.

Ratdiphaga specimens and associated galls should be sent to

Emer. Prof. Junichi Yukawa
 Kyushu University
 Matsuzaki 1-5-12
 Higashi-ku, Fukuoka-shi
 Japan 813-0035

Back at the refuge, I pulled as many bristletail eggs as I could find from the clump of grass and lichen that had been in with the culture of bristletails. There were also *Oribatid* mites in this clump.

I also looked through some of the sand that had lined the bottom of the terrarium. There were no eggs in the sand.

All of the eggs were laid singly. In the one case where two eggs were glued together, one was black and firm while the other was pliable and light brown, indicating that they had been laid at

different times. There was one other freshly laid brown egg. The rest were black. In all, I had gathered 24 eggs.

[2. November. 2012]

I am missioning some iButtons to monitor temperatures of lab cultures, etc. I am having the iButtons take a measurement every 120 minutes, which gives a mission length of 170 days.

I placed the eggs in three dishes lined with a paper towel

dish	# eggs
1	8
2	8
3	7

I could only find 23 eggs. I put a vial of water stopped with cotton into each petri dish and also added the iButtons.

I have 3 treatments I want to apply

- 1: room temperature
- 2: refrigerator temperature
3. refrigerator → freezer → refrigerator

I am going to assign treatments 1:3 to

dishes 1:3.

sample(1:3, size=3, replace=FALSE)

[1] 2 1 3

So

dish 1 -> treatment 2

dish 2 -> treatment 1

dish 3 -> treatment 3

So that is what I did. dishes 1 and 3 I put in the refrigerator; dish 2 I put on the lab bench.

I performed data entry on Collet specimens.

I checked it I am checking idButtons that I left in the fridge and freezer in the biology lab. I am using the small medicine fridge and its little ice box, not the colder storage freezer. The ice box is at -4.5°C to -3.0°C ; the fridge is at 3.5°C to 4.5°C . I moved the idButton in the ice box to the tray just beneath the ice box to see if its temperature is intermediate.

Now I am doing some rough sorting.

[KUR:Ent:7845] I had identified on Feb. 2

as Platygastridae.

7844 I had identified on the same day as Megaspilidae.

7834

7829

7832

7842

7837

7841

7830

7838

7839

7835

7831

7833

7840

7836

7843

} Syrphidae ✓

} Cicadellidae ✓

} Dolichopodidae ✓

Empidoidea ✓

Muscidae ✓

Ichneumonidae ✓

Braconidae ✓

} Ephyridae ✓

Ceratopogonidae

I checked the idButton that had been in the tray beneath the ice box. It read -3.5°C , just as cold as the ice box. I moved it to the topmost rack of the fridge at 2:45 pm.

I printed off labels for a bunch of vial and herb specimens.

[7. Nov. 2012]

All our biology stuff met at the Upper Oaker Lake cabin today for planning. It was a cold but beautiful day. For me, two tasks that we decided that I should accomplish were

1. Compile Kenai DNA barcode library to post as article in upcoming AKES Newsletter.
2. Insect ecology project: defoliation.

[8. Nov. 2012]

I worked on testing WordPress on the akentsoc.org website. I think we will move to this platform very soon.

I labeled some of Dominiquis specimens

[9. Nov. 2012]

Much of the day was spent in meetings.

I did work a little on the AKES website and I did work on labeling vial specimens.

[13. Nov. 2012]

Today I will be getting ready for a talk this evening at the garden club.

I am bringing

KNUR:Ento:7010	<u>Lumbricus terrestris</u>
8612	<u>Lumbricus terrestris</u>
8741	<u>Lumbricus rubellus</u>
7094	<u>Dendrobates aetnaea</u>
8686	<u>Octolasion typhaeum</u>

to the garden club meeting tonight.

I put the petri dish #3 of Peluridiobius eggs in the freezer. These had been in the refrigerator with dish #1. I only moved them up into the icebox, where I will leave them for 2-4 weeks, simulating winter.

In the evening, I presented at the garden club meeting about worms along with Tom Gotcher and Bruce King.

[14. Nov. 2012]

I scanned Griffiths (1993).

I received Griffiths (1993), so now I am trying to key [KNMR 6062] using this key, p. 1604 1→14→18→22→33→47→52→53→57→58→62→64→69→71→74→77→80→113→114→115→122→123→ Delia bucculenta

I photographed the genitalia (frames 4127-4128).

KNMR:Ent: 6065 and 6061 appear to be the same, but I did not dissect them.

Now I am trying to key KNMR:Ent: 7285, same key. 1→14→18→22→33→47→52→53→57→58→62→64→65→67→!

↳ 69→71→74→77→80→

I think it might be Lasionna.

↳ Griffiths (2003), p. 2478 1→2→5→6→7→8→
Lasionna atricaudum

I photographed this specimen.

[15. Nov. 2012]

I am examining a vial with label data

BC. Osceyous; Mt Kobau; el. 560m 14 VII - 23 VIII D. Blades, C. Maier SOCAP-LA4 MICROCORYPHIA	ROYAL BRITISH COLUMBIA MUSEUM ENT991-69983
--	--

This vial contains numerous bristletails.

Mesomachilis n. sp. A

♂
♀

KNMR:Ent: 8791

Machilium

♂

KNMR:Ent: 8795

There was no date, but Maier collected other specimens from Mt. Kobau in 1981.

Examining a specimen with label
data

CAN; BC; Holberg; RAC06-32
 50°40'18.4"N 128°16'38.6"W
 18 August 2006 Robert A.
 Cannings; Copley, Claudia and
 Darren; and Miskelly, James

Royal British
 Columbia Museum
 ENT006-002801

RAC06-32

In the vial is a single, dark bristle tail,
 Petrobium (scales on antennal base but not
 flagellum). Lateral ocelli quite pole-shaped
 (constricted medially). This is a ♂. The
 number of eversible vesicles on coxites VI is
 a little hard to judge, but I think it is 1+1.

I think it is *P. submutans*.

↳ [KNUR:Ento: 8796] type!

↳ [KNUR:Ento: 8976]

Examining a specimen with label
data

MEAGER CK
 HOT SPRINGS
 8 Oct 1989
 G E HUTCHINGS

ENT991-64751

This is a mature ♂ *Petrobius*.
 Lateral ocelli are typical *P. vaticus*.



lateral ocellus

There are large sensory
 fields on the fore femora
 as in Storms description

of *P. canadensis*.

↳ [KNUR:Ento: 8797]

I packaged a loan of bristle tails to
 be shipped back to RBCM.

I dissected the abdomen off of [KNUR:Ento: 3848]
 and placed it in KOH.

I also removed the abdomen of
 [KNUR:Ento: 764] and placed this in KOH.

[16. Nov. 2012]

I drove to Fred Meyer with Renee to purchase double sided tape for attaching barcode labels to Berg lichen and specimens.

I dissected the genitalia of [KNUK:Ents: 3845] and confirmed that it is Delia lineariventris. I started at Delia lineariventris in Griffiths (1993) in the Delia key and traced it back some. I also compared it with illustrations in Griffiths (1991).

I photographed the genitalia (frames 4172-4141)

I also dissected the genitalia of [KNUK:Ents: 7641]. I keying using Griffiths (1993), p. 1604
1 → 14 → 18 → 22 → 33 → 47 → 52 → 53 → 57 → 58 → 59 → 60 → ...

After looking more at keys and available figures, I think this is Pegomya. I will need Griffiths (1982, 1983).

[19. Nov. 2012]

Mir accompanied me to work today. She worked on putting ~~Acetabularia~~ Baccharis labels on lichen specimens from Ed Berg. She then worked on making print mounts for me.

I dissected removed the abdomen from Anthomyid specimen [KNUK:Ents: 4447] and placed it in KOH. I also removed the abdomens from [KNUK:Ents: 4448] and [4442].

[20. Nov. 2012]

I will be examining genitalia of [KNUK:Ents: 4447]. This looks like Delia lineariventris, with genitalia like [KNUK:Ents: 3845]. It is.

Nest is [KNUK:Ents: 4448]. This is also D. lineariventris.

Nest is [KNUK:Ents: 4442]. This is also D. lineariventris.

I worked on importing/processing AK DNA barcode ~~and~~ records for building DNA barcode library and for checklisting

Examining a bristletail with specimen

data

BC, VANC. ISL.
TSUSIAT FALLS
9 MAY 1981
RAC

ROYAL BRITISH
COLUMBIA MUSEUM
ENT991-163813

This is a ♂ *Petridiobius arcticus*.

↳ [K.M.M.: Ento: 8798]

Examining a bristletail specimen with
label data

CHI-5
July 18/96
Machilidae

This is a ♀ *Mesomachilis*.

↳ [K.M.M.: Ento: 8799]

[21. Nov. 2012]

Examining a bristletail with label

data

B.C., Dundas Is
1.5 km S. of
Arniston Point
21 JUL 1987
C.S. Guppy

ROYAL BRITISH
COLUMBIA MUSEUM
ENT991-163093

[C87-6]

This is an immature ♀ *P. arcticus* &
I'm pretty sure.

↳ [K.M.M.: Ento: 8800]

[26. Nov. 2012]

I did some correspondence relating to
regional IEM. I spoke with Mike
Ragg over the phone about defoliators.

I am going to try to buy a
Pentatomid brought to me yesterday
by the Browns. It showed up in
their house after they had returned
home from a drive from the east
coast (Pennsylvania, etc.) through
Canada to Masilof. Keying using
Slater & Baranowski (1970), p. 40
1 → 3 → 9 → 12 → 13 → 14 → 18 → 20 → 22 → 24 → 26 →

Holcostethus? Keying using McDonald (1982),
p. 5 1→5→6→ abbreviatus? Looks a lot
like Palearctic H. sphaelatus. I am
leaving this as Holcostethus.

↳ [KNWR:Ento:8803]

[27. Nov. 2012]

I removed dish #3 of bristletail eggs
from the ice box to the fridge with
dish #1.

I removed the abdomen from [KNWR:Ento:1964]
and [KNWR:Ento:2265] and [KNWR:Ento:3633].

Examining a bristletail specimen
with label data only

[CC09-24]

It is a ♀ Pelidnotus noticus.

↳ [KNWR:Ento:8801]

[28. Nov. 2012]

I am again looking at specimen
[KNWR:Ento:8801], this time to remove
two legs to send to Alan de
Oliveira for molecular work.

I first took some photographs of
the specimen.

I removed the left middle and hind
legs to send to Alan.

[19. Nov. 2012]

I am keying a ♀ Delia [KNWR:Ento:
3633], using Griffiths (1993), p. 1664 1→14→
18→22→33→34→36→38→39→40→41→42→

Delia echinata.

Now examining [KNWR:Ento:2265].
This is Delia lineiventris.

Now examining [KNWR:Ento:1964]. Keying
using Griffiths (1993), p. 1664 1→2→14→18→
22→33→47→52→53→57→58→59→

↳ 62→64→69→71→

74→77→80→113→114→115→122→125→126→127→

D. albula albula? no. 128 → 134 → 135 → 137 →
138 → 140 → 141 → 142 → no.

↳ 143 → 145 → 147 → 154 → 155 → 158 →

160 → 161 → 162 → D. prostrata? & think so.

Examining contents of a vial with label data

Formerly part of
DB97-006
② Thysanura

These are 2 ♀ and 1 ♂ Pedetonotus calcaratus.

↳ KNUK:Ento:8802

30. Nov. 2012

I mostly worked on reconciling VAM (KNUK) BOLD DNA barcode records from Alaska.

Examining a vial of specimens with label data

[QC 83-2] [ENT991-62472]

These are Petridiobius arcticus, all smallish individuals and at least mostly ♀.

♀:

♂:

→ [KNUK:Ento:8804]

3. Dec. 2012

I removed all of the bristletail eggs from the refrigerator.

Examining a specimen with label data

[CC09-28]

This looks like a Pedetonotus. It is a ♂. It has 2+2 ev. on II-III, sensory field on fore femora. Many long, filamentous setae anteriorly on leg mid tibia-tarsus. It has lateral ocelli similar to P. superior. I photographed this specimen.

↳ [KNUK:Ento:8805]

I started downloading 2012 MODIS data for the Kensi.

[4. Dec. 2012]

I restarted my script downloading MODIS data. It had been interrupted.

I worked on formatting BOLD data to go into UAM:Ents Obs.

Examining a specimen with label data [CC09-38]. It is a single ♀ much like [KNUR:Ents:8801].

→ [KNUR:Ents:8806]

I entered data for one of our Petridiobius specimens ([KNUR:Ents:8807]).

[5. Dec. 2012]

I spent most of the day working on moving BOLD records onto UAMObs:Ents. I went home in the afternoon and continued on this, moving 343 records by the end of the day.

[6. Dec. 2012]

My script finished downloading MODIS VI data for 2012. I mosaiced all of these and started clipping them to the Kenai.

Examining a vial with label data

[CC09-22]

This contains 1 ♂ and 1 ♀ Petridiobius like others I have recently been looking at from mountains of SE BC.

→ [KNUR:Ents:8808]

[7. Dec. 2012]

My script finished cropping NDVI data. I am ready to start considering analyses. I think I will try analyzing a short portion of space and time first.

I spent most of the day working on processing these data; just a subset covering the Mystery Hills.

[10 Dec. 2012]

I worked on importing arthropod DNA barcode records into Arctos, moving 891 records.

I worked on MODIS data as well, struggling to figure out how to read/export image output from TIMESAT.

[11. Dec. 2012]

I removed the abdomen from *Anthomyia* specimen [4641]. Also, I did the same for [KUNM:Ents: 3955].

Re-examining specimen with label ENT991-63146. I think it is ♀ *Petridiobius*.

Now examining specimen with label data

ROYAL BRITISH
COLUMBIA MUSEUM
ENT991-162716

[C89-15 PITFALL]

This looks like a ♂ *Pedentatus submutans*, but I am surprised to see it so far from the coast (Ashcroft). This does not seem at all like the right habitat for *P. submutans*. It must be *Mesomachilis*. It has 21 res. on *arrostensis* II-V only. I think this is a subadult *Mesomachilis canadensis*.

→ [KUNM:Ents: 8809]

I was able to project some output images from TIMESAT in R / ArcMap. I think I have the value of season start/stop too low at 0.3. Re-running at 0.5 for both of these. I think it may be difficult to calculate seasonality parameters in coniferous forests here.

I worked on printing re gencode vial labels.

[12. Dec. 2012]

Dissecting genitalia from
[KNUR:Ento: 3955]. It is Delia
lineariventris. [KNUR:Ento: 4111] is also
Delia lineariventris.

Now trying to key [KNUR:Ento: 8810]
using MNP, g. 1160 1 → 2 → 5 → 6 → 10 → 14 → 16 →
18 → 24 → 25 → 27 → 28 → 29 → 32 → 38 → 39 → 40 →
49 → Eremomyia? or Lasiozona?
It is Delia extensa. The 4th
sternite is unique.

I removed the abdomen of specimen
[KNUR:Ento: 7397] to place it in KOH.

[13. Dec. 2012]

[KNUR:Ento: ~~71~~ 7397] is Delia lineariventris.

~~I~~ I worked on the MODIS analysis,
making good progress today.

I photographed Coccinellid specimen
[KNUR:Ento: 8367].

[17. Dec. 2012]

I worked mostly on trying to process
2012 MODIS EVI data.

I removed the abdomens of specimens
[KNUR:Ento: 4756] and [KNUR:Ento: 4998].

[18. Dec. 2012]

Examining [KNUR:Ento: 4998]. It is
Delia lineariventris. [KNUR:Ento: 4756] is
also Delia lineariventris.

I removed abdomen from [KNUR:Ento: 4999]
and [KNUR:Ento: 7384].

[19. Dec. 2012]

[KNUR:Ento: 7384] is Delia lineariventris.
[KNUR:Ento: 4999] is also D. lineariventris.

I attended an instructional by Pam on
how to work with the new website. I
spent some of the afternoon adding content
that John wanted posted.

I continued working on the MODIS data.

(20 Dec. 2012)

I removed the abdomen from specimen
 (KUMK:Ent:5771), (5770), (4428)

I completed a statement of work for
 contracting of DNA barcoding.

Examining contents of a vial with
 label data (CC09-5).

These are 4 Pedestertus submutans

♂: " "

imm: "

♀: "

→ (KUMK:Ent:8811)

(21 Dec. 2012)

Examining (KUMK:Ent:4428). It is
Delia lineiventris. (KUMK:Ent:5770) and
 (5771) are also D. lineiventris.

(26 Dec. 2012)

I worked on data entry, re-entering
 data into Arctos for records edited or
 created since December 2.

I ended up spending the day on Hensai
 Peninsula DNA barcode records for
 John.

(31 Dec. 2012)

I worked mostly on helping John with
 the Journal of Wildlife Management
 article he is working on.

[2. Jan. 2013]

I removed the abdomen from specimen
[KNUR:Ento:4423].

[3. Jan. 2013]

I spent most of the day working on a map for a paper John is writing.

[KNUR:Ento:4423] is *Delia lineiventris*.

[4. Jan. 2013]

I spent some of the day at home catching on data entry from the data loss in December. In the evening I came to work and finished this.

[10. Jan. 2013]

I spent the morning getting Refuge Notebook articles posted to the website.

I removed the abdomen from specimen
[KNUR:Ento:4426] and [4450] and [7469]

I started making travel arrangements for the 2013 annual meeting of AKES.

Examining contents of a vial with label data

[CH99-01.P]

[MICROCORYTHIA/THYSANURA]

This is a mix of *Machilinus* and some of what look like *Pedestertus* submutans in poor shape.

Machilinus ♂ [KNUR:Ento:8812]
P. submutans ♀
imm

→ [KNUR:Ento:8813]

11. Jan. 2013

[KNUK:Ento: 4426] is Delia lineariventris
 [KNUK:Ento: 4450] is the same.
 [KNUK:Ento: 7404] is the same.

I am re-examining [KNUK:Ento: 8119] from
 Norwata, Okladom. These are 2 ♂ and
 4 ♀ Pedentus atr. or Petridichius. They
 look a lot like Petridichius sp. A from
 Eastern BC. The males have sensory
 fields on the fore femora and long setae on
 legs II much like "Petridichius sp. A".

The females have less pigmentation on
 the maxillary palpi, labial palpi, and legs
 than Wygodzinsky and Schmidt's (1980)
 illustrations of P. saltator.

The male is quite similar to a photograph
 of [KNUK:Ento: 8805], but the sensory field on
 the fore femora is smaller, the lateral ocelli
 extend farther medially, and the labial palps
 are, I think, truncated more obliquely.

14. Jan. 2013

I spent most of the day working on
 web sites: fixing the AKES membership
 form and making a staff page for KENUK
 Biology.

I removed the abdomen from specimen
 [KNUK:Ento: 7398] and [KNUK:Ento: 7645]

15. Jan. 2013

[KNUK:Ento: 7398] is Delia lineariventris.

[KNUK:Ento: 7645] is something different that

I do not recognize. It has strong spines
 on the 5th sternite.

Keying using Griffiths (1993), p. 1604

1 → 14 → 19 → 22 → 33 → 47 → 52 → 53 → 57 → 58 →
 59 → 60 → D. normalis? no. 100 62 →
 64 → 69 → 71 → It is Delia alaba.

I worked on MODIS data in preparation
 for presenting at the meeting at the end of
 the month.

[KNUK:Ento: 8173], a ♂ I think is Helconygidia.

[16. Jan. 2013]

I took care of AKES-related stuff and worked on masking fires from the MODIS data. I also made some updates on the Kenai ~~State~~ web page.

Dominique and Sayde stopped by in the afternoon. It was good to visit with them. Dominique left some specimens for me to send out.

[17. Jan. 2013]

I took the NEMS training, which took a good portion of the morning.

I had suspected that scorpions I had collected in Oklatooza were Centruroides vittatus. I did some tracking and confirmed this.

[18. Jan. 2013]

I did some work on the AKES website. I started on my master gardener presentation.

[22. Jan. 2013]

I worked on processing MODIS data to be mapped for the presentation.

[23. Jan. 2013]

I worked on my AKES MODIS presentation.

[24. Jan. 2013]

I drove to Kenai in the morning to mail lake sediment samples to Dave Puthou.

I spent the afternoon on my AKES presentations.

[28-29 January 2013]

These days I spent working on a basic entomology / IPM lecture for the Master Gardener class.

30 Jan. 2013

At 1300 I joined a teleconference in the defoliation study to take place this summer, (and for the next three years).

31 Jan 2013

I spent the morning on correspondence, etc.

Examining a bristledetail specimen with label data

Sample BIOUG00863-A01
BOLD ID: TTSOW533-11

This is Petrobium (scales on antennal scape but not flagellum). Both antennae have fallen off, but one is in the vial. This one is from Ontario, so should be *P. saltator*. It is small and immature. Both forelegs as well as one midleg are missing. 2+2 e.v. on mesosternite II-VI, → subgenus *Pedotantus*. This is an immature ♀. Coloration and morphology are quite consistent with Wygodzinsky & Schmitt (1980). This

immature ♀ has a short ovipositor, only slightly protruding from the IXth segment; gonocoxite as in figure 8P of Wygodzinsky and Schmitt (1980). I see no reason not to call it *Pedotantus saltator*.

KUMRL:ENTO:5514

Now examining specimen with label data

Sample 09BDARC-0015
BOLD ID: TTSOW231-10

It looks like ♀ *Machiloidea*. It is *Machiloidea banksii* based on coloration of the clypeus, ratio of length to width of segment IV of maxillary palpi, coloration of maxillary palpi.

KUMRL:ENTO:5515

Examining specimen with label data

Sample 10BBSIO-0180
BOLD ID: SIOCA180-10

{KNUK:Ent:8816}

It is Petrobiinae, Pedetontus submutans.
I cannot see well the eversible vesicles on
coxites II. This is a ♀, adult.

Now examining specimen with label
data

Sample 10BBSIO-0163
BOLD ID: SIOCA163-10

This looks like Petrobiinae (antennal
flagellum without scales; scape scaled).
It has strange labial palpi, extremely
expanded distally. It has 2+2 eversible
vesicles on coxites II-V, VI is clearly 1+1.
This is an adult ♂ in relatively good condition.
It is a Meximachilis. The labial
palpi are more expanded in this specimen
than in any other I ~~have~~ have seen
in Sturm (1991) or Hoplin (1994).

I need to request Wygodzinsky (1946).
I photographed this specimen (frames
4231-4240) → {KNUK:Ent:8517}

1. Feb. 2013.

I took care of some Kenai NWR web page
updates.

I am examining a specimen
with both the label data

Sample 10BBSIO-0200
BOLD ID: SIOCA200-10

This looks like an immature ♂
Pedetontus submutans → {KNUK:Ent:8518}

Now examining specimen with label

Sample 10BBSIO-0190
BOLD ID: SIOCA190-10

The antennae were broken off, but ~~the~~
one is in the vial. It is a ♀
Petrobiinae, with lateral ocelli more
like Petrobiobius than Pedetontus.

2+2 uv on coxites II-VI, very clearly visible. This is one of those tough Petridiobius / Pektontes specimens. The clypeus is predominantly dark with a pale median dorsoventral line. I think it is generally more darkly pigmented than Petridiobius arcticus and Stuenkel's illustrations of Petridiobius canadensis. → (KNWR:Ents. 8819)

4. Feb. 2013

I am examining a specimen with label data

Sample 10BBSIO-0196
BOLD ID: SIOCA196-10

♀ → (KNWR:Ents. 8820)

This is an adult ♀, I think ~~is~~ indistinguishable from Petridiobius arcticus. This one has less pigment than [SIOCA190-10]. [SIOCA190-10] had coxae completely dark; this one has only patches of pigment on the coxae. The clypeus is mostly pale with narrow, dark lateral bands. The lateral ocelli are identical to Petridiobius arcticus.

The pigmentation of the clypeus is consistent with illustrations of Stuenkel (2001) and Stuenkel and Darsner (2004). The processus triangularis has no pigment on it. My conclusion now is that I can ~~see~~ perceive no morphological difference between this ♀ individual and ♀s of Petridiobius arcticus / canadensis.

I took care of the nail run.

I re-examined specimen [SIOCA193-10], this time removing the right front leg to better examine the leg and lateral palp, which was concealed behind it.

This specimen seemed most similar to Meximachilis texensis based on the lateral palpi, form of lateral ocelli, and forelegs, but this specimen is quite distant from Cacabeumilpa. I will need to translate Kaplan (1974).

[5. Feb. 2013]

I started translating the key of Kaplin (1974).

I worked on solicitations for AKES staff.

I posted this week's Refuge Notebook.

I did some date entry in Arctos.

[KNUR:Ento:8179] is *Lauraniidae*. ♀

[KNUR:Ento:8173] is *Heleomyzeta* ♂

[6. Feb. 2013]

I finished translating the key of Kaplin (1974).

I am re-examining specimen [SI0CA16370].

Lateral ocelli are closest to *M. tursoni*, not sole-shaped, only about 2x as wide as long, definitely < 3x as wide as long.

22, 21 - counts of chains of segments of apical half of flagellum.

Sensory field on front femora not obvious, maybe absent.

The front femora do have a lot of short, stout setae as in *M. dampfi*.

Per Parameres IX apparently 1+8-segmented, the penis barely exceeding the parameres.

Labial palpi lack long, hair-like setae.

Form of fore femora closest to *M. dampfi*.

The maxillary palpi have what appears to be a sensory field on ectal side of segment 2.

Setae on fore femora do not exactly match *M. dampfi*, e.g., there are not nearly so many short, spine-like setae on the fore tibia as in *M. dampfi*.

I must leave this as *Maximachilis* since it is not consistent with any of the three described species.

Now I am pinning [KNUR:Ento:7116], three specimens.

I also pinned three Lepidoptera that were included in [KNUR:Ento:7117]

Keying specimen [KNUR:Ento:8146] using Arnett and Thomas (2000), p. 160 1→4→32→70→42→43→44→45→41→47→48→49→
Agabus.

I think [KNUR:Ento:8354] is *Scydmocerina*.

[7. Feb. 2013]

I made preparations for flying a moose survey on Saturday, where I would be an observer.

Trying to key (KMP:Ento:8354) using Arnett and Thomas (2000), p. 261 1→2→3→5→9→11→12→15→16→17→ Sterichnus?

[KMP:Ento:8359], [8377], and [8358] are Ceraphronidae.

[11. Feb. 2013]

I worked on an article on Badenella for the AKE Newsletter.

[12. Feb. 2013]

I worked on an article on MODIS imagery for the Refuge Notebook.

[13. Feb. 2013]

I flew in the morning with Dusty on a moose survey. In the afternoon I continued on my Refuge Notebook article.

[14. Feb. 2013]

I examined the Cooper Lake ^{SNOTEC} ~~KAVS~~ data for patterns in snow depth/temp. related to recent defoliation events. The only possible relationship was highest snow depth in winter 2011-2012, then highest defoliation area on the peninsula in summer 2012, but this did not hold for other years.

I also worked on the KMP website some.

[15. Feb. 2013]

I am examining VAM Hesperomastema specimen with label data

USA: ALASKA: P.O.W. Mtn. NE §
Black Lk p8 cl. 3219ft, 55.5853°N,
132.89093°W ± 3m steep bank,
Harrimanella stelleriana, Luetkea
pectinata, Vaccinium caespitosum,
hand coll., 8 JUL 2011 C.E.
Bickford VAM100111150

I compared this with Gruber (1970) and the key of Edgwa (1996). It is H. modestum (Banks, 1894).

I worked on the AKES Newsletter in the afternoon.

19. Feb. 2013

I finished Letting et al's Newsletter article and made some updates to the KNUK biology staff page.

I pinned specimens in the lab.

Willow campground pen trap

pinned specimens: 40 → 10047, 10052-10090
Ptenothrix ☒ ∴ ~~10052-100~~ 10091

20. Feb. 2013

I transferred a few Dalmanella from my main culture dish to a small petri dish to expand this culture.

Keying [KNUK:Ent:2084], a ♂ Muscid using MWD, p. 1118 1→15→18→19 → Thricops

Now keying using Malloch (1921), p. 272
 1→3→5→6→7→20→11 → johnsoni?

This is now Thricops rufisquamis.

25. Feb. 2013

I have been editing the AKES Newsletter, Rehner's Beaver article.

Joha asked me to look into testing for Elodea using environmental barcoding / DNA methods.

26. Feb. 2013

I took care of some KNUK web page updates and worked a little on the AKES Newsletter.

[KNUK:Ent:4260] is ♂ Anthomyiidae. I dissected off the abdomen.

[KNUK:Ent:2243], a ♀, I think is not Larria spathophora, not even Larriidae.

2563
 Keying [KNUK:Ent:4260] using MWD, p. 1118
 1→15→16→17 → Larria

KUMK:Ento: 2836

2834

2835

2846

2841

2826

2818

All of these are ♂'s from the same location and appear to be the same species, with 4-6 paired yellow spots on the abdomen.

Fannia

Keying [KUMK:Ento: 2836] using Chilcote (1960).

p. 44 A → B → C → pusio subgroup?

♂ key, p. 45 4 → 5 → 6!

↳ 7 → leucosticta?! no.

A → M →

Lujans conicularis subgroup, which fits many characters including yellow abdomen.

p. 46 47 → 48 → 54 → 55 → conicularis?! close.

[27 Feb. 2013]

I dissected the genitalia of [KUMK:Ento: 4260].

It is unfamiliar. Keying using MNP,

p. 1100 1 → 3 → 5 → 6 → 10 → 14 → 16 → 18 → 24 → 25 → 27 →

28 → 29 → 32 → 38 → 39 → 46 → 47 → 50 → 51 → 44 →

Acrostilpna?! → Near Lasioinna.

Keying using Griffiths (2003), p. 2478

1 → 2 → 5 → 9 → 10 → 16 → 17 → 19 →! I think wrong

pusio.

It is not Hydrophoria / Zyghe because the lower calypter is smaller than the upper one.

It is not Leucophora. I don't think it is Delia. I am going to have to give up on this one for now.

I am re-examining [KUMK:Ento: 2836].

The lower calypter is linear, placing it in the serena group or Cochomyia.

p. 44 A → M → N → O → p. 47, 61 → (3 → 64)!

↳ 65 → 66 →

It is Fannia subpellucens.

2816	♀	} <u>F. subpellucens</u>
2833	♀	
2831	♀	
2828	♀	
2845	♂	
2838	♀	
2837	♀	
2842	♀	
2819	♀	
2749	♀	
2822	♀	}
2844	♂	
2808	♂	

2142 ♀ } F. subpellucens
 2002 ♀ }
 1534 ♀ }
 4909 ♀ }

[1. March. 2013]

I dealt with some herbarium specimens.

When servicing my cultures, I found a Staphilinid in with my bristletails. I collected this. It looks like Stenus, → [KNUR: Ent: 5831]

[4. March. 2013]

I worked on the AKES Newsletter.

Keying [KNUR: Ent: 2563] using Chelcatt (1966), p. 44 A → M → P → Q → postica subgroup R → opathiophora subgroup ?77 → opathiophora!

[5. March. 2013]

I worked on the AKES Newsletter ~~from~~ and then on a DNA barcoding scope of work for John. I did some data entry for specimens from the 2003 Skyline Carabid beetle study.

[KNUR: Ent: 2523] is Fanniidae.

A → M → aerena group N → aerena subgroup ♂58

→ sericata no, nor aerena

O → aerena subgroup ♂61 → 63 →

I think this one is a dark Fannia subpellucens.

[1. March. 2013]

[KNUR: Ent: 2629] is Anthomyiidae, ♀.

[KNUR: Ent: 2525] is Fanniidae, ♀.

2574 is Fanniidae, ♀.

2573 is Fanniidae, ♀.

2590 is Fanniidae, ♀.

2587 is Fanniidae, ♂.

2562 Fanniidae, ♀.

2559 Fanniidae, ♀.

2240 Fanniidae, ♂.

2239 Fanniidae, ♀.

2238 Fanniidae, ♂.

2236	Lanniidae	♀
2235	Lanniidae	♀
2229	Lanniidae	♀
2226	Lachnidae	♂
2225	Lanniidae	♀
2224	Lanniidae	♂
2222	Lanniidae	♀
2221	Lanniidae	♀
2219	Lanniidae	♀
2218	Lanniidae	♂
2217	Lanniidae	♀
2148	Lanniidae	♀
2247	Lanniidae	♀
2141	Lanniidae	♀
2106	Lanniidae	♀
2071	Lanniidae	♀
2003	Lanniidae	♂
1950	Lanniidae	♀
1949	Lanniidae	♀
1948	Lanniidae	♂
1947	Lanniidae	♀
1946	Lanniidae	♀
1945	Lanniidae	♀
1944	Lanniidae	♀
1943	Lanniidae	♀
1942	Lanniidae	♀
1941	Lanniidae	♂

1940	Lanniidae	♀
1939	Lanniidae	♀
1938	Lanniidae	♂
1937	Lanniidae	♂
1936	Lanniidae	♂
1935	Lanniidae	♀
1934	Lanniidae	♀
1933	Lanniidae	♀
1932	Lanniidae	♂
1931	Lanniidae	♀
1930	Lanniidae	♀
1929	Lanniidae	♀
1928	Lanniidae	♂
1927	Lanniidae	♂
1926	Lanniidae	♂
1925	Lanniidae	♀
1924	Lanniidae	♀
1923	Lanniidae	♀
1922	Lanniidae	♀
1921	Lanniidae	♂
1920	Lanniidae	♂
1919	Lanniidae	♀
1918	Lanniidae	♀
1917	Lanniidae	♀
1916	Lanniidae	♀
1915	Lanniidae	♀
1914	Lanniidae	♀

1913	Lanniidae	♀
1912	Lanniidae	♀
1911	Lanniidae	♀
1910	Lanniidae	♂
1909	Lanniidae	♀
1908	Lanniidae	♀
1907	Lanniidae	♀
1906	Lanniidae	♀

(7. March 2013)

I attended the biology staff meeting in the morning. John wanted me to relate % mortality on the ground to MODIS defoliation data that I have been generating.

(8. March 2013)

I worked on labelling specimens.

(9. March 2013)

(KNWR:Ent: 1916) is *Lannia spatuliphora*.

KNWR:Ent: 2240 is missing most legs. Probably

L. spatuliphora, but would need to dissect genitalia.

2589	2003	1919
2593	2071	1921
2595	2141	1922
2559	1936	1923
2239	1937	1924
2225	1938	1925
2229	1939	
2233	1940	
2235	1941	
2236	1942	
2238	1944	
2247	1945	
2148	1926	
2218	1927	
2219	1928	
2221	1929	
2222	1931	
2224	1932	
1946	1933	
1947	1934	
1948	1935	
1949	1917	
1950	1918	

all *Lannia spatuliphora*

I am sorting more Muscidae.

2327	- <u>L. spathiophora</u>	♀
2326	" "	♀
2325	" "	♀
2324	" "	♂
2323	" "	♀
2322	" "	♂

↳ This one has the genitalia extended, presenting a good lateral view. This agrees with Fig. 55 in Chilcote (1960).

2321	<u>L. spathiophora</u>	♀
2320	" "	♀
2308	Muscidae	♂
2307	<u>L. spathiophora</u>	♀
2306	Muscidae	♀
2305	Fanniidae	♀
2304	<u>L. spathiophora</u>	♀
2303	" "	♀
2302	- interesting ♂ Muscidae with long proboscis. Piercing using MND.	
1118	1 → 2 → 3 → 4 → <u>Haematebena alais</u>	
2301	<u>L. spathiophora</u>	♀
2344	" "	♀
2343	Muscidae	♀
2342	<u>L. spathiophora</u>	♀
2340	" "	♀
2339	" "	♀

Re-examining [KNWR:Ento:2005]

Chilcote (1960), p. 48 85-86 → postscript.

[KNWR:Ento:2000] is something different. Calling this Fannia for now.

[12. March. 2013]

I spent half the day working on the KNWR web page making posts for Andy, etc.

[13. March. 2013]

I worked on the AKES Newsletter, formatting Derek's article and putting all of the articles together for a final draft.

[KNWR:Ento:8525] is Microphorus investigator.

[14. March. 2013]

I got the AKES Newsletter out and did lots of labeling of specimens.

15 March 2013

KUMU: Ent: 1915 in Fannia spathioforma

1914		} all <u>F. spathioforma</u>
1913		
1912		
1906		
1907		
1908		
1909		
1910		
1911		
2220	♀	} <u>F. spathioforma</u>
2228	♀	
2230	♀	
2237	♀	
2241	♀	
2338	♀	} <u>F. spathioforma</u>
2337	♀	
2336	♀	
2335	♂	
4186	♂	Anthomyiidae
2332	♀	<u>F. spathioforma</u>
2331	♀	<u>F. spathioforma</u>
2330	-	has lots of mites!
2329	♀	<u>F. spathioforma</u>
2328	♂	<u>F. spathioforma</u>

^ This one also has label 4012 on it.

2360	♂	<u>F. spathioforma</u>
2359	♀	" "
2358	♂	" "
2357	♀	Muscidae
2356	♀	<u>F. spathioforma</u>
2355	♀	" "
2354	♀	" "
2353	♀	" "
2352	♀	" "
2351	♀	" "
2350	♀	" "
2349	♀	" "
2348	♀	" "
2347	♀	" "
2346	♀	" "
2345	♀	" "
2377	♀	" "
2373	♀	" "
2372	♀	" "
2371	♀	" "
2369	♀	" "
2368	♀	" "
2367	♀	" "
2365	♂	" "
2364	♀	" "
2363	♀	" "
2362	♀	" "

2361	♀	<u>Fannia spathiophora</u>
2394	♀	"
2392	♀	"
2371	♀	"
2390	♀	"
2387	♂	"
2388	♀	"
2387	♀	"
2386	♀	"
2385	♀	"
2384	♀	"
2383	♂	"
2382	♂	"
2381	♀	"
2380	♂	"
2379	♀	"
2378	♀	"
3301	♀	<u>Fanniidae</u>
3358	♀	<u>F. spathiophora</u>
3305	♀	"
2401	♀	"
2400	♀	"
2399	♀	"
2398	♀	"
2397	♀	"
2396	♀	"
4004	♂	This one is in bad

shape, but it is interesting.

I think it is Leucophora. It has a tubular, long proboscis.

3989 ♀ F. spathiophora

3987 ♀ "

3983 ♀ ~~Fannia~~ F. spathiophora

3979 ♀ F. spathiophora

3977 ♀ Fannia

→ Fannia. I need to check these. They look like F. spathiophora, but the palpi are not as spatulate as usual.

3976 ♀ F. spathiophora

3832 ♀ F. spathiophora - check etymology

3831 ♀ F. spathiophora

3678 ♀ Fanniidae

3649 ♀ Fanniidae

3648 ♀ Fanniidae

3606 ♀ Anthomyiidae

3529 ♀ Fannia spathiophora

3448 ♀ " "

3445 ♀ " "

3440 ♀ " "

3438 ♀ " "

4566 ♀ Fanniidae

4492 ♀ in bad shape, Not sure of family.

4735	♀	<u>Haematobosca albis</u>
4413	♂	Fanniidae
4377	♀	Anthomyiidae
4374	♀	<u>Fannia subpellucens?</u>
4315	♀	<u>Fannia subpellucens</u>
4314	♀	" " <i>Arch. cat. over</i>
4086	♀	badly damaged Anthomyiidae
		(I did some later entry.)
5810	♂	Fanniidae?
5809	♀	<u>F. spathiohora</u>
5808	♀	<u>F. spathiohora</u>
5807	♀	" "
5804	♂	" "
5803	♂	" "
5802	♂	" "
4191	♀	" "
4145	♂	<u>Fannia subpellucens</u>
4187	♂	" "
5009	♀	Anthomyiidae
4113	♂	Anthomyiidae
5711	♂	<u>Fannia spathiohora</u>
5714	♂	" "
5713	♂	" "
5591	♂	" "
5590	♂	" "
5592	♂	" "
5589	♂	" "

5588	♂	<u>Fannia spathiohora</u>
5817	♂	" "
5816	♂	" "
5815	♀	" "
5814 5814	♂	" "
5813	♀	Fanniidae
5812	♀	<u>Fannia spathiohora</u>
5811	♀	" "
7721	♀	Fanniidae
7781	♂	Fanniidae
7771	♀	Fanniidae
7265	♀	Fanniidae
7243	♀	" "
7367	♀	<u>Fannia subpellucens</u>

(18. March. 2013)

		(KUNR:Ent:7750) is <u>Fannia subpellucens</u> ♂
7762	♂	<u>F. subpellucens</u>
7746	♂	" "
5722	♀	<u>F. spathiohora</u>
5079	♂	<u>F. subpellucens</u>
5772	♀	<u>Haematobosca albis</u>
4251	♂	<u>F. subpellucens</u>
6101	♀	<u>F. spathiohora</u>
5957	♂	Fanniidae
1105	♀	<u>F. spathiohora</u>

6122	♀	<u>Fannia spathiophora</u>
6124	♀	" "
6127	♀	" "
6128	♀	" "
6129	♂	" "
6130	♂	" "
6131	♂	" "
6132	♀	" "
4564	♀	Fanniidae
5752	♀	Fanniidae
5956	♀	<u>F. spathiophora</u>
6030	♂	Anthomyiidae
6009	♀	Fanniidae
5887	♀	<u>F. spathiophora</u> Fanniidae
5888	♂	Fanniidae
5889	♀	" "
5891	♀	Fanniidae
5892	♂	Fanniidae
5893	♀	<u>F. spathiophora</u>
3987	♀	Fanniidae
3979	♀	" "
3983	♀	" "
3976	♀	" "
1905	♀	<u>F. spathiophora</u>
1904	♀	" "
1903	♀	" "
1902	♂	" "

} previously
examined.

1901	♀	<u>F. spathiophora</u>
1900	♀	" "
1898	♀	" "
1897	♀	" "
1896	♂	" "
1894	♀	" "
1893	♀	" "
1892	♀	" "
1891	♀	" "
1890	♀	" "
1889	♀	" "
1887	♀	" "
1886	♂	" "
1885	♀	" "
1884	♀	" "
1883	♀	Fanniidae
1882	♀	<u>F. spathiophora</u>
1881	♀	" "
1880	♂	" "
1879	♀	" "
1878	♂	" "
1877	♀	" "
1876	♀	" "
1875	♀	" "
1874	♂	" "
1873	♀	" "
1871	♀	" "

1870	♀	<u>Fannia spathiohora</u>	
1869	♀	"	"
1868	♀	"	"
1867	♀	"	"
1866	♀	"	"
1865	♀	"	"
1864	♂	"	"
1827	♀	"	"
1817	♀	"	"
1814	♀	"	"
1717	♀	"	"
1716	♀	"	"
1714	♀	"	"
1713	♀	"	"
1699	♀	"	"
1712	♀	"	"
1696	♀	"	"
1693	♀	"	"
1692	♀	"	"
1690	♀	"	"
1689	♀	"	"
1688	♀	"	"
1539	♀	"	"
1538	♀	"	"
1537	♀	Fanniidae	
1536	♀	<u>L. spathiohora</u>	
1535	♀	"	"

1533	♀	Fanniidae	
1532	♀	"	"
1502	♀	<u>Fannia spathiohora</u>	
14927	♀	"	"
1192	♀	"	"
1187	♀	Fanniidae	
1181	♂	Fanniidae	
5712	♂	Fanniidae	
5894	♀	Fanniidae	
5941	♂	<u>Fannia spathiohora</u>	
4242	♂	Fanniidae	
5942	♀	Fanniidae	
5943	♀	<u>L. spathiohora</u>	
5945	♀	<u>L. spathiohora</u>	
5946	♀	"	"
5949	♀	"	"
5950	♀	"	"
5951	♀	"	"
5720	♀	"	"
5721	♀	"	"
5723	♀	"	"
5724	♀	"	"
5726	♀	Fanniidae	
5750	♀	"	"
5775	♀	"	"
5776	♀	<u>Haematobesca alcis</u>	
5778	♀	"	"

5779	♀	<u>Fannia spathiophora</u>
5780	♀	" "
5781	♀	" "
5782	♀	" "
5785	♂	" "
5790	♀	" "
5586	♀	" "
5585	♀	" "
5584	♀	Fanniidae
5583	♀	Fanniidae <u>F. spathiophora</u>
5581	♀	" "
5421	♀	Fanniidae
5252	♀	Anthomyiidae
5233	♀	<u>Haematobosca alcis</u>
5203	♂	Fanniidae
5202	♀	<u>Fannia spathiophora</u>
5640	♀	<u>F. spathiophora</u>
5639	♀	" "
48105	♂	" "
4604	♀	Fanniidae
4603	♀	" "
4602	♀	" "

I took care of the mail run.

(19. March. 2013)

I worked on revising text of our JFWM manuscript on LTEMP.

From 10:00 am - noon I attended the all employee meeting.

Keying [KNUP: Ento: 7270] using MNP, p. 118 1 → 15 → 16 → 17

→ 18 → ~~19~~ 20 → 27 → 28 → 29 → 30 → 31
→ 32 → 33 → 34 → 35 → 37 → 38 → 40 → Ceenosis?
41 → 42 → 43 → Limosia

(20. March. 2013)

Keying [KNUP: Ento: 7270] using Hackett (1965), p. 158 1 → 2 → 4 → 5 → 6 → albina?
→ nigrescens?

I removed the abdomen and put this in KOI+ for tomorrow.

(21. March 2013) I inspected the terminalia of (KUMU:Ento: 7270). It looks like C. cilicincta, C. errans, or C. lutea. I think it is C. cilicincta.

I am attempting to key (KUMU:Ento: 8838), a ♀ Pegomya, using Hockett (1965), p. 117
1→2→8→H→~~isotoma~~?
→13→16→17→18→19→25→

(I gave up on this one for now.)

Keying (KUMU:Ento: 7121) using Ogger and Wolfe (1991), p. 10 1→2→3→Gyrinus. ♂
p. 17 1→2→4→5→6→9→

I removed the abdomen, placing it in KOH.

I am examining a ♂ Loxosceles from Nevada. Using Lo. Gertsch and Ennik (1983), p. 250 1→reclusa group.
p. 284 1→12→13→reclusa

(22. March 2013)

Continuing with Gyrinus specimen
(KUMU:Ento: 7121) ~ 5.4mm

9→11→15→20→26→28→29→30→31
→32→33→34→picipes?

(KUMU:Ento: 5848) is Coenosia cilicincta ♂ lutea
(7270).
(5847) is the same, ♀.

(KUMU:Ento: 1685) I think is Coenosia, but a different species. It is a ♀.

Using Hockett's (1934) key to females, p. 143
1→12→13→14→15→25→32→33→34→frisoni?

Now keying using Hockett (1965), p. 160
1→17→23→25→29→30→32→frisoni.

(KUMU:Ento: 1686) is the same.

Keying (KUMU:Ento: 8688) using Hockett (1965), p. 265. 1→2→occidentalis.
(KUMU:Ento: 8692) is the same.

Keying [KNUP: Ento: 8690], same key
 1 → 2 → 3 → Xenomysdaen armatipes? - just had
 pr. ↳ 4 → 5 → ! None of my specimens have
 fore tarsal segment 5 intact.

Examining [KNUP: Ento: 8775] Based on
 Pangella's (2013) color guide, it looks like
 either Bombus galensis or B. balteatus,
 possibly lugivus.

[25. March 2013]

I worked on the KNUP web site some
 as John requested. I mailed live
 specimens of Palanetia to Kevin
 Johnson.

[26. March 2013]

I did not come in to work due to
 frozen pipes and plumbing issues at
 home.

[27. March 2013]

John asked me to move to the
 next office over, so I did so.

Examining a vial labeled

CH 2-3.
 July 18/96
 Machilidae

Mesomachilis ♀ " " } 8842
Mesomachilis n.sp. ♂ " " } q.A
Machilinus " " } → 8843

[28. March 2013]

I performed data entry for the 1988
 Paey lichens.

John asked me to look at community
 metrics for LTEMP data.

(29 March 2013)

I photographed and collected a Calliphorid from the side of the building. It was dead.

It had apparently emerged on one of its recent warm days and then froze. We had a couple of below zero nights recently. Keying using MND, p.

1136 1~~X~~1 → 13 →

↳ 2 → 5 → 6 → 7 → 8 → Protophormia

terramorae? Yes.

Keying (KUMP: Ent: 8776), another Calliphorid, same key. 1 → 9 → 13 → 17 → 18 → 19 → 20 → 22 → 23 → Eucalliphora latifrons? No.

head in μ is acute. → Calliphora

Keying using Whitworth (2006), p. 129 1 → 2 → 4 → 5 → 7 → 8 → romitoria

(1 April 2013)

I worked on late requests for the LTEMP manuscript.

I spent a good portion of the day revising the lab safety plan.

(2 April 2013)

I worked on late requests for the LTEMP manuscript.

(3 April 2013)

I finished some LTEMP community clustering analyses I started yesterday.

I worked on revising the lab safety plan.

(4 April 2013)

I posted the weekly Refuge Notebook article.

I am collecting specimens of Dalmanella from my culture to submit to the Ikite project.

(5 April 2013)

I met with John for my performance appraisal. He wants me to look at MODES definition.

Examining a vial of bristletails with
the label G1

CH2-1
July 18/96
Machilidae

This contained Mesomachilis (all ♀ or
immature) and Machilinus.

<u>Mesomachilis</u>	♀	♂	sp. A.
	imm.		
<u>Machilinus</u>	♀		

→ (KUMR:Ento: 8871)

→ (KUMR:Ento: 8872)

(27. April 2003)

~~As~~ I opened the container of bristletails
I had collected at my Grandfather's house
in Nova on 10. April. Only several were
alive, I think the survivors ~~was~~ are
Machiloides, but I have not examined
them closely. One of the dead ones is
Pelitetentus, subgen. Pelitetentus (2nd lev. or II-III,
antennal base scaled. It is a ♀, with
the ovipositor exceeding the 4th style by
~0.8mm. → (KUMR:Ento: 8876)

More of the Pelitetentus from my uncle
Jed's house in Nova were alive.

I am trying to keep both cultures alive.

The last few of my Pete Petuicobius
cultures died while I was away. There is
now an infestation of mites. These look
like Oribatid mites.

I caught up on administrative, e-mail,
etc., then worked on my earthworm
presentation for Thursday.

[23. April. 2013]

I arrived before 08:00 and continued work on my earthworm presentation.

I met Kim at 11:30 here, but the microwave had started to get hot. We ended up just getting it home so that we can deal with the problem. It was 15:32 when I made it back to my office.

I worked on my earthworm presentation until 17:15.

[24. April. 2013]

I got to work just before 08:00, but at 8:15 Kim called me with plumbing problems. I left, took care of it, and was back in an hour.

I worked until 5:30 pm on my presentation.

[25. April. 2013]

I traveled to Anchorage to give a presentation on earthworms at the 2013 AK SAF meeting.

[26. April. 2013]

I posted a Refuge Notebook article & spent a good portion of the day entering data on *Delphyacidae* determinations from Charles Brattlett.

[29. April. 2013]

I spent the day preparing for the LTEMP meeting on Wednesday.

[30. April. 2013]

I finished a document on LTEMP sites for the meeting tomorrow.

[1. May. 2013]

I awoke with a cold, but I came in before 10:00 for the LTEMP meeting.

This was a fire meeting; the LTEMP meeting is tomorrow @ 09:00.

[2. May. 2013]

I came in just to attend the LTEMP and safety committee meetings from ~~9:00~~ 9:00 - 11:00 am. I took sick leave for the rest of the day.

[3. May. 2013]

I got in a little late at 08:30.

I grew sicker as the day progressed, so I left just before lunch time.

[6. May. 2013]

I arrived a little before 08:00.

I worked on some regional ILM planning.

[7. May. 2013]

I arrived at 07:00.

I dissected the abdomen off of [KNUP:Ento:1413].

Now I am attempting to key [KNUP:Ento:7289] using Hockett (1965), p. 71
1 → 2 → (I removed the abdomen) → 3 → spirifers?

[8. May. 2013]

I spent most of the day assembling LTEMP site lists.

I did walk down to the wetland S of Headquarters Lake and found a bunch of Jim Mullett's small PVC pipes scattered about. I started to clean these up,

but then I decided that I should contact Jim first.

I think [KNUP:Ento:1413] might be Pezomachus. Pezomyia
Griffiths, p. 337 1 → 8 → ~~4~~ 16 → 27 → 19 → 20 →

It might be Pezohyalemyia.

[9. May. 2013]

My three all day beds and I cleaned up trash along Tunony River Road as part of the Refuge's clean up day.

[10. May. 2013]

I mostly worked on LTEMP site data, but I also started a Refuge Notebook article for next week.

(13-May-2013)

I worked on my Refuge- Notebook article.

(14-May-2013)

I finished my Refuge Notebook article and worked some on the LTEMP sample frame.

(15-May-2013)

I did some communicating on Regional I & M.

Sorting specimens:

[KMR: Ent: 10090] is *Bancosidae*.

10087	"
10088	"
10087	<i>Phoridae</i>
10086	"
10085	<i>Diapriidae</i>
10084	<i>Anthomyiidae</i> ♀
8823	<i>Leptoptera</i>
8821	<i>Melomyzidae</i> ♀
✓ 8245	<i>Chloropidae</i>
✓ 8244	<i>Scathophagidae</i> ♀
✓ 8243	<i>Elateridae</i>
✓ 8240	<i>Pipunculida</i> ♂
✓ 8241	<i>Elateridae</i>
✓ 8239	<i>Ichneumonidae</i> ♀

✓ 8238	<i>Lauraniidae</i> ♀
✓ 8235	<i>Delphacidae</i> ♂
✓ 8233	<i>Tephritidae</i> <i>Campiglossa foveata</i>
✓ 8236	<i>Pipunculida</i> ♂
✓ 8237	<i>Meridae</i>
✓ 8231	<i>Agromyzidae</i>
✓ 8230	<i>Lauraniidae</i>
✓ 8229	<i>Ichneumonidae</i>
✓ 8232	<i>Ichneumonidae</i>
✓ 8225	<i>Tenthredinidae</i>
✓ 8226	<i>Sphaeroceridae</i>
✓ 8227	<i>Empididae</i>
✓ 8222	<i>Empididae</i>
✓ 8221	<i>Anthomyiidae</i> ♀
✓ 8220	<i>Meridae</i>
✓ 8219	<i>Cantharidae</i>
✓ 8218	<i>Meridae</i>
✓ 8216	<i>Meridae</i>
✓ 8217	<i>Lauraniidae</i>
✓ 8215	<i>Elateridae</i>
✓ 8214	<i>Syrphidae</i>
✓ 8213	<i>Tenthredinidae</i>
✓ 8212	"
✓ 8211	<i>Scathophagidae</i> ♀
✓ 8210	<i>Ichneumonidae</i>
✓ 8209	<i>Phoridae</i>
✓ 8208	<i>Pipunculida</i>

8242

8243 ← 8239

8228

8223

8224

8207

8154

Hymenoptera ✓

[16. May. 2013]

I worked on some data entry from yesterday, LTEMP sample frame, regional I&M tasks, and prepared for teaching of bloodborne pathogens on Monday.

[18. May. 2013]

I worked today

Keying Plecoptera from spruce trees outside of the headquarters building, using MLC, p. 239 1→2→4→5→Capriidae
45→49→50→51→Uttacaprin

KUM:Ent: 88731

I led a walk as part of the Kani bird festival in the afternoon

[20. May. 2013]

I attended the safety meetings this morning.

In the afternoon I worked on processing material from the loan of Delphacidae from Charles Bottlett.

I also sorted four sea otter for Mary Roesing.

[21. May. 2013]

I pulled the teeth of the otter skulls from Mary Roesing.

I looked at using eMOPIS data for examining defoliation.

[22. May. 2013]

I spent most of the morning working on a draft scope of work for processing outcrop samples at UHM for the regional I&M program.

(23. May. 2013)

I prepared a resupply order from Bioquip.

I participated in a long regional I&M conference call in the afternoon.

(24. May. 2013)

I was at the range qualifying this morning and attended gun cleaning by Dusty in the afternoon.

Keying (KNWR:Ento: 8875) using MLC, p. 271 1 → 2 → 3 → (Corixinae) → 4 → ♀ Nesocorixa?

I found a ♂ in the series. It is Graptocorixa.

Keying a ♂ of what looks like a different genus. → 5 → Corixini 7 → 8 → 9 → 11 → 12 → Palmarcorixa ♂

(25. May. 2013)

We were to go survey Daniels Lake for Elodea today, but this was canceled.

I finished sorting the Corixids from (KNWR:Ento: 8875),

(29. May. 2013)

I spent the day at Daniels Lake sampling for Elodea with John and Libby. It is a gorgeous lake. We saw lots of suckers.

(30. May. 2013)

I worked on checklisting some.

I examined a fly I had collected in my high tunnel yesterday. I think it might be Diela alaskana based on comparing genitalia to illustrations in the Griffiths series.

(31. May. 2013)

I spent most of the day on a regional I&M protocol for malaise samples.

I did go out and look for Cixius down by Headquarters Lake. It seemed to me that I was finding them nearest to roots of Rubus chamaemorus, so I collected some of these to look for damage. In the lab, I did not perceive any feeding damage, but I did find some eggs under underground scaly bracts at a branching node. These I kept with some moist Sphagnum moss, hoping

shot they will hatch.

[4. June 2013]

The eggs I collected on Friday have not hatched, but now ~~not~~ dark eye spots are visible. The eggs had been uniformly pale on Friday.

[5. June 2013]

The eggs I collected on Friday hatched. They are pale dotted (?) Collembola.

[6. June 2013]

I took the 2013 FISSA training.

I brought some Cixius-infested black spruce roots from Headquarters Lobe and photographed filamentous wax on the roots.

The first series of photos was on a section ~0.7 mm wide (frames 4247-4271).

Frames 4272-4282 were on a root section ~0.9 mm wide.

I sectioned the first root feeding site & sectioned. I photographed the nymphal exuvium and what may have been a

stylet pulled from the root using the compound microscope. The root here was 81 ticks wide @ 100x; The finer new growing branch was 18 ticks wide @ 100x. The possible profascia was 62 ticks long @ 100x.

[7. June 2013]

[KMPX: Euro: 8876] is Machiloides, ♂ I think. I did not open the vial. It is M. banksi.

I did some data entry.

I worked on a script for downloading eMODIS data.

[10. June 2013]

I worked on processing eMODIS data.

I collected a couple of mosquitoes that alighted on me outside the building. The mosquitoes are hassendeni this year. I am keying one of these using Thielman and Hunter (2007), p. 13 1→3→4→ Aedes, p. 40 1→25→36→37→38→39→40→41→ communis?

[11. June. 2013]

I spent most of the day working on MODIS data.

[12. June. 2013]

I spent the morning on MODIS data. In the afternoon I walked down to Headquarters Lake to look for Cixius.

I brought back roots of white spruce (2013MLB007) where I had collected Cixius. On these roots there was waxy residue on the small root nodes from Cixius and a Cixiid exuvium. I also found a small, round egg on the root in this vicinity, so I put this in an empty vial to see if it can be hatched. The egg, if that is what it is, is white, with a sprinkling of wax on it.

[13. June. 2013]

I did some data entry into Arctos.

In the lab I dissected the abdomens from the three Cixius I had collected (2013MLB008). None were parasitized.

[14. June. 2013]

I took care of the other skull from yesterday.

[17. June. 2013]

I spent the day in the field with Forest Service folks.

[18. June. 2013]

I cleaned up the lab, caught up on e-mail etc.

[20. June. 2013]

In the lab I photographed Cixiid I picked up today (2013MLB010). I photographed two 5th instar nymphs.

all dorsal photographs - 2013MLB010A

ventral - 2013MLB010B

Remaining in the vial with the temporary label 2013MLB010 are \square (8) Cixiid nymphs.

[21. June 2013]

I started work late today - at noon after dropping off the kids.

I worked with MODIS data.

I think some of the Elaterid larvae I have been collecting are Eanus.

I started a Cixiid short note manuscript.

[24. June 2013]

I worked on Arctia data entry.

Playing [K.MUR:Ent:5909] using Arnott et al. (2003)
 112 1 → 17 → 20 → 23 → 37 → 79 → 52 → 54 → 55 → 51 →
 14 → 72 → 73 → Eanus?

I worked on processing eMODIS tiffs, starting to generate annual index rasters.

Now I am keying a Cixiid I just collected using Wilson and Isari (1982). Written for a member of a different genus, it may not be applicable, but I am going to try it. 1 → 4 (but no tooth on ventral margin of profemur) → 4th instar? This nymph is pretty large, though, so I would have guessed 5th instar, which it may be. This nymph is about 5.0 or 5.1 mm long.

[25. June 2013]

I worked on making annual MODIS index rasters in the morning.

2013MLB014 contained Cixiid nymphs and an Elaterid larva. I first checked for Cixiids. " " obvious parasitoids before putting them into ethanol.

[26. June 2013]

I worked with a MODIS data in the morning.

The Cixiids I collected today I examined while they were alive. None were obviously parasitized. The smallest nymph frequently vibrated its abdomen, perhaps stimulating. It moved its abdomen laterally for very brief ~ 0.5 second bursts. The larger nymphs did not do this.

Cixiids  (2013.MCBO15)

[27. June 2013]

I worked with a MODIS data.

None of the Cixiid nymphs I collected today appeared to be parasitized.

Keying - Pipunculid I collected the other day using MNP, p. 746 1-4 \rightarrow 5 \rightarrow 7 \rightarrow 8 \rightarrow
Eudorylo? This is a ♀.

[25. June 2013]

I worked on a *Cixius* manuscript and on a MODIS data.

[1. July 2013]

I did some ~~data~~ data entry / curatorial work in the morning. I also worked on my *Cixius* manuscript a little.

[2. July 2013]

KNUP:Ent: 818 is instar 5.

Trichalophus seems to be actively dispersing now. I picked up one yesterday in the restroom, one more ~~one~~ in the hall today, and two at the threshold of the back door. One

Trichalophus I collected yesterday appears to have laid an egg on the *Salix scaberrima* leaf I got in with the airnet. The weevil had eaten a few tunnels out of the leaf overnight. I imagine that it would have oviposited in leaf litter given the opportunity, but perhaps she would have just let it drop from the vegetation. It was not cemented to the leaf, but was loose. The egg is nearly ~~round~~ spherical, ~ 0.7 mm in diameter, and a yellow buff, pale color.

2013MLB018 included 2 4th instar nymphs and 1 5th instar nymph. I will attempt to rear these.

[8. July 2013]

The *Trichalophus* weevils I had picked up last week I took home and provided firwood and willow leaves. They consumed these readily and laid numerous golden spherical eggs. These were not attached to anything and I assume would have fallen to the ground in nature.

The *Cixius* of labeled 2013MLB018 I had left in a vial with some *Sphagnum* moss in a refrigerator. They appeared to be doing well. Today I placed them in a small ziploc bag with a small spruce tree (including its roots) and a little bit of *Sphagnum* moss.

I did some work on eMODIS later.

Cixius adult with field label 2013MLB020 is a ♂ *Cixius meridionalis*.

The adult ♀ I collected under moss (2013MLB019) is also a ♂ *C. meridionalis*.

↳ nymphs: ♂ " "

While handling live nymphs, I observed that a 4th (or so) instar nymph, when pursued with forceps in a petri dish, would forcibly and repeatedly squirt a small amount of fluid from its rear end, apparently its anus. This was some factor than the body length of the hopper. A 5th instar nymph did the same, squirting a clear fluid.

I kept alive several 5th instar nymphs, hoping that some might molt into adults.

[9. July 2013]

I worked on my *Cixius* manuscript.

[10. July 2013]

I hired Skyline to look at defoliation up there with Lobby and Emily Weidner.

(11. July, 2013)

I did some *Arctos* data entry. Two adult *Cixius meridionalis* had eclosed from 5th instar nymphs.

I did some pinning (processing of recently collected specimens).

I tried to download 2013 MODIS imagery today, but I could not.

(12. July, 2013)

Today I am able to download data from AK eMODIS.

I did some specimen data entry.

I am photographing cixiid specimen KNUK:Ento:8926 (frames 4335 - 4355)

I am processing 2013 MODIS data

(15. July, 2013)

I worked on processing and ~~scrutinizing~~ scrutinizing 2013 eMODIS data.

I took care of the mail run.

I examined roots of *Chamaedaphne* I had collected on Friday. There were waxy secretions, but no obvious feeding sites. I did cross section some wax-covered areas, but I saw no internal damage. This had been 2013MLB027. I discarded this.

2013MLB026 contained two cixiid nymphs.

I processed recently collected specimens.

(16 July, 2013)

I did some data entry for recently collected specimens.

I examined a spruce root I had collected yesterday with cixiid nymphs and adults. It had on it cixiid waxy secretions as well as nymphal exuviae. There were also black ectomycorrhizae with profuse black hyphae on the spruce roots, but the cixiids were not associated with these.

These look like Cenococcum.

17. July. 2013

I worked on an LTEMP data request for John.

I attended the A-352R water ditching refresher over the web from 10:00-11:00am

I am examining/processing specimens from 2013MLB029

age class	sex	length (mm)
civilla nymph		
2nd?	-	1.3 mm
4	-	3.2
4	-	3.0
4	-	2.1
adult	♂	5.1
adult	♂	5.2
4	-	2.9
adult	♀	5.8
4	-	3.1
4	-	3.1
5	-	3.3

I processed recent specimens and did some data entry.

18. July. 2013

I spent the day in the field with Ben Struyckx.

19. July. 2013

I posted the Refuge Notebook article.

Specimens from	2013MLB036
adult ♀	5.5 mm
5 -	5.4
4? -	3.1
4? -	2.6
2? -	2.1
4? -	3.1
2? -	2.2
5 -	3.8

I did some data entry.

[22. July. 2013]

I spent the morning and part of the afternoon working on LTEMP data for a John / Dawn manuscript.

I took a short walk in the afternoon.

[23. July. 2013]

I am downloading recently posted MODIS data.

[24. July. 2013]

I joined Mike Long and Kales Johnston on Lutterworth Lake looking for defoliation indicated by MODIS imagery. There was none.

[25. July. 2013]

I worked on collection management / specimen processing.

Examining (KNUF:Ento:10295), a vial of
Psyllids from Keston.
nymphs \square
Cicadellid nymphs \square
 δ

Keying using Haslkinson (1978), p. 337-336
1 \rightarrow 2 \rightarrow Psylla, p. 337 1 \rightarrow 2 \rightarrow 3 \rightarrow galaeformis?

[26. July. 2013]

I took the pack test in the morning.

I had to do some posting on the web today for KNUF and akentsoc.org.

[29. July. 2013]

I dealt with correspondence in the morning.

Now I am examining (KNUF:Ento:10296)

In the vial were four Geometrid larvae and two adult psocids. I think more than one Geometrid species is represented here. I compared these with (KNUF:Ento:7158): there was not an

exact match, but Oporophthora bruceata color patterns are variable.

[KUMR:Ent:10297] contained two Tortricid larvae, two tortricid pupae (both tentative FD's), and one large geometrid larva.

I compared this geometrid with illustrations in Eido and Embree (1968), but I could only see two lateral ocelli on each side. I could not ~~quite~~ recognize the arrangements of lateral ocelli illustrated by Eido and Embree (1968).

I again looked at [KUMR:Ent:10296] I think at least one of these is O. bruceata and that two others are likely this species or at least close (e.g. Epirrita). I am leaving this as geometridae, though.

→ Actually, the ocelli pattern is more like O. bruceata, but this species is not known from AK.

(3rd July 2013)

Yesterday, Feld brought me a spruce from the Escape Route (North Menu) with mal-formed inflorescences. Today I dissected some of these, finding a bunch of tiny, cylindrical mites.

(1 August 2013)

Examining malaise samples I collected yesterday and ran overnight

[2013MLB042] - There was only 1 cixiid, myrmicine ants, - few Collembola.

[2013MLB041] - This included some tiny cixiid nymphs.

cixiids
Linyphiidae ♂

5. August 2013

I did some specimen processing and labeling in the morning.

I attended a wildland fire refresher class in the afternoon.

6. August 2013

[KNWR: Ent.: 8947] looks to me a lot like *Cosses fabricalis*.

I did some labeling of specimens.

Sorting small Hymenoptera

[KNWR: Ent.: 8154] Chalcidoiden, Pteromalidae?

8207

Platygasterinae

8224 Pteromalidae

8223 Pteromalidae

8228 Scelionidae?

8234 ~~Platygasterinae~~ Pteromalidae

8242 Pteromalidae

Eulophidae

Anne Wieland stopped by in the afternoon to drop off moth specimens from apple trees.

Processing bag labeled ~~4685~~

4685 Early Spring 7/27 includes hatched!

This bag contained four adult moths with leaves, pupal casings, etc.

Processing bag labeled

4685 Early Spring in Homer 7/23/13

This contained three adult moths.

Processing bag labeled

East Rd July 2...? (twenty something)

This contained three adult moths.

Processing bag labeled

| 2 on 7/27 Early Spr |

This contained two adults. One of these I
badly mangled.

Processing bag with label data

Picked ERd 7/29/13 Hatch 8-1
East Rd

Processing a bag labeled

ERd
7/26

(7. August, 2013)

I packaged specimens to go out ~~to~~ on
loan to Jim Kruse. I attended an eDNA
webinar with John.

I walked down to Headquarters Lake
in the afternoon.

I am examining the yellowjackets I
collected from my house yesterday. They
key to V. vulgaris in Abre et al. (1981).

(8. August, 2013)

A Silene I collected from my house
this morning is S. latifolia.

I am examining the contents of one
of two berlese samples from (2013MLB047)

Cixius nymphs
Linyphiidae
Scleromitris?
Ceraphronidae?

Examining contents of vial labeled
2013MLB044. This contained two ♀ Cixius.
One of these I dissected to look at
egg development. Its abdomen was full
of elongate eggs. These were about 0.8mm
long and about 3x longer than wide.

I tried doing some Arctos data entry,
but the interface/connection is so
slow right now that it is barely
functional.

Examining 2013MLB046
Cixius, 5th "
" 4th "
" " 3rd ""

9 August 2013

I looked at the second berlese sample
from 2013MLB047. There was a very small
1st or 2nd instar Cixius nymph in this
sample, only about 0.8mm long. I think
this is a 1st instar nymph, so I now have
all life history stages except for eggs.

I did some labeling of specimens.

I worked on writing SQL queries for Arctos
for the purposes of checklisting and data
backup.

I walked down to Headquarters Lake in
the afternoon.

At the end of the day I looked at berlese
sample 2013MLB050 from yesterday. In
this was a pseudoscorpion, the first I
have seen from the refuge.

12 August 2013

I had let berlese sample 2013MLB050
run over the weekend. There was a second
pseudoscorpion...

pseudoscorpions 1:
no cixiids.

Keying pseudoscorpions using the key of
Buddle (2010) 1 → 1 → ~~1~~ → 72+33!
→ 8 → 9
↳

It has four eyes, three trichotrichia on movable finger, length ~1.7mm I took some photographs.

I examined the wood of heavily-infested spruce roots I had collected the other day (2013.MCB051). There was copious white, waxy secretion on these spruce roots. These were infested by aphids, of which I collected six. Much of the waxy secretions I have been seeing on spruce and have been attributing to *Cixius* may have been caused by these aphids! These could be *Pachypappa tremulae* or a relative, maybe *Pachypappa sacculi*.

[13. August. 2013]

I tried importing records from Pike et al. (2012) into Arctos (VAMObs:Ent), but this proved harder than I thought.

I have tried for some time to key [K.Nypl.:Ent:10235] using Pike et al. (2012), but I could not get past couplet 3, this character not having been defined in the text. The specimen looks to me most like

Clydesmithia canadensis, but it may be *Pachypappa rosettei*.

[14. August. 2013]

I posted the Refuge Notebook article.

I worked on importing records from Pike et al. (2012) into Arctos.

After a walk down to Headquarters Lake, I added the at least 10, mostly 5th instar nymphs to the terrarium of *Sphagnum* and associated small muskeg plants. The cixiids slowly made their way down into the *Sphagnum* through openings they found.

I examined several clumps of waxy secretions from roots of spruce trees I had collected today, but these were all full of Eriosomatine aphids or their exuviae.

2013.MCB053, a malaise sample, did yield one small immature pseudoscorpion.

Somehow I dropped the specimen when transferring it to a vial, losing the specimen.

Several of the cixiids, after ^{half hour} ~~an hour~~ in the terrarium, have still not found a way below the surface. A couple of others had found their way down ~10 cm below the surface.

[15. August. 2013]

I arrived in the lab before anyone else while the lights were still out. Using a red light, I examined the terrarium of cixiid nymphs. Four of these were on roots of the black spruce; another was within 1 cm or so. All had white, waxy secretions on their abdomens. They were dislodged by my activities, either light or vibration. I moved the terrarium to the window for the plants' sake. Soon, all of the cixiids were out to be seen.

[19. August. 2013]

I worked on posts to the akentoo.org website, especially editing text and links related to the Alaska checklist.

[20. August. 2013]

I am working on data requests for a JMM manuscript. I am also needing to write a Refuge Notebook article due tomorrow.

I worked on my Refuge Notebook article.

[21. August. 2013]

I am examining a sedge I collected yesterday afternoon (2013MLB01). It is Carex limosa.

[22. August. 2013]

I got data off to John for the LTEMP manuscript.

Examining 2013MLB054, looking, in particular, for characters with which to separate the nymphal stages.

As with Myndus crudus, the 4th and 5th instars can be separated by the mesonotal wingpads. In the instar 5, these extend nearly to the apex of the metanotal wingpads; in instar 4 they do not extend as far. Also, the mesonotum of instar 5 has an oblique row of 5 pits extending anterolaterally from near postero-medial

corner; only 4 pits on instar 4. Nevertheless, some instar 5 individuals have only 4 pits in this row. The anteromedial row, though has 3-4 pits (usually 3) on instar 5 and 2 on instar 4. Nevertheless, the number of pits on instar 5 in this row range from 2-4, usually 3. Instar 3 has only one pit in the anteromedial row.

The metatarsal characters work for separating instars 3 from instars 4-5. There are no smaller instars here.

In this vial:

instar	#
5	☒
4	⋮
3	⋮
specimen, 4th	°

[23. August. 2013]

I did some lot. entry in *Arctos*.

[2013MLB057] is a ♀ *Cixius*. She had mature eggs in her abdomen.

Arctos went down... I worked on my *Cixius* manuscript.

Examining contents of a vial with label data

USA: Alaska. Soldotna. Headquarters Lake
 60.46516°N 151.06555°W ± 5m, ext 4m.
 8. Aug. 2013 ML Bousler and S. Bailey
 collected from moss by hand

This contained two *Cixius* nymphs

instar	#
5	⋮
4	⋮

Examining [2013MLB055]:
Cixius meridionalis,

♀ - gravid, with small eggs

There are also remains of a carcass of (abdomen and wings and thorax) of an adult ♀ *C. meridionalis*.

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August

[27. ~~July~~ - 2013]

Our lab dryer burned the specimens that had been drying over the weekend. These were KNUK:Herb: 8952 (Leccinum alaskanum) 2013MCB067 (Russula emetica), and an Amanita. The dryer is a Napco model 630.

The two adult ♀ cixiids I had collected the other day (2013MCB066) had died. One of these ♀ had been lethargic when it was collected, the other had been quite spry. I found no eggs on the Shagnum or sp sprigs of spruce and Empetrum. Both females were gravid with well-formed eggs in them.

Berlese sample 2013MCB062 yielded no pseudoscorpions or cixiids. The rest, mostly mites, I discarded.

[28 August 2013]

The wings of the live cixiid labeled 2013MCB065 had been wetted and were stuck to the side of the vial. I moved her to a new, dry vial with less damp moss and the same sprig of Betula chamaemorus.

I did a little work improving the appearance of the akentoo.org website.

I started looking into reworking a graphic for the upcoming LTEMP paper due next week, but it appears that the data now exists only on a disk at home.

The Berlese sample from yesterday (2013MCB070) yielded no cixiids, but there was a pseudoscorpion (immature), aphids, and lots of mites.

Arctos is down, so I cannot enter data on specimens.

I photographed and examined a spruce root tip that has become covered in waxy secretions, a root in the little terrarium I have been maintaining. I photographed this before disturbing it. In these waxy

secretions was an aphid, probably *Eriosomatinae*. The *Cixius* secretions are much more diffuse, sparser, and much less conspicuous than secretions of the *Eriosomatinae*. When I had looked on the cixiids in the terrarium this morning immediately after turning on the lights, one appeared to be feeding on a rather stout black spruce root.

[29. August, 2013]

The ♀ cixiid collected on 27. August had died. This ♀ was not gravid.

Examining sample 2013MB060. This contained cixiid eggs.

instar	#
4	0
5	0
adult ♀	0

This ♀ was full of mature eggs

I filled out an acquisition request for a new dryer oven.

While working in my office I saw that *Cixius* was feeding on a root. I took a number of photographs, hoping to get a good shot to document this.

After photographing this, I pulled out the root the *Cixius* had been feeding on. It was *Empetrum nigrum*.

The feeding site on the root was not conspicuous even though I knew exactly where on the root thanks to the photographs. There were sparse, waxy filaments near the feeding site, but almost none on it. This feeding site was below a dark swelling on the root, which may or may not have been induced by the cixiid. There were what appeared to be somewhat granular, yellowish-white secretions at the feeding site. The *Empetrum* root here is about 0.7-0.8 mm in diameter. I photographed the feeding site and then sectioned it. I could not perceive any damage in these sections using the stereoscope.

(30 August 2013)

I should make a list of all vascular plant species represented in the terrarium where I photographed the cixid yesterday

Vaccinium oxycoccos

Picea mariana

Empetrum nigrum

Vaccinium vitis-idaea

Rubus chamaemorus (dried)

Vaccinium uliginosum

Andromeda polifolia

Drosera rotundifolia

Lejum palustre

I photographed Achilid specimens.
(KUP:Ento: 6763). It is a ♂.

2013 MCB065 is an adult ♀ cixid. There were no mature eggs in this individual, and I did not perceive immature eggs.

In a vial labeled 2013 MCB063 were a cixid nymph (5th instar), an immature lycosid spider, and a mite bag.

3. Sept. 2013

I just together in Bisquit order in the morning and took care of other administrative. I picked up ethanol at SBS.

I did some sweep net sampling in the afternoon.

4. Sept. 2013

2013 MCB069 contains cixid nymphs

instar	#
5	1
4	2
3	0

2013 MCB045 contains one adult ♀ cixid. This ♀ was not gravid.

2013 MCB051 contains Cixius nymphs and a staphylinid beetle.

instar	#
5	1
4	0
3	2
2	2

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In this vial I have what may be
a second instar nymph. It has no
pits on the anteromedial row of the
mesonotum. Also, the metatarsi
appear to be one-segmented. At least,
there is no obvious division. It is
about 1.6 mm long.

I walked down to Headquarters Lake
in the afternoon.

9

:

1

1

1

1

2

0