

(6. Oct. 2016)

Processing sweep net sample KNUK:Ent.:10961,  
from west half of plot SK03, 19. July, 2016  
label: UAM100185693

Piapiidae     °°  
Psyllidae     ↓°  
Aphididae     ⊠↓°  
Culicidae     °°  
Chironomidae     ⊠°°;  
Brachycera     ↓°  
Araneae     □  
Mycetophilidae     ⊠  
Hybotidae     ⊠°  
Acari     °  
Gastropoda (snail)     ⊠  
Ichneumonidae     ⊠°  
Symphyta larvae     °  
Miteae     °  
Nematocera     ⊠  
Hymenoptera (Figitidae?)     °  
Phoridae     °  
Hymenoptera (Proctotrupidae?)     °  
Hymenoptera     °  
Smithuridae     °  
Entomobryidae     °°

I think this is the same  
mistle I commonly see on  
fruits of Streptopus.

Processing sweep net sample KNUK:Ent.:10962,  
from east half of plot SK04, 19. July, 2016  
label: UAM100185704

Vespidae     °°  
Araneae     ⊠  
Psocoptera     °  
Gastropoda (snail)     ⊠°°  
Nematocera     ⊠  
Mycetophilidae     °  
Phoridae     ⊠  
Lepidoptera     °°  
Aphididae     ↓°  
Hybotidae     °°  
Chironomidae     °°  
Brachycera     ⊠  
Piapiidae     °  
Hemerosiphidae     °  
Ichneumonidae     °°  
Cicadellidae     °  
Collembolidae     °  
Acari     °  
Sclomyzidae     °



Sorting sweep net sample KNUK:Ento:10965, from west  
half of plot SK08, 22 July, 2016

Label: UAM106185703

Aleoidea ?  
Hybotidae  
Nematocera ☒☒☒☒  
Mycetophilidae ♂  
Sphaeroceridae  
Dixpriidae ☐  
Aphididae  
Culicidae  
Phoridae  
Acari  
Hymenoptera (Proctotrupidae?)  
Ichneumonidae ☒  
Araneae  
Cicadellidae  
Gastropoda (snail)  
Entomobryidae

Sorting sweep net sample KNUK:Ento:10966, from  
east half of plot SK15, 9 Aug, 2016

Brachycera  
Nematocera  
Mycetophilidae  
Cicadellidae  
Elasmotherus interstinctus  
Procytera  
Ichneumonidae  
Araneae  
Dixpriidae  
Aphididae  
Acari  
Chironomidae

Sorting sweep net sample KNUW:Ento:10967, from  
west half of plot SK15, 9 August, 2016

label: UAM100185701

Nematocera   
Cicadellidae °  
Brachycera °  
Chironomidae ♀°  
Hymenoptera (Proctotrupidae?) °  
Entomobryidae °  
Ichneumonidae °°  
Araneae   
Acari °°  
Mycetophilidae ♀°  
Hemiptera °  
Gastropoda °  
Araneae °  
Elasmesthus interstinctus °  
Hybotidae °  
Diapriidae °

Processing sweep net sample KNUW:Ento:10968, from  
east half of Sliko project site SK16, 3 August, 2016

label: UAM100185696

Araneae  °°  
Aphididae °°  
Cicadellidae   
Lepidoptera °  
Lygaeidae °

Processing sweep net sample KNUW:Ento:10969, from west  
half of plot SK16, 3 August, 2016

label: UAM100185697

Araneae  °°  
Cicadellidae  °°  
Ichneumonidae °

(11. Oct. 2016)

I worked on the grassland NGS manuscript.

(12. Oct. 2016)

- NGS MS

✓ data for Derek

- email to Gayle Casper

- Stikak samples

✓ look for birch

cattin cecidomyiids.

↳ Double check grassland  
earthworms.

↳ LifeScanner done

↳ Leah.

Reexamining specimen

KNWR: Ento: 10821

Clitellus on 29-33

MP on 15. Agrees with

Dendrobena octaedra.

Examining specimen

KNWR: Ento: 10822

KNWR: Ento: 10785

MP on 15, Clitellus on 25/29-33

D. octaedra

KNWR: Ento: 10820 is also Dendrobena octaedra.

MP on 15; Clitellus on 29-33.

I reshaped data for Derek.

I worked on the grassland NGS MS.

↳ Got it submitted for technical review at 15:45.

I looked for cecidomyiids in seeds and scales of  
birch catkins, but I found none.

(13. Oct. 2016)

- Stikak samples

- Nikirki's stormy lake

worms

- drop off vehicle

+ to be winterized.

- Refuge Notebook

↳ time

I submitted the Grassland  
NGS MS to BDS.

Processing sweep net sample

KNWR: Ento: 10970, from plot

SK17, cut half, herede label

UAM 100185698

Culicidae

Aphididae  ♂

Mycetophilidae " "

Ichneumonidae " "

Miridae " "

Brachycera  ♂

Nematocera  ♂

Hybotidae " "

Cicadellidae " "

Phoridae " "

Araneae " "

Pelichapodidae " "

Hemeroptera " "

Procoptera " "

Acarid " "

Hymenoptera " "

Sorting sweep net sample KNUW:Ento:10971, from  
west half of plot SK17, 20. July. 2016.  
barcode label: UAM100185699

Hybotidae ☒☐  
Aranene ☐  
Miridae ☒"  
Brachycera ☒°  
Ichneumonidae ☐  
Simuliidae "  
Chironomidae "  
Nematocera ☒☐  
Cicadellidae "  
Aphididae ☒☒"  
Acari "  
Neuroptera "  
Phoridae "  
Sminthuridae "  
Calicidae "  
Gastropoda (snail) °  
Dipteridae "  
Dolichopodidae "  
Mycetophilidae "

I drove out to Stony Lake in the afternoon to  
learn more about the earthworm infestation out there.

17. Oct. 2016

Processing sweep net sample KNUW:Ento:10972,  
from east half of plot SK22, 9. August. 2016  
label: UAM100185700

Mycetophilidae ☐  
Sminthuridae "  
Aphididae 1°  
Psyllidae ☐  
Nematocera ☒°  
Gastropoda (snail) °  
Calicidae "  
Ichneumonidae 1°  
Aranene "  
Hymenoptera "  
Acari "  
Brachycera "  
Cicadellidae "  
Phoridae "  
Dolichopodidae "  
Dipteridae "  
Entomobryidae "  
Thysanoptera "

Processing sweep net sample KWR:Ent:10977, from  
west half of plot SK 22, 9. August 2016.  
label: UAM100185710

Hemirhabditidae  
Mycetophilidae  
Nematocera  
Psyllidae  
Culicidae  
Aphididae  
Brachycera  
Dipteridae  
Sminthuridae  
Cixius  
Dolichopodidae  
Brachycera Dipter larva

Examining worms collected yesterday at Stormy  
Lake boat launch.

Sample 2015MLB015, from the boat launch,  
woods behind the sign board.

This included three adult Lumbricus terrestris,  
☒

14  
Also a small Dendrobaena octaedra (clitellum on  
29-33, MP on 15. - I think just one of these.  
- photographed.

Another species of worm represented by two  
individuals: MP on 15, epilobic, clitellum on  
25, 26-31, 32, JP on 28-30. The worm is a  
pale pink, but I think it would be considered  
to be pigmented. Setae widely spaced.

Dendrodrilus rubidus → KWR:Ent: ~~11025~~

There were also 9 small, pale worms that looked  
like Enchytraeidae. There might be two kinds: one  
that is nearly white (7 of 9) and one that has a  
yellowish tinge (2 of 9). I saw no obvious  
morphological differences.

yellower enchytraeid: frames 5568-5571

↳ Lifescanner vial BOLD-280

↳ KWR:Ent: 11031

paler worm = frames 5572-5573

↳ Lifescanner vial BOLD-ET7

↳ KWR:Ent: 11030

The remaining 7 enchytraeids I put in a vial  
with barcode label UAM100185705.

↳ KWR:Ent: 11029

17. Oct 2016

- backpack
- science photo + Kim
- worm specimens
- Refuge Notebook article
- vehicle

Examining worms from tip  
of boat launch road at Stoney  
lake collected 13. Oct. 2016  
(2016MLB016)

smaller worms - MP. in 15, clitellum on 29-34

All earthworms are apparently Dendrobaena octaedra  
There were three adult D. octaedra and six immatures.  
Enchytraeids:  $\square$  → vial with label UAM100185706.

I photographed the Dendrobaena specimens.

I worked on my Refuge Notebook article.

18. Oct. 2016

- vehicle
- arrange moats for
- fuels work (?)
- tomorrow

I worked with willow gall midge  
data.  
I worked on revising my Refuge  
Notebook article on earthworms.

Processing sweep net sample KNUB:Ent:10974,  
from plot SK23, east half, 3. August 2016  
label: UAM100185707

- Brachycera  $\uparrow \square$
- Hymenoptera  $\vdots \vdots$
- Phoridae  $\vdots \vdots$
- Araneae  $\square$
- Mycetophilidae  $\square$
- snail  $\uparrow \square$
- Nematocera  $\square \square$
- Aphididae  $\cdot$
- Ephemeroptera  $\uparrow \vdots$
- Chironomidae  $\cdot$
- Simuliidae  $\cdot$
- Thysanoptera  $\cdot \cdot$
- Meloidae  $\cdot$
- Hemiptera  $\cdot$
- ~~Nematocera~~  $\cdot$
- Nabis  $\cdot \cdot$
- Eminthoridae  $\cdot$
- Acaris  $\cdot \cdot$



(19. Oct. 2016)

Processing sweep net sample KNUK: Ent: 10975,  
from west half of plot SK23, 3. August 2016  
Label: UAM100185708

Flehmännchen

Dolichopodidae " " " "

Araneae " " " "

Mycetophilidae " " " "

Nematocera " " " "

Diapriidae " " " "

Chironomidae " " " "

Brachycera " " " "

Acaris " " " "

Phoridae " " " "

Gastropoda " " " "

Proctotrupidae (3) " " " "

Elasmostethus " " " "

Aphididae " " " "

Processing sweep net sample KNUK: Ent: 10976, from  
east half of plot SK24, 29. July 2016  
Label: UAM100185709

Geometridae? larva

Coleoptera larva

Nematocera

Cicadellidae

Brachycera

Miridae " " " "

Flehmännchen " " " "

Culicidae " " " "

Sphaeroceridae " " " "

Aphididae " " " "

Hymenoptera " " " "

Processing sweep net sample KUNR:Ento:10977, from  
west half of plot SK24, 29 July 2016  
label: UAM100185714

Hemiptera °

Culicidae °

Chironomidae °

Aphididae °°

Ichneumonidae °

Brachycera  one Tephritid (?) with spotted wings

Cicadellidae

Phoridae °

Nematocera °°

Miridae °

Processing sweep net sample KUNR:Ento:10978, from  
east half of plot SK25, 21 July 2016  
label: UAM100185711

Brachycera °°

Cicadellidae °°

Aphididae °°

Nematocera °°

Acarina °°

Ichneumonidae °°

Miridae (Stenolepisi?) °

Lepidoptera larva °

Phoridae °

Acarina °

Processing sweep net sample KNUW:Ento:10979, from  
west half of plot SK25, 21. July, 2016  
label: UAM100185713

Aphididae ::  
Vespidae  
Aranidae  
Gastropoda ::  
Nematocera  
Simuliidae  
Culicidae  
Brachycera ::  
Symphyta larva  
Tipulidae  
Bibionidae  
Acari

Processing sweep net sample KNUW:Ento:10981, from east  
half of plot M609, 16 August, 2016  
label: UAM100185712

Gastropoda (slug)  
Ichneumonidae  
Cicadellidae  
Aranidae  
Miridae  
Mycetophilidae  
Tipulidae  
Culicidae  
Nematocera  
Geometridae (?) larva  
Simuliidae  
Hemiptera  
Entomobryidae  
Chrysomelidae  
Gastropoda (slug)  
Acari  
Aphididae

Processing sweep net sample KUMU: Ent: 10948, from east half of plot M602, 19. July. 2016

Label: UAM 100185719

Miridae ♂

Brachyccera ☒☒

Diapriidae

Neurostocera ♂

Hemiptera

Mycetophilidae ☐

Neurostocera ☒☒☒

Culicidae ♂

Ichneumonidae ♂

Dolichopodidae ♂

Hybotidae ♂

Aphididae ☒

Aranene ☒

Vespidae

Thysanoptera

snail ☒

Geometridae? larva

Neuroptera " larvae

Phoridae ♂

Chironomidae ☐

Tipulidae

Sciomyzidae

Procyptera

Psyllidae

Cicadellidae ♂

Acrid ~ 20 on a fly

Empididae

(20. Oct. 2016)

I worked on pasting Stibole project photos to BOLD, but then got ready and headed out with Krista Kennedy, working at the Sterling Final Break off of Three Johns Rd. 9 am - 4 pm.

(21. Oct. 2016)

06:45 - 11:45

Wetlands - write Gagne

I cleaned out my vehicle (480000) and left it to be put away for the winter.

Processing sweep net sample KUMF:Ento:10983, from  
east half of plot M605, 22. July. 2016  
label: UAM100185717

Culicidae .

Nematocera ☒☒☒☒☒ .

Ichneumonidae ☒

Brachycera .

Aphididae .

Diapriidae .

Acari .

Aranene .

Thysanoptera .

Processing sweep net sample KUMF:Ento:10990, from east  
half of plot M607, 1. August. 2016  
label: UAM100185718

Delphacidae .

Cixius .

Ichneumonidae .

Aranene ☒☒☒☒☒

Aphididae .

Chironomidae .

Phoridae .

Nematocera ☒☒☒☒

Psyllidae ☒ .

Mycetophilidae .

Culicidae .

Tachinidae .

Entomobryidae .

Procytera .

Diapriidae .

Cicadellidae .

Brachycera .

Coleoptera .

Acari .

Miridae .

Insecta .

mangled



(24)

I attended the all employee staff meeting at 10:00.

I worked some on 2016 Refuge Notebook articles.

file  
response to  
response to

- pos Res

- Refuge

ARCIS

(27 Oct. 2016)

I worked on 2016 Refuge Notebook articles.

I attended a KREA meeting in the morning.

I / o

(25.0)

I

200

I / o

I l.

I found

I was

Processing sweep net sample KNUF: Eufs: 10995,  
from east half of plot M612, 1. Aug. 2016  
label: UAM106185723

Culicidae

Cicadellidae ☒ 6

Phoridae

Aranidae ↓ 0

Lepidoptera

Salticidae

(28. Oct. 2016)

1st Steve/Andy  
about Christmas  
get-together.

I worked some on 2016  
Refuge Notebook articles.

Processing sweep net sample KNUK:Ento:10988 from  
east half of plot MG09, 19. July, 2016  
Label: UAM100185722

Chloropidae " "  
Vespidae " "  
Psyllidae □  
Cicadellidae □□□□□□□□  
Miridae ♀  
Hemiptera ♂  
Lepidoptera ♀  
Culicidae " "  
Aphididae ♂  
Brachycera ♂  
Symphyta larva " "  
Araneae □  
Scolymy Scleromyzidae ♂ Sepelom  
Dryinidae (imm. on cicadellid) ♀  
Chironomidae ♀  
Hymenoptera " "  
Ichneumonidae " "  
Sminthuridae " "  
Nabidae " "  
Delphacidae "

31 Oct. 2016

Literature

- travel
- refuse Nitebooks
- Stikik specimens

Processing sweep net sample  
KNUK:Ento:10993, from east  
half of plot MG10, 10. Aug. 2016  
Label: UAM100185721

Araneae □□  
Cicadellidae □□□  
Entomobryidae " "  
Hymenoptera " "  
Acari " "  
Mycetophilidae □  
Sminthuridae □  
Hydroptilidae □  
Gastropoda (slg) " (2)  
Diptera " "  
Aphididae " "  
Gastropoda (snail) □□□  
Nematoda " "  
Ichneumonidae □  
Brachycera " "  
Neuroptera larva " "  
Diptera " "  
Dolichopodidae " "  
Tipulidae " "  
Phoridae " "  
Nematocera " "  
Hemiptera " "

Lepidoptera larva " "  
Coleoptera " "  
Elasmostethus " "  
Thysanoptera " "  
Procoptera " "  
Insecta - larva " "  
Delphacidae " "



I worked on Refuge Notebook 2016.

Processing sweep net sample KNUK:Ento:10999, from east half of plot MG16, 9. August 2016  
label: UAM100185720

Mycetophilidae ☒<sup>o</sup>      Culexidae<sup>o</sup>  
Ichneumonidae ☒<sup>o</sup>      Thysanoptera<sup>o</sup>  
Diptera larva<sup>o</sup>      Lepidoptera larva<sup>o</sup>  
Procoptera<sup>o</sup>      Psyllidae<sup>o</sup>  
Nematocera ☒<sup>o</sup>  
Diapriidae<sup>o</sup>  
Aphididae<sup>o</sup>  
Brachycera<sup>o</sup>  
Hybotidae<sup>o</sup>  
Scymnidae<sup>o</sup>  
Aphididae<sup>o</sup>  
Hemeroptera<sup>o</sup>  
Gastropoda (snail) ☒☒<sup>o</sup>  
Araneae ☒<sup>o</sup>  
Collembola<sup>o</sup>  
Vespidae<sup>o</sup>  
Chironomidae<sup>o</sup>  
Tachinidae<sup>o</sup>  
Staphylinidae<sup>o</sup>  
Bibionidae<sup>o</sup>  
Cicadellidae<sup>o</sup>  
Acari<sup>o</sup>

Processing sweep net sample KNUK:Ento:11001, from east half of plot MG17, 9. August 2016

label: UAM100185730

Vespidae<sup>o</sup>  
Gastropoda (snail)<sup>o</sup>  
Brachycera<sup>o</sup>  
Diapriidae<sup>o</sup>  
Araneae<sup>o</sup>  
Hybotidae<sup>o</sup>  
Hemeroptera<sup>o</sup>  
Mycetophilidae<sup>o</sup>  
Chironomidae<sup>o</sup>  
Ichneumonidae<sup>o</sup>  
Aphididae<sup>o</sup>  
Acari<sup>o</sup>

(1. Nov. 2016)

Processing sweep net sample KNUK:Ento:11003, from  
east half of plot MG18, 1. August. 2016

Label: UAM100185729

Cicadellidae ☒ 17

Echneumonidae

Chironomidae 1:

Araneae ☒ ☐

Formica (♂, ♀)

Lygaeidae

Aphididae

Nematocera

I worked some on Refuge Notebook.

Processing sweep net sample KNUK:Ento:11005,  
from east half of plot MG19, 3. August. 2016

Label: UAM100185728

Mycetophilidae

Araneae ☒ ☒ ☒ ☒ ☒

Nematocera ☒ ☒ ☒

Dipteridae

Tetragnatha

Psyllidae ☒

Chironomidae 13

Ichneumonidae 1:

Smintzaridae

Hybotidae

Brachycera

Tipulidae

Delphacidae

Acarid

Phoridae

Gastropoda (snail)

Coleoptera

Hymenoptera

Cicadellidae

Processing sweep net sample KNUK:Ento:10985, from  
east half of plot M606, 18. July. 2016

Label: UAM100185727

Miridae °°

Hyloteridae °°

Ichneumonidae ♀°

Aphididae ☒☒I°

Nematocera ☒☒°°

Cocadellidae °

Chironomidae ☒

Mycetophilidae °°

Culicidae °°

Hymenoptera °

Araneae ☒

Torymidae °

Brachycera ♀°

Chloropidae °

Psyllidae °

Empididae °°

Sminturnidae °

Diapriidae °

Phoridae °°

Neuroptera? larva °

Processing sweep net sample KNUK:Ento:10997,  
from east half of plot M614, 18. July. 2016  
Label: UAM100185725

Araneae ☒☒I°

Nematocera ☒☒☒I°

Chironomidae ☒☒☒☒I°

Cixiidae ☒

Trichoptera °°

Aphididae °°

Nabidae °°

Sminturnidae °°

Hemiptera °°

Cocadellidae °

Brachycera °

Ichneumonidae °

Miridae °°

Tigulidae °

Mycetophilidae °

Insecta larva °

Myrmecinae °

Processing sweep net sample KUNR:Ento:11009,  
from east half of plot MG21, 20 July 2016  
label: VAM100185726

Mesembrina?

Cicadellidae

Miridae

Ichneumonidae

Brachycera

Culicidae

Empididae

Simuliidae

Mycetophilidae

Araneae

Nematocera

Aphididae

2. Nov. 2016

- travel
- AKEI, just B.
- meeting
- checklist

I worked on Refuge Notebook

I helped move a bunch of  
equipment out of Melloy's

office in preparation for heating system work  
to begin tomorrow.

Processing sweep net sample KNUK:Ento: 11611, from  
east half of plot M622, 9 August 2016  
label: UAM100185716

Nematocera " "  
Mycetophilidae " "  
Psocoptera " "  
Araneae ♂ "  
Aphididae " "  
Cicadellidae ☒ "  
Mismecur " "  
Ichneumonidae " "  
Delphacidae " "  
Ichneumonidae " "  
Brachycera " "  
Aphididae " "  
Miridae " "  
Sminthuridae "

Processing sweep net sample KNUK:Ento: 11607,  
from east half of plot M620, 20 July 2016  
label: UAM100185715

Vespidae " "  
Empididae " "  
Ichneumonidae " "  
Cicadellidae ☒ ☒ "  
Araneae ☒ ☒ ☒ ☒ "  
Nematocera ☒ ☒ ☒ ☒ ☒ ☒ " "  
Galerucella " "  
Chironomidae ☒ " "  
Delphacidae ♂ "  
Diptera " "  
Aphididae " "  
Lepidoptera (mangled) ♂ "  
Acari " "  
Miridae " "  
Psyllidae ♂ "  
Hymenoptera " "  
Phoridae " "  
Hymenoptera " "  
Psocoptera " "  
Hemiptera " "  
Geometridae larva " "  
Brachycera " "  
Cixius " "  
Simuliidae "

Doryctidae "  
Coleoptera larva "  
Lep or Trichop.?

Cynipidae?

(3. Nov. 2016)

Processing sweep net sample ~~KNWP: Ento: 100185731~~  
KNWA: Ento: 11013, from east half of plot MG24, 3 Aug. 2016  
Label: UAM100185731

- Psyllidae ..
- Culicidae ..
- Araneae ☒
- Nematocera ..
- Phoridae
- Ichneumonidae ..
- Chironomidae ..
- Hemiptera
- Simuliidae
- Empididae

ask Corlane about  
Christmas get-together

Processing sweep net sample KNWP: Ento: 11015,  
from east half of plot MG26, 26 July, 2016

- Gnastrophala (Synil) ☒ II
- Araneae I
- Brachycera ..
- Geometridae larvae ..
- Nematocera ☒ ..
- Psyllidae ..
- Hymenoptera ..
- Brachycera ..
- Cicadellidae ..
- Mycetophilidae "
- Ichneumonidae I
- Acarina
- Aphididae ..
- Simuliidae ..
- Empididae ..
- Chironomidae ..
- Culicidae

I formatted this week's Refuge Notebook.

Processing sweep net sample KNUK: Ento: 11617, from  
east half of plot MG28, 9. August. 2016

label: UAMU0185732

*Echnemoidae* ☒  
*Nematocera* ☒  
Hemiptera  
Araneae ☒  
Brachycera  
Lepidoptera larva  
Gastropoda (snail) ☒  
Phoridae  
Entomobryidae  
Mycetophilidae  
Chironomidae  
Culicidae  
Aphididae  
Psocoptera  
Hymenoptera  
Proctotrupidae (?)  
Cicadellidae

At home I worked for three hours on  
assembling a database of Refuge Notebook  
articles.

U. Nov. 2016 |

Processing sweep net sample KNUK: Ento: 11619,  
from east half of plot MG29, 9. August. 2016

label: UAMU0185735

*Mycetophilidae* ☒  
Culicidae  
Gastropoda (snail) ☒  
*Nematocera* ☒  
Acari  
Brachycera  
Geometridae larva  
Cicadellidae  
Araneae  
Hymenoptera (Proctotrupidae?)  
Psyllidae  
Hybotidae  
Echnemoidae  
Phoridae  
Moridae  
Diptera  
Lepidoptera larva  
Hemiptera  
Aphididae  
Echnemoidae  
Insecta larva  
Hemiptera  
Chironomidae

Processing sweep net sample KNUW:Ento:11021, from  
east half of plot M630, 3. August. 2016

label: UAM100185737

Nematocera  
Lepidoptera or Trichoptera  
Psyllidae  
Mysmenae  
Proctotrupoida  
Araneae  
Miridae  
Brachycera  
Flebotomidae  
Culicidae  
Psocoptera  
Coniopterygidae  
Delphacidae  
Cicadellidae  
Acari

Processing sweep net sample KNUW:Ento:11023, from  
east half of plot M631, 29. July. 2016

label: UAM100185733

Culicidae  
Flebotomidae  
Brachycera  
Chironomidae  
Nematocera  
Empididae  
Phoridae  
Araneae  
Acari  
Aphididae  
Psocoptera



KNWU: Ento: 11025

Processing sweep net sample ~~MB32~~ fr  
from east half of plot MB32, 29. July. 2016  
label: UAM100185736

- Culicidae °
- Hymenoptera °
- Brachycera °
- Phoridae °
- Coleoptera °
- Aphididae °
- Chironomidae °
- Psocoptera °
- ~~Gastropoda (snail) °~~

Processing sweep net sample KNWU: Ento: 11027,  
from east half of plot MB33, 21. July. 2016  
label: UAM100185734

- Gastropoda (snail)  °
- Brachycera 1 °
- Phoridae °
- Aphididae  °
- Cicadellidae °
- Nematocera °
- Miridae °
- Empididae °
- Vespidae °
- Acarid °
- Araneae °
- Echneumonidae °
- Hemiptera °
- Insecta (Thysanoptera) °
- Neuroptera larva °
- Diptera larva °

Only 17 more samples to go!

7. Nov 2016

KUMP:Ents:10952

Processing sweep net sample ~~M633~~, from east half of plot M635, 26. July. 2016  
label: UAM100185746

Hymenoptera (Chalcididae?, long abdomen) "

Ichneumonidae " "

Nematocera  " "

Arachnida " "

Nematocera " "

Aphididae " "

Pisapriidae " "

Aphididae " "

Chironomidae " "

Miridae " "

Hemiptera " "

Ichneumonidae  " "

Thysanoptera " "

Cicadellidae " "

Brachycera " "

Hydroptera " "

Sciomyzidae " "

Neuroptera larva " "

Culicidae " "

Psyllidae " "

Acanthoptera " "

Opiliones " "

Semiostridae " "

Psocoptera " "

minute wasp "

Processing sweep net sample KUMP:Ents:10954, from east half of plot M637, 3. August. 2016  
label: UAM100185742

Vespa " "

Cicadellidae  " "

Ichneumonidae " "

Arachnida  " "

Chironomidae " "

Brachycera " "

Nematocera " "

Ichneumonidae " "

Lepidoptera? larva " "

Palpaeidae " "

Aphididae " "

Thysanoptera " "

KNWR:Ento:10956

Processing sweep net sample ~~AFB~~  
from east half of plot M639, 29 July 2016  
label: VAM100185739

Brachycera

Hymenoptera (Diptera)

Tipulidae

Aranidae

Hemiptera

Ichneumonidae

That was desolate.

Processing sweep net sample KNWR:Ento:10958  
from east half of plot M641, 21 July 2016  
label: VAM100185743

Chalcididae

Aphididae

Diptera

Nematocera

Mycetophilidae

Acanthopterygidae

Culicidae

Psyllidae

Miridae

Chironomidae

Phoridae

Brachycera

Aranidae

Gastropoda (Snail)

Ichneumonidae

Collembola

Cicadellidae

Hybotidae

Processing sweep net sample KNUK:Ent:10950, from  
east half of plot MG34, 21 July 2016

label: UAM100185745

Gastropoda (small)

Nematocera

Lepidoptera

Aphididae

Neuroptera? larva

Psocoptera

Psyllidae

Hybotidae

Cynipidae

Araneae

Ichneumonidae

Phoridae

Dipteridae

Brachycera

Culicidae

Ichneumonidae

Chironomidae

Acanth

Yeah, the last of the east samples is done!  
Only about 12 more to go.

8. Nov. 2016 R

John asked me to compile Tetlin FIA data and  
map these with Kenai NUR, so I will be doing  
that.

✓ time

I produced the map that John  
requested.

I did work on selecting remaining Sitka  
project arthropod samples to be processed.

9. Nov. 2016

✓ vehicle credit card

- Refuge Notebook

- travel form for  
Fairbanks

- get mtg data

✓ maps for John

- AIC ~~to~~ Newsletter

Brs News post

I worked on maps of species  
richness data from Kenai and  
Tetlin for John.

Processing sweep net sample KNUK:Ents.10982,  
from west half of plot M604, 10 August 2016

Elasmestelus

Aphididae ☒☒

Araneae ☒☐

Cicadellidae ♂

Echneurozoidea ♂♂

Psyllidae

Gastropoda (snail) " "

Entomobryidae ☒

Hybotidae " "

Nematocera " "

Mycetophilidae ♂

Salticidae " "

Lepidoptera " "

Brachycera " "

Tipulidae " "

Formica (I think F. nearcticus)

Chrysomelidae

Symphyla " "

Miridae " "

Thysanoptera

Processing sweep net sample KNUK:Ents.10984,  
from west half of plot M606, 18 July 2016

label: UAM100185744

Nematocera ☒☒☐

Cicadellidae ♂

Phoridae ☒

Miridae " "

Araneae ☒

Hybotidae ♂

Brachycera ☒♂

Aphididae ☒☒☒♂

Curculionidae

Chironomidae ♂

Simuliidae

Mycetophilidae

Elasmestelus

Echneurozoidea " "

Entomobryidae " "

Acarid " "

Symphyla " "

Insecta (Minute larva)

Gastropoda (snail) " "

Chalcidoidea

Hemiptera





Processing sweep net sample KNUK:Ent:11009, from  
west half of plot M6-18, 1. August 2016

label: JAM100185747

Cicadellidae ☒☒

Diptera larva

Araeneae

Nematocera

Brachycera

Lepidoptera larva

Chironomidae

Processing sweep net sample KNUK:Ent:11008, from  
west half of plot M6-20, 20. July 2016

label: JAM100185748

Araeneae ☒☒

Cicadellidae ☒☒

Brachycera ☒

Nematocera ☒

Cixiids

Thripidae

Echeimonomiidae

Psyllidae

Cantharidae

Aphididae ☒☒

Chironomidae

Lepidoptera or Trichoptera

Cynipidae

Dolichopidae

Collembola

Staphylinidae

Phoridae



Processing sweep net sample KANR:Ento:10953,  
from west half of plot M635, 21. July, 2016

Label: UAM100185750

Brachycera  
Culicidae  
Empididae  
Mycetophilidae  
Aphididae  
Thysanoptera  
Dolichopodidae  
Ichneumonidae  
Mirisidae  
Diptera larva

11  
Processing sweep net sample KANR:Ento:10951,  
from west half of plot M634, 21. July, 2016

Label: UAM100185752

Sciomyzidae  
Araneae  
Hybotidae  
Neuroptera larva  
Brachycera  
Mycetophilidae  
Ichneumonidae  
Culicidae  
Aphididae  
Nematocera  
Tipulidae  
Psocoptera

KNWR: Ento: 10959,

Processing sweep net sample MG44  
from west half of plot MB41, 21 July 2016  
label: UAM100185749

- Culicidae
- Araneae
- Cicadellidae
- Nematocera
- Brachycera
- Mycetophilidae
- ~~Araneae~~ Terymidae
- Miridae
- Aphididae
- Hybotidae

Processing sweep net sample KNWR: Ento: 11026, from west  
half of plot MG32, 29 July 2016  
label: UAM100185751

- Brachycera
- Araneae
- Nematocera
- Aphididae
- Gasteropoda (snail)
- Hybotidae
- Tipulidae
- Acari
- Cicadellidae
- Coleoptera
- Lepidoptera larva
- Diptera larva

Nov  
15. Oct. 2016

- Guppy response. Processing sweep net sample  
KNWR: Ent: 11018, from west half of  
plot MG28, 9. August 2016

label: UAM100185755

Gastropoda (snail) □

Brachycera ■

Araneae

Mycetophilidae

Hybiidae !

Dugesiidae

Nematocera

Ichneumonidae

Phoridae

Aphididae

Foridae

Thysanoptera

Sminturnidae

Acari

Coleoptera

Procoptera

Processing sweep net sample KNWR: Ent: 11022, from  
west half of plot MG30, 9. August 2016  
label: UAM100185754

Brachycera ■

Psyllidae

Nematocera

Dugesiidae

Ichneumonidae

Miridae

Thysanoptera

Cixius

Aphididae

I spent the rest of the morning preparing  
these Stikok waterbed arthropod samples to be  
shipped out.

Nov  
16 Oct 2016

I finished packaging arthropod specimens and drove them to FedEx Kenosha to get them shipped out.

I am examining some willow galls I collected on a walk today. On Salix glauca I have some elongated, horn-like buds. These are old and dry, breaking off the stem easily. The buds are hollow, filled only with hairs. At the distal tip of the horns are 1-5 old, dry eggs. In the stem at the base of which I found one larva, I think a pupa, which I photographed (frames 5574 - 5576) and collected (BOLD-U77). The remaining two elongated buds had vacant chambers at their bases.

Age: A gall on Salix bebbiana in a stem was also vacant.

I dissected the remaining Salix bebbiana rosette galls I had collected on 26 Sept. 2016, but all of these were vacant.

On a Salix bebbiana leaf from this same day and place was a Pontania gall. I photographed the larva (frames 5577 - 5578) and collected this (BOLD-LD2).

Nov 2016  
17 Oct

I uploaded Sliko project worm sample data to Avotos.

Examining earthworm sample KNUPL:Ento:11042. This contained two worms that both look like enchytraeids. One is yellowish and the other is pale. I photographed these together (frames 5579 - 5599). The larger, yellow worm I placed in LifeScanner vial BOLD-YX4; the smaller, white worm I put in vial BOLD-O92. I had missed one more small, white worm, which I placed in a vial (label: UAM100185547).

Examining insect sample KNUWR:Ento:11047. Diadema 29-33 - Dendrobena octaedra

D. octaedra adults:  
D. octaedra immatures:  
enchytraeids:  
→ photographed (frames 5600 - 5611), placed in LifeScanner vial BOLD-U93.  
→ vid with barcode UAM100185761

I worked on updating the Refuge checklist

18. Nov. 2016

Refuge Notebook  
- C. Guppy e-mail

I formatted and posted  
this week's Refuge Notebook  
article.

I worked on a new draft of the Kenosha Nur  
checklist.

I went on a walk this afternoon.

I examined sausage-shaped stem galls from  
Salix pulchra. All of these were occupied by  
Eurytoma larvae. I found seven of these and no  
gall midges - eight

21. Nov. 2016

- LCC chapter review  
✓ Bio News  
- worm specimens  
✓ Guppy data  
- Kenosha (Tetlin spp.)  
lists for John

I packaged and shipped out  
recent life-scanner specimens.

Examining worm specimen  
KNWR:Ento:11033. This vial  
contained three worms, all looking  
like immature lumbricids. They

looked similar. Two went into a vial (label:  
UAM100185760). The third went into a LifeScanner  
vial (BOLD-2F2).

Examining worm specimen KNWR:Ento:11034

D. octaedra adults → KNWR:Ento:11034  
UAM100185759

Dendrobelus rubidus adults → UAM100185758

immature lumbricids ☒ → UAM100185756

There are also nine enchytraeids. It is hard to  
tell whether these represent one or multiple  
species.

enchytraeid (1) → BOLD-FC6

enchytraeidae ☒ → UAM100185757

Examining specimen KNWR:Ento:11050

UAM100185768 → Dendrobaena octaedra adult

D. octaedra immatures ○ ○

yellow enchytraeid → BOLD-BRL

white, minute annelid worm → BOLD-DR4

same yellow enchytraeid → UAM100185762

(22 Nov 2016)

- Fairbanks travel
- specimens to Mulvey
- LCC synth. chapter
- worm specimens
- Kenai / Tetlin lists
- time

Examining worm specimen  
KNUR:Ents:11044

mites  
dust

*Dendrobaena octaedra* adult :  
*D. octaedra* immature : } UAM100185767

Examining worm specimen KNUR:Ents:11045.

*Dendrodrius rubidus* adult :  
*Dendrodrius* -

Fluoridone graph  
for John

I made some fluoridone  
concentration graphs for John.

Examining worm specimen KNUR:Ents:11046.

*Dendrobaena octaedra* adult :  
*D. octaedra* immatures 1 : } UAM100185766  
 Lepidoptera larvae  
 small, pale annelid → BOLD-VN5

Examining worm specimen KNUR:Ents:11040

In this vial there was one small, immature earthworm  
 and one Nematocera larva.  
 earthworm → BOLD-9Q2  
 Nematocera → BOLD-QZ6

Examining worm specimen KNUR:Ents:11043

In this vial is a single enchytraeid (?)  
 En → BOLD-PU2

Examining earthworm specimen KNUR:Ents:11041

*Dendrobaena octaedra* adult :  
*Dendrodrius rubidus* adult :  
 immature *Lumbricidae* ☒ :  
 UAM100185764 → 11041  
 UAM100185765  
 UAM100185764

There were 7 enchytraeids, all looking pretty similar  
annelids → BOLD-N14

Annelida 6 → UAM100185775  
 Diptera larva → BOLD-WV7

23 Nov 2016

LCC Synchropter | Examining specimen

KNWR:Ents: 11049

Dendrobena octaedra adult → UAM100185774  
KNWR:Ents: 11049

Annelida → BOLD-RJ7

Annelida → BOLD-OQ6

Annelida ♂ →

I responded to comments / edits on our  
Northwest Boreal LCC synthesis chapter.

Examining earthworm specimen KNWR:Ents: 11037

immature earthworms  → one in vial BOLD-XK7  
UAM100185771  
↳ eight in vial KNWR:Ents: 11037

enchytraeidae (?) → BOLD-KB1

Lepidoptera larva → BOLD-OW4

Examining worm specimen KNWR:Ents: 11038

Dendrobena octaedra adult } UAM100185772

D. octaedra immatures  } KNWR:Ents: 11038

The enchytraeids (?) all look similar.

Annelida → BOLD-170

Annelida → BOLD-YM7

Annelida ♂ → UAM100185769

After scrutinizing them more I thought that there  
might be two morphospecies here: a longer, thinner one  
(BOLD-170) and a shorter, stockier one (BOLD-YM7).

Examining earthworm specimen KNWR:Ents: 11036

Dendrodillus rubidus adult → UAM100185770

Lepidoptera larva → BOLD-TW7

Examining worm specimen KNWR:Ents: 11048

This vial contained two immature earthworms,  
both of which look like Dendrobena octaedra.

Lumbricidae immature → BOLD-632

Lumbricidae immature → UAM100185776

Examining earthworm specimen KNWR:Ents: 11039

Dendrodillus rubidus adult → UAM100185777

Examining worm specimen KNWR:Ents: 11035

Dendrobena octaedra adult

Lumbricidae immature, looks like D. octaedra → UAM100185778, KNWR:Ents: 11035

Other Lumbricidae immature → BOLD-MK4

Annelida → BOLD-7Y7

Annelida → BOLD-HJ9

25. Nov. 2016

- Libellula speciosa
- Refuge Notebook
- Archaeognatha require

Formatted today's  
Refuge Notebook article.

I did a little ~~sequencing~~ checklisting work.

I tried to collect some Badonnelia Hteii for sequencing as I saw that this was not represented on BOLD. I swept the mechanical room. I collected immature Psocoptera (→ BOLD - XJ1) and one adult that was not Badonnelia. I will need to ID this later (→ CAM100185779). There were also dermestid larvae.

28. Nov. 2016

Kenai/Tettlin spp  
let for John

- psocoptera from Friday

ADia news

- Kenai/Tettlin  
plif for John

hairy wings.  
1 → 6 → ?

I produced some Kenai  
LTEMP/Tettlin FRA plif  
summaries requested by John.

Trying to identify a  
psocid I collected on Friday.

It has reduced, elongate,  
Keying using BTJ, p. 261

Leptopsocidini? no.

Psyllipsocidae

Keyed using Modford (1993), p. 46 1 → 2 → Doryptorina  
lanestica Photogrylidi: Frances 5612 - 5622



(29. Nov. 2016)

- ✓ finish plot for John
- ✓ fine for VA trip
- ✓ Lifescanner specimens/loan
- notebooks to Arctos
- start record talks
- ✓ travel

I finished making a Tet/Dm/Kenai chord plot for Dda.

Pulling a Lepidoptera specimen from KNUP:Ento:11066. I photographed this using the ipad → BOLD-Y46

Pulling a Diptera larva that had been with specimen KNUP:Ento:11060 → BOLD-L94

Now I am pulling immature pseudoscorpions from specimen KNUP:Ento:10324 for sequencing. I expect that DNA may be too degraded for sequencing, but this is worth a shot.  
4 immatures → BOLD-575

I packaged Lifescanner specimens to be shipped out and entered the loan in Arctos.

Debbie helped me to make travel arrangements for Fairbanks in February.

(30. Nov. 2016)

- ✓ set up email forwarding
- check bristletails

I worked a little on the Kenai NWR checklist.

I drove over to ADF&G to check for records in Gene Lake of Coregonus laurettae and in Windpecker Lake of Onchomychus clarkii, finding neither of these records.

I added significant features to the Kenai NWR checklist: ability to include notes on taxonomy, distribution, and biology.

(1. Dec. 2016)

- collecting kit

Examining a bristletail I collected from Oregon, Lowell St. Park, September 2015. It is a ♀ Pedotortus, subgenus Pedotortus. It looks closest to Pedotortus yosemitae.

I make a post to Bio News

Keying KNUP:Ento:10748 using Picchi (1977) p. 267  
1 → 2 → 3 → 4 → 9 → 10 → 12 → A. simplex

(8 Dec. 2016)

- ARES presentation
- materials for tomorrow's meeting w/ KPC

I worked on getting  
Refuge Notebook  
articles.

Refuge Notebook

I attended a ~~meeting~~ lecture by Coome Walker on salmon diet. This was a very interesting talk.

Some highlights:

- ↑ allor cover in catchment of stream ↑ N in stream
- Our watersheds have plenty of P, so this is, not limiting.
- Community ↑ in productivity when ↑ C experimentally, simulating input of wetlands.

I started on my ARES presentation.

I did some work in the collection labeling specimens.

(11 Dec. 2016)

- Post Refuge Notebook
- KPC meeting

I worked on checklisting for Kenai NWR.

In the afternoon John and I met with Cedric Buckley, Arjun Raman, and Alan Burrows about genetics work on the Kenai.

(2 Dec. 2016)

I worked on checklisting.

I reexamined specimen ~~KNUK:Ento:~~ KNUK:Herb: 10366. It does look like Draba incerta.

(3 Dec. 2016)

I worked on checklisting.

- Δ password
- checklisting
- BOLD → Arctos records
- cecid fallc

Write about RTNs. Megan

Write about K. rissneri Megan

(14. Dec. 2016)

✓ Post Refuge Notebook  
- checklist  
- check in BDJ article

I posted last week's and  
this week's Refuge Notebook  
articles.

I spent most of the day working on the  
checklist.

(15. Dec. 2016)

I finished and posted a draft of  
the Koini NWR checklist.

- cent MS? ↑

I photographed one of two platygasterid wasps  
in vial (KNUF:Ent: 4920). This one looks like  
Inosternus. (frames 5623-5640).

(16. Dec. 2016)

✓ Post Refuge Notebook  
✓ change password  
- upload DS-Browse file  
records to Arctos.

I worked with BOLD  
enchytraeid and earthworm  
sequences that I received  
yesterday.

(19. Dec. 2016)

- time  
- compost flies  
- coxid tube

This morning I collected some  
sphaerocerids from my compost pile.  
These had emerged when the weather

warmed on Saturday, 17. December, then froze  
on the snow when the temperature dropped.

Keying one of this series using MND, p. 995  
1 → 2 → 3 → 3 (→ 37) → Sphaerocera

I spent most of the day working on uploading  
LifeScanner records to Arctos.

(20. Dec. 2016)

- time  
- coxid tube

I worked on checking BOLD  
records being moved to Arctos,  
mostly double-checking coordinates  
and dates.

Today I obtained a copy of Kim (1968). The  
Sphaerocera I looked at yesterday is  
Sphaerocera curvipes.

I finished uploading those records to Arctos.

I scanned my previous lab notebook and  
uploaded the file to Arctos.

21. Dec. 2016

- Cecil talk

I worked on analysis of cecidomyiid data.

22. Dec. 2016 I am examining rose galls from *Salix pulchra* that I collected from the outlet stream of Nordic Lake yesterday.

First gall - frames 0094-0098

This one was empty, unoccupied.

Another rose gall - frames 0099-0101

This contained a parasitoid, which I photographed (frames 0102 - ~~0103~~ 0113). I put this one in a petri dish to see if I can rear it out (2016MLB017). → KUMP: Ent: 11181

On that same stem (see frames 0099-0101) was a swollen lateral bud. This was filled with frass and a sawfly larva, which I photographed (frames 0114 - 0124). This one I put into Lifescan vial BOLD-JMI. → KUMP: Ent: 11182

Now I am examining a stem having bud/open galls including a horn-like bud gall. (frames 0125 - 0127). This horn gall contained a cecidomyiid larva which I photographed (frames 0128 - 0154). This I placed in Lifescan vial BOLD-VWJ. → KUMP: Ent: 11183

Another horn gall from the same stem also contains a cecid larva (frames 0155 - 0157). This one I will try to rear out (2016MLB018).

→ KUMP: Ent: 11184

*Eurytoma* spinescens

✓ Coll Toby

- BDT MS

I started revising my BDT article.

Three of the eurytomids I collected from galls of *Salix pulchra* were now adults. I had kept them the larvae in a petri dish. I pinned these.

23. Dec. 2016 I worked on the grassland NGS MS.

(27. Dec. 2016) I worked on my grassland archypt. manuscript.

I examined a specimen I collected (Inst. no. 4219909). This may be *Scleria pseudomyrsinitis*, but this old specimen is hard to work with.

(28. Dec. 2016) I worked on my grassland archypt. NGS manuscript, nearly finishing.

(29. Dec. 2016) I submitted the BDI grassland archypt. MS.

Refuge Notebook

I formatted last week's and this week's Refuge Notebook articles.

I made a post in Ecology News on John's two articles in Fish & Wildlife News.

I printed off Aotus barcode container labels and worked some in the herbarium collection.

(30. Dec. 2016) I am re-examining a *Calamagrostis* collected on 20. July. 2016 2.75 km east of Slikok Lake.

Keying using Wright et al. (2012), pp. 91 → 9 → 5 → 7 → 8 → *C. stricta* subsp. *inexpansa*

Colours on my specimen are 3.5-4 mm long. Leaves involute. Lemma awns seem stout to me, much more so than the callus hairs.

Also keys to *C. inexpansa* in Welsh (1974).

John asked me to give him a list of exotic species for the Refuge... I did so.

I ended up working on the - Sikes et al. ms | Kenai Nuki checklist to address his request.

3. Jan. 2017

3. Dec. 2017

✓ English Express

I did some data entry  
for KNUK: Herb specimens.

I worked on the Kears Nup checklist.

4. Jan. 2017

- cecid presentation  
- BDF article  
- time

I worked again on some  
KNUK: Herb plant pressing and  
data entry.

This morning before work I collected several  
rose galls on Salix barclayi from Mike's swamp  
corral.

A rose gall, photographed (frames 0092-0093).

There were inquilines (frames 0094-0098).

(frames ~~108~~ 99-108, more inquilines).

There was a Rabdophaga larva in the center  
(frames 109-112). I photographed the sternal  
spatula using the Nikon (frames 5641-5646).

inquilines → 2017MLB001, rear out (?)

R. rosaria group larva → attach I put this in Kolt  
to clear overnight. - 2017MLB002 → KNUK:Ent:11188

I extracted four more R. rosaria group larvae  
from four rosette galls of Salix barclayi, which  
I will attempt to rear in a petri dish (2017MLB003)

I worked on my gall wedge talk, improving the  
dendrogram.

5. Jan. 2017

Refuge Notebook

I worked on my dendrogram  
for the ceid talk.

I mounted specimen KNUK:Ent:11188 in glycerol  
and photographed it.

6. Jan. 2017

Refuge Notebook

- ceid talk

✓ Kirk Salix

- was failures?

White gall

Wedge volunteers

Wk Raven about galls

I started new Refuge Notebook  
document Notebook documents  
for 2017 and posted this week's  
Refuge Notebook article. I also  
compiled a bibliography of the  
2016 articles.

I entered data for the  
list of the plants from the plant presses and  
filed those into the collection. I am now caught  
up on this.

Now I am examining rosette galls from a  
Kirk River willow collected on 23. Sept. 2016.

First gall (frames 0092-0095). ~~10/11~~ There were  
no Dasineura inquilines and was only one larva in  
the center (frames 0095-0109) → 2017MLB004  
I placed this in Kolt to clear.

Another gill from the same willow:  
gill (frames 0110 - 0112). Again, a single larva  
in the center (frames 0113 - 120). → 2017MLB005  
(more frames through 0125).

These specimens had been in the freezer  
since they were collected.

[9. Jan. 2017.]

- Cecil talk  
✓ examine specimens  
Kolt from Friday  
✓ collect localities  
- enter data from  
last elodea survey.  
- collect data

I photographed some of the  
localities Deaneque had marked  
in his copy of the Gazetteer and  
uploaded these to Arctos.

I unlocked Peave Creek sampling  
points to GPSs.

I mounted and photographed Rabdiphysa specimen  
KNUW:Ento: 2017MLB004 and made a record in  
Arctos.

Examining rose gills on Salix richardsonii that I  
had collected at Palmer Creek and frozen. I  
think this small larva may be a second instar  
larva. It is quite small and the sternal spatula is not  
obvious. - 2017MLB006 (frames 0101 - 0108)  
→ KNUW:Ento: 11192

I dissected another Salix richardsonii gill.  
This contained a mature larva, though smaller than  
what I usually see in S. lauray. Again there were  
no inguillines. In retrospect 2017MLB006 might possibly  
have been a very small third instar larva.  
(frames 0109 - 0122) → 2017MLB007 - KNUW:Ento: 11191

I received specimens from Tracy Melvin  
(formerly Tracy Swan) today. I entered these into  
Arctos.

KNUW:Ento: 11194: I removed one from vial  
BOLD-584. I photographed this (frames 0123  
- 0133) before placing it in a separate vial  
(BOLD-245). → KNUW:Ento: 11195

KNUW:Ento: 11193: I pulled one of two larvae from  
vial BOLD-571. I photographed this (frames 0134 -  
0144) and placed it in vial BOLD-245.  
→ KNUW:Ento: 11196

(10. Jan. 2017)

John asked me to write a Refuge  
Notebook article, so I will do so. I did.

(11. Jan. 2017)

I worked on finishing my  
- final Refuge | Refuge Notebook article.  
Notebook article.

Examining a rosette gall from Salix pulchra  
(2017MLB007). In this gall was a single Rabdophaga  
larva, which I photographed (frames 0168-0192).  
I placed this specimen in KOH to be cleared.

I photographed and dissected gall 2017MLB008,  
but this was empty. (frames 0193-0198).

(12 Jan. 2017) I drove out to Bott Lake and  
Lower Skitak campground to look for  
Rabdophaga rosaria group galls on Salix bobbiana  
and Salix glauca.

(13. Jan. 2017)

Examining a growth that may be a gall on  
an unidentified willow from Lower Skitak campground  
(2017MLB011). This turned out to be a  
partially-developed catkin. I found no galls or  
gall inducer.

Now looking at possible galls from Salix  
bobbiana, 2017MLB010.

First, a stem gall. This was an old gall. It was  
vacant.

None of the terminal deformities that I collected  
on Salix bobbiana turned out to be rosette galls.

I mounted Rabdophaga rosaria group larva 2017MLB007  
on a slide.



[17. Jan, 2017]

- last worm sample vials failed Slikok worm samples.
- AKES presentation

I am looking for Slikok project annals that failed to sequence.

KMUP:Ento:11051 - contaminated - may submit

KMUP:Ento:11052, from the same vial,

→ put in life scanner vial BOLD-146.

KMUP:Ento:11077 - this may have failed to sequence. It is still at the "sample received" stage. → Try KMUP:Ento:11048, from same collecting event. → put in vial BOLD-506.

These were the only failures from the annals.

I worked on checklisting a little.

I associated my lab notes with Kani ground study 2015 specimen records on Arcos.

Write Harry

Write Derek

Cillet (2002), p. 19 → 13 → 18 → 19 → 20 → 21 → 22 →

S. pseudomyxites?

→ 14 → 15 → !

After reading descriptions of Argus (1973), I think this is Salix commutata, just an old specimen where most hairs on the leaves have been worn off. The large stipules and other characters point to S. commutata.

[18. Jan 2017]

- AKES presentation

- food web/network?

- time

AKES files

I mostly worked on my

AKES presentation, but I

also started work on a

Kani NMR network graph.

[19. Jan. 2017]

- meet w/ Dick Rejer

- Refuge Notebook

- food web

- AKES presentation

I shipped out LifeScanner specimens.

I met with Dick Rejer this morning - about molluscs

A.H. Clarke. The Freshwater Molluscs of Canada

FSBN 0 160 0022-9 1981

↳ Dick recommended.

I helped Carl with setting up the sand table.

I looked into Radix auricularia genetics.

20. Jan. 2017

I am looking at Radix sequence  
later.

I met with Dick Regor again this morning  
regarding

23. Jan. 2017

<ul style="list-style-type: none"> <li>✓ Refuge Notebook</li> <li>- checklist?</li> <li>- lab clean-up</li> <li>- Radix ABC-1?</li> <li>- start Archaeomys the computer</li> </ul>	<p>I removed some tissue from small specimen KNUSP:Ento:11200 and placed this in vial BOLD-591 for COI sequencing</p>
--	---

I did some checklisting work, finishing a  
new draft of the checklist.

24. Jan. 2017

I photographed a dusky shrew  
collected by my mouse traps under the chicken  
coop. I had found the two last night, ~~thru~~ The  
traps had not been checked for about a week.  
→ one leg fragment, maybe Coleoptera → BOLD-067.

Biology staff meeting at 10:00 am →

presentation next week  
stable isotope (Beaver Creek) Feb 7-8  
genetics spruce —

Slit → Skill inventory?

Goat/sheep study/survey?  
Kenai Peninsula vegetation classification - ground truthing  
planning workshop (March 7)? 10 days help

modify EA (IPM forterrestrial plants)  
KENWR website update  
    ↳ add molecular approach

elodea management (Journal Aquatic Plant Management)  
trumpeter swan paper and analysis

Bat analysis

↑ finish data  
entry

historic vs contemporary photos

Office move

Prep on a slide  
21 - broken  
checklist  
life history

Dom Watts  
Tracy Melvin  
Cade Kellam  
Kyra Clark

— Gull rock

Tetlin

(31. Jan. 2017)

I worked a half day, mostly on my AKEE presentation.

(1. Feb. 2017)

Time

- AKEE presentation

- Turaxacum seeds 1.

Tess Ausmus

I mostly worked on my AKEE presentation.

(2. Feb. 2017) - I shipped out Lifescanher specimens.

- I worked on my AKEE presentation.

I posted last week's Refuge Notebook outside.

(5. Feb. 2017)

✗ formal meeting

✗ email correspondence

✗ equipment stuff

- Refuge Notebook

- Kenai NWT pull list

- Bio News - John

✗ Magnus updates

✗ Lifescanher talk

- Callie letter

I worked on updating the Kenai Bio staff literature bibliography on the website.

(9. Feb. 2017)

- harvest change

✗ Refuge Notebook

✗ Bio News

I posted last week's and this week's Refuge Notebook articles.

I posted Biology News updates

I stuck out between Nordic Lake and the junction to collect chage for next week's talk.

I helped Leah set up the sandbox, but this is far from done.

(10. Feb. 2017)

- AKES presentation posted
- Chaga materials
- UAM slug ID
- snail correspondence
- AKES call for papers
- ICREA announcements
- lag bolts

I worked on AKES correspondence.

I started the 2017 Newsletter

Examining ~~UAM~~ UAM100139880. This slug contains two slugs. One is smaller and dark gray uniformly without a dorsal ridge on the tail; the other is larger, ~~is~~ brown, with a brown band on each side of the mantle. It has a much more pronounced ridge on the dorsal side of the tail. I removed some tissue from this larger slug's left side for COI sequencing. →

(11. Feb. 2017)

- chaga talk

I did some correspondence regarding Archaeoglyphs and AKES.

I did work on my chaga presentation.

(13. Feb. 2017)

- write Ilya
- chaga talk
- letter to Dominique

I worked on my chaga talk. I attended the bio staff meeting at 09:30.

(14. Feb. 2017)

- prepare for chaga talk
- letter to Dominique
- start AKES Newsletter article?
- Don blurb on web

I worked on my chaga talk.

(15. Feb. 2017)

Much of the day was consumed in giving my chaga talk, prep, and follow-up.

(16. Feb. 2017)

I took snowmachine training at Picnic Lake. I hurt my finger at the end of the day, but I hope it is just a sprain.

17 Feb. 2017

- ✓ email R.L.
- injury paperwork
- ✓ Regen snail guide to Dan Bogen
- ✓ write C. Flavelle
- Enquire of Guppy
- call John Trent
- ✓ write Mark Ilg
- Dom bio

form } CA-1  
 } CA-16  
 ✓ SMIS  
 ✓ CA17

21 Feb. 2017

- ✓ medical paperwork
- Refuge notebook
- AKEES Newsletter article
- vorbenone webinar
- ✓ garden club talk script
- lab forms, hood errata/gloss
- ✓ write Guppy
- ✓ write Jess / Megan
- ✓ write MS
- KIRA announcement

I worked on correspondence this morning.

I reviewed the Sites at MS.

I started on AKEES Newsletter article.

22 Feb. 2017

I worked on my AKEES Newsletter article.

23 Feb. 2017

- finger check-up question
- Avian training
- Newsletter article
- ✓ grant meeting record
- Elodea work

I worked on my AKEES Newsletter article.

We just received word of Elodea in Sport Lake.

John passed Tomco's fluridone concentration data to me, which I compiled and graphed with our data from SePRO.

24 Feb. 2017

- Refuge Notebook
- scrutinize fluridone data
- Sport Lake check,
- ✓ injury paperwork

I prepared compared SePRO SRTC and Tomco lib fluridone results for John.

I photographed specimen KNWR:Ento:11181.

Parasitoids from sample 2017MLB001 had recently emerged, three of them. One of these I photographed (frames 275-278) and put into LifeScanner vial BOLD-558.

I drove out to Sport Lake to see where elodea had been found. APFDG had drilled many holes in a relatively small area, finding elodea in only two or so holes. It did not appear to be dense.

(27. Feb. 2017)

- Aviation training
- Refuge Notebooks
- ✓ doctor paperwork

I spent much of the day getting equipment together for surveying elodea in Sport Lake tomorrow.

(28. Feb. 2017)

- ✓ credit card statements
- Refuge Notebooks
- Aviation safety training
- ✓ *Cirrius* paper announcement
- ✓ checklist - additions

I worked on taking Aviation Safety Training, finishing A-100. I did do a little check listing work.

(1. March 2017)

- ✓ Injury paperwork
- ✓ time
- AKES Newsletter announcement

I caught up on formatting and posting Refuge Notebook articles.

- ✓ Refuge Notebooks
- Aviation safety
- contact KPC files about SDC etc

I started summarizing life scanner specimens / samples for my AKES Newsletter article.

- lunch

(2. March 2017)

- Roger finance business
- life scanner article
- fine food
- or safety training

I worked on life scanner data for my AKES Newsletter article

At home I worked more on the AKES Newsletter article.

(3. March 2017)

- ✓ Sport Refuge Notebook
- ✓ Sport Patterns article on Marston.
- ✓ Injury paperwork
- ✓ Sport Genome MS

I made posts to the Kenoi NWR website and akentrac.org for publications that became available today.

(6. March 2017)

- ✓ Orthostin article

I formatted the article on Orthostin for the AKES Newsletter.

I received new *Labdophaga rosaria* group sequences today, so I ran a phylogenetic analysis and sent results to Dominique in a letter.

I removed a section of the trunk of specimen  
KUMP:Ento:7331 and put this into Lifescanner  
and BOLD-US2.

7. March 2017

- write Trevor re: lichens & bryophytes
- write Megan about primers
- correct/update BOLD data
- Lifescanner article
- write CPC files
- write Megan about tissue/specimen retention

I worked on my AKES Newsletter article.

8. March 2017

Wijny paperwork | I attended the Sport Lake club meeting at Cook Inlet Agriculture + CO-OO.

I worked on my AKES Newsletter article.

I did some work in the collection labeling specimens.

KUMP:Ento:10814 is a ♀ delphacid.

9. March 2017

- ✓ Jacquelyne article
- AKES Newsletter article
- Refuge Notebook
- Lab safety plan
- Lab SDS
- June hood

I worked on Jacquelyne Schardis AKES Newsletter article.

I attended the Safety Committee meeting this morning.

10. March 2017

- ✓ specimen willow to Dominique
- Refuge Notebook
- Tidd's Syngaster specimen
- Call Dominique
- Ask Megan about Lethobidromorph
- Home

I packaged a willow specimen to go out to Dominique

I worked on my AKES Newsletter article.

I posted this week's Refuge

Keying a lygaeid collected by Tidd yesterday using Hoffman (1996), p 51 → Rhyparochromine

I photographed a rhyparochromid that Tidd had collected yesterday.

5/17/2017

- time
- respond to Russians
- ACEES Newsletter
- Avicennia training
- ✓ QD update specimen
- ✓ Field Lygaeidae specimen
- ✓ Orthostern article

I worked on my ACEES article.

I made maps of delta at Spirit Lake as requested by John.

for Thursday

- Marathon combo
- GPS's
- maps
- etc.

4. March. 2017

- ✓ Marathon R.L.
- info from Lynda
- ✓ image suggestion to Ekandilpher
- ✓ injury follow-up

I started preparing for working in Beaver Creek drainage on Thursday, using GIS to produce maps and spreadsheets of ownership data for our use.

I also talked with Lynda about checking in with the oil field operator.

I worked on my LifeScanner article.

15. March. 2017

- respond to Ilya
- ACEES article
- Av. safety training
- ✓ time
- Program for Beaver Creek tomorrow

I worked on my ACEES Newsletter article.

16. March. 2017

John and I started sampling spruce tips in Beaver Creek for stable isotope work.

17. March. 2017

Calibrating stereoscope petiole.

@ 2.0	= 0.7	1 cm = 70 ticks
	6.0	1 cm = 100 ticks
	2.0	1 <sup>cm</sup> = 100 ticks
	3.0	3 cm = 95 ticks

Examining specimen KNUK: Euro: 10324

Chela lengths: 25 ticks @ 3.0 = 0.81 mm

24 ticks @ 3.0 = 0.77 mm

fangs: 6-11 ticks @ 3.0 = 0.19 - 0.35 mm

Palpal femora: 12 x 4, 13 x 4 ticks @ 3.0

0.39 mm      0.42 mm

3 x longer than broad      3.25 x longer than broad



finger: 14 ticks  
hand: 11-12 ticks  
hand + pedicel: 13-14 ticks } @ 200 zoom

Keys to Microbium brunneum in Buddle (2010)  
and to M. brevifemuratum in Christophoryou et al.  
(2011).

I worked in my AKE's Newsletter article.

I did some work labeling specimens in the collection.

I put the pupal exuvium of specimen  
KNUK:Ento: 10775 in LifeScanner vial BOLD-L81.

KNUK:Ento: 10774 is Miridae.

Left leg from specimen KNUK:Ento: 10771 I put  
in lifeScanner vial BOLD-YUQ.

(20 March 2017)

- injury follow-up
- Garden club presentation
- ✓ Lifescanner shipment
- ✓ Refuge Notebook
- Daily article
- Av safety training
- Russians' paperwork

I prepared a loan of  
LifeScanner samples  
(loan KNUK-2017.03-lifescanner-Ento)

I formatted and posted  
Friday's Refuge Notebook  
article.

I started on my Garden Club presentation.

Examining some worm specimens that I found  
in my field vest from Skilak Lake, 2 Sept 2017.  
These are quite pale. (litellum on 29-33)

Keying using Reynolds (1977), p. 32 1 → 2 → 6 → 7 →  
8 → 11 → 12 → 15 → 16 →

These look like white Dendrobacina octaedra.  
I am just not sure about this one.

(29. March. 2017)

- Time
- Volunteer hours
- Bio News
- Refuge Notebooks
- injury documentation

I worked on catch-up in the office today.

I worked on following related to new LifeScanner sequence data that I

received today.

Dave Lynch of Asepris Air Control stopped by to inspect / fix the fume hood. He found that the intake blower motor was not working.

(30. March. 2017)

- Bio News
- Refuge Notebook
- fume hood
- clean lab
- AKES Newsletter
- Garden Club talk
- Register for A325 webinar.

I worked on updating Biology News.

I packaged up spore tips collected over the last couple of weeks that had been set out to dry.

Dave Lynch from Asepris came by and serviced and inspected the hood.

I worked on lab clean-up.

(31. March. 2017)

- Refuge Notebooks
- backups
- Garden Club talk

I formatted and posted this week's Refuge Notebook article.

I attended the A325R water distilling refresher.

John asked me to summarize some fluidome concentration data.

(3. Apr. 2017)

- Lab safety plan update
- Garden Club talk
- return library book
- A password
- Todd's LifeScanner specimen

I worked on my Garden Club presentation.

4. April. 2017

- library book
- ✓ Alya et al. invitation letters
- Garden Club talk
- ✓ A password
- start J-drive clean-up.
- injury follow-up
- lab safety plan
- ✓ download RTL NGS data
- ✓ correct Collet Salix ID.

Tallied spruce samples from recent field work: 99

I worked on my Garden Club talk.

5. April. 2017

- library book
- Refuge Notebook
- Garden club talk
- ✓ Russian Rescuer affiliations to Steve

I started looking at 2016 Slikok lots (NGS) which arrived yesterday. It looked good.

I worked on my Garden Club talk.

6. Apr. 2017

- Refuge Notebook
  - Garden Club presentation
- I worked some on my Garden Club talk

I started uploading 2016 Slikok arthropod FASTQ files to Galaxy.

7. April. 2017 I spent much of the day on Galaxy processing arthropod sequence data from the 2016 Slikok project.

10. Apr. 2017

- ✓ doctor appointment
- NGS analysis
- Garden Club talk
- Biology Neurophysiology
- Lab safety plan
- update iPad

- Primers are 25 bp long.

I worked on my Garden Club talk and on the NGS Slikok dataset.

11. Apr. 2017

- ✓ time
- ✓ Garden Club talk!

I worked on my Garden Club presentation.

12. April. 2017

- ↳ Bio News
- ↳ Lab safety plan
- Refuge Notebook
- AKES Newsletter
- iped update

I caught up on Biology News.

I worked some on the Slikole NGS analysis.

I updated the lab safety plans.

13. April. 2017

- iped update
- ↳ Refuge Notebooks
- AKES Newsletter

I caught up on formatting Refuge Notebook articles, but the CMS is down now, so I will post them later.

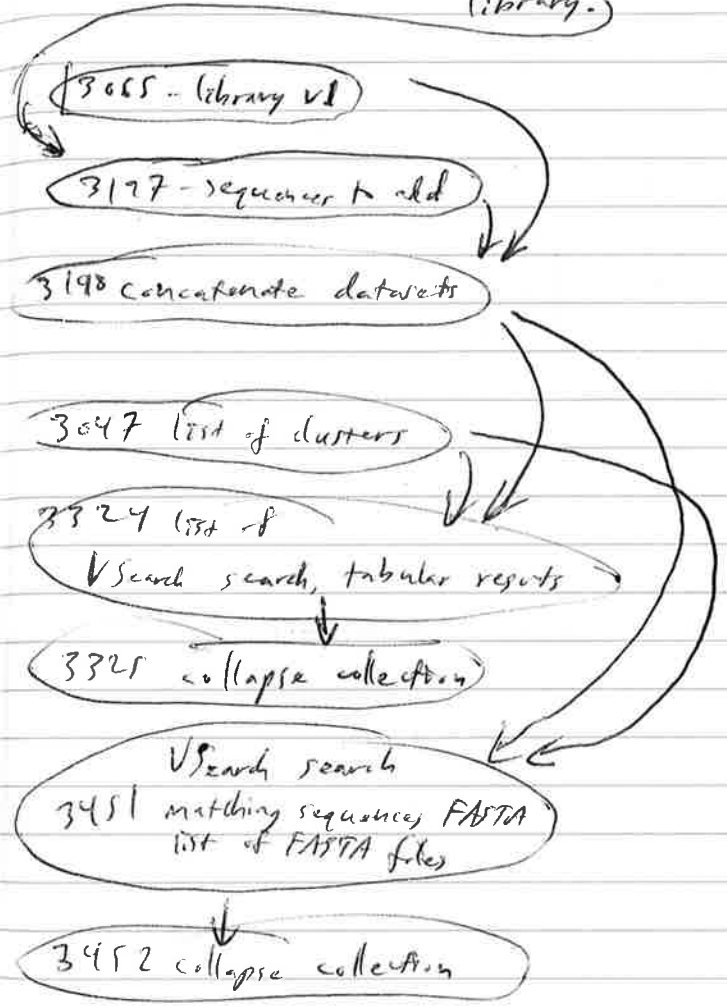
I did work on the Slikole NGS arthropod data.

I resumed work on the AKES Newsletter.

14. April. 2017

- AKES Newsletter
- contact Arjun / decide on proposals

I resumed work on the Slikole NGS work, downloading and compiling sequences to add to the library.



I worked on relating NGS occurrences back to collecting events on Arctos.

(8. April 2017) - Taking pesticide applicator class today.

(19-20. April 2017) - Pesticide applicator training

- (21. April 2017)
- AKES News letter
- + Refuge Notebook
- + M. Boud LCC reply
- + Kech Linux
- + inventory spruce samples

I posted this week's Refuge Notebook article.

I helped Cech with the send table.

I inventoried the Beaver Creek spruce tip samples, entered data, and packaged them up for John to take to Anchorage.

(29. Apr. 2017)

I took my pesticide applicator tests today, taking up most of the day. I also had to try to deal with OWCP to get a surgery on my finger approved. It was denied this morning. It had been scheduled for tomorrow.

(5. Apr. 2017)

- ✓ cell claims examiner
- AKES Newsletter
- blood born pathogens talk
- time

I worked on formatting Derek's article for the AKES Newsletter, getting a draft done.

(26. Apr. 2017)

I worked on my Blood-borne pathogens talk for today.

I attended the staff safety meeting for most of the day.

I worked some on revising Derek's AKES Newsletter article.

27 Apr. 2017

- ✓ medical follow-up
- AKES Newsletter
- ✓ Bio News
- Refuge Notebook

I finished revising Peter's article for the AKES Newsletter.

I posted Biology News items to the website.

I worked on my AKES Newsletter article.

28 Apr. 2017

- ✓ Tarnovia record
- A-104
- A-200
- NGS work?
- update BOLD records?
- ✓ Refuge Notebook

I entered the Tarnovia record from Kjærandsen (2006) into ArcGIS.

I posted today's Refuge Notebook article.

I accompanied Mark, Todd, and Don down to Headquarters Lake, where we test flew the new drone.

1 May 2017

- ✓ AKES Newsletter
- ✓ Sports Lake older survey prep.
- ✓ time
- ✓ return library book
- ✓ copy files needed for Slikk NGS work

I produced an eldoo survey map for Sports Lake, uploaded way points to GPS.

I posted the AKES Newsletter issue!

8 May 2017

I'm back! Half day today after doctor appointments this morning.

I did some catching up on e-mails, etc.

9 May 2017

I worked on Slikk NGS data.

10 May 2017

- time

I worked on Slikk NGS data.

(11. May. 2017)

- Bio News
- Refuge Notebooks
- Lab clean up
- Check NMR list
- Russian visit correspondence
- K16 reschedule!

I worked on Slikok NGS data until server access went down.

(12. May. 2017)

- Lab SDS/clean-up
- Refuge notebooks

Scrutinizing maps and data I made yesterday from Slikok. I now see that I mixed things

up somewhere. The IDs do not match the sites. I will start by looking at Cixius in the KNUK:Ent:10986

↓  
347 Per 194 d 193

Found the problem. It is with associating Galaxy 2006:2790 with QUIDs.

I worked on a map of Sports Lake eloden that John requested.

(15. May. 2017)

- website literature citations
- SDS in lab
- Slikok NGS
- Refuge Notebook

I worked on Slikok NGS data.

I took a walk down to the outlet of Headquarters Lake.

A violet I collected there I took back to the lab. It is Viola epipsila.

(16. May. 2017)

I worked on Slikok NGS data.

(17. May. 2017)

- SDS in lab
- clean up
- Refuge Notebook
- workbooks comp stuff
- ✓ order uniform

I need to do some catch-up / clean-up today.

I summarized Slikok invent data up to this point.

I worked on adding SDS and data to our chemicals inventory / SDS book, mostly for buffers, etc. that Mark brought into the lab.

18 May 2017

- lab clean-up
- lab SDS book
- write Arjun

I did work on lab clean-ups  
 I started collecting info for a Refuge Notebook article next week.

19 May 2017

Refuge Notebook

I worked on my Refuge Notebook article and on my presentation on dangerous plants for next week.

22 May 2017

- Refuge Notebook article

I worked on my Refuge Notebook article.

A Ethel

I gave two safety talks for annual safety training.

I collected a minute hex-pod (Cillembola) from a leaf of *Pinguicula villosa* at Headquarters Lake → BOLD-PMS.

27 May 2017

I spent the day at Peer Safety Training.

29 May 2017

I worked on my Refuge Notebook article.

25 May 2017

I posted Refuge Notebook articles.

This morning at home I had spent two hours catching up on formatting Refuge Notebook articles.

d.l.o

- data help for Derek
- + Refuge Notebook catch-up
- find *Pinguicula vulgaris*?
- D pad

I worked on Slickok arthropod NGS data.

20 May 2017

I made updates to the website material

I worked on Slickok NGS data.



30. May. 2017  
A pond

I worked on lab clean-up and updating our SDS documentation.

We had a Liro staff meeting at 11:00. I was asked to add NGS and entomological info to our website.

31. May. 2017  
Print SDS book  
Refuge Notebook

I finished the lab SDS documentation and chemicals inventory.

I formatted this week's Refuge Notebook article.

I worked on Slikok NGS data, finishing the vetting of IDs!

1. June. 2017

Cate and I walked out to Slikok project site SK16 to look at ~~at~~ a Vila that I could not identify last year because it lacked flowers. We found one flower. It was V. epipsike.

2. June. 2017

Carabid ID  
Plan Gull Rock trip  
- Slikok occupancy  
Refuge Notebook

Keying carabid  
KMR: Ento: 11210 using  
Lindark (1969), p. XXXVIII  
Using key, p. XXXIX

1 → 26 → 30 → 39 → 44 → 46 → 47 → 48 →  
50 → 51 → 52 → 53 → 60 → 61 → 62 →

Blethrin, p. 104 p. 105 1 → 2 → B. quadrivittatus

I started setting up software for occupancy modeling.

I started formatting an MDPT Insects journal article for the Slikok arthropod dataset.

5-June 2017

- Prepare fluridone shipment for tomorrow.
- Slikok occupancy beginning
- Contact Judi Bartlett

I worked on trying to get Bayesian occupancy models running using OpenBUGS and JAGS.

I prepared to ship fluridone samples tomorrow.

6-June 2017

- fluridone samples shipped
- travel approval forms
- RD meeting @ 1pm
- Slikok veg data
- bottle specimens from 3 June
- Prep for Gull Rock trip.

I met John, Cade, and Kyrin at Sports Lake, picked up fluridone samples from them, and took them to FedEx Keweenaw to be shipped out to the SRTC lab.

I worked on processing 2016 Slikok veg data.

I attended the regional awards meeting on the aft

7-June 2017

- Prep for Gull Rock trip
- Slikok veg
- Resolve Botrychium spp. issue

I identified a mustard collected and observed on Friday as

Arabis halboellii. I also found specimens of this species in the herbarium, identified them, and entered data into Arctos (KNUH: Herb: 10505 and KNUK: Herb: 10506).

I had start getting ready for field work tomorrow.

8-June 2017

Gull Rock trip

9-June 2017 I pressed plants from yesterday, put the truck away, etc.

10 June 2017 A Taraxacum collected from NAPA Soldotna on 10 June 2017 is T. ceratophorum.

I stopped by Soldotna Creek Park and walked around more trying to delineate this population of T. ceratophorum.

11 June 2017

I worked on getting Naturalist observations from Gull Rock.

12 June 2017

- Gull Rock specimens
- LifeScanner shipment prep.

- aquatic sampling?
- Slikk occupancy/follow-up?
- Refuge Notebook

I worked on adding some Gull Rock records to our checklist.

I had collected a small flower bud from Sambucus racemosa on the Fuller Lakes Trail on Saturday. Upon opening it, I found what looks like a

cecidiomyid larva. I put this in a Lifescanner vial. → BOLD-9R7

I worked on preparing a shipment of LifeScanner vial specimens.

I posted more Gull Rock observations to Inaturalist at the end of the day.

14 June 2017

- ↳ Ship LifeScanner specimens
- prepare to look for Pollenia tomorrow

- Refuge Notebook?

- Gull Rock specimens

- yesterday's specimens

↳ respond to Elysa

- backups

- Collect Sambucus flowers

cecidiomyids

- check floatplane access

road plant for Kyra

I packaged LifeScanner specimens to go out and made a corresponding Arctic loan.

I processed specimens from yesterday.

Processing sample 2017MCB015 from Gull Rock. These are amphipods from among Eucus on rocks.

It seems to fit with the description and some characters (eye shape, spines posterodorsally) ~~with~~ of Spinulogammarus subcarinatus in O'Clair and O'Clair (1998). These look like Gammaridra sp. BOLD:ABY1774. Maybe Eogammarus.

I prepared for the Homer trip tomorrow.

(15. June 2017)

I drove with the family down to Homer, where we collected many earthworms in search of Pollenia vagabunda.

(16. June 2017) I put away specimens from yesterday. I met with Jen Lewis, D. H., and Tracy regarding recognizing Sitka, white, and Lutz spruce.

Now examining a container of worms from yesterday (2017MCB021). The most abundant form in this sample looks like Lumbricus rubellus. Clitellum .. (26) 27-32 → It is L. rubellus. A smaller worm had clitellum .. 29-33 → D. octaedra. In a quick look through these worms I found no obvious parasitism.

(19. June 2017) Examining snail specimen 2017MCB014 from Gull Rock. This appears to be Littorina sitkana. The shells are 5-7mm long, about as wide as long, very weakly ridged, variably banded.

I requested that a (K)NWR:Inv collection be set up for specimens such as this Littorina.

-Need to do 2017 CT training |

Processing sample 2017MCB017 from Gull Rock

Petridibius arcticus, adult ♀ → UAM100185807

Petridibius arcticus, immature → BOLD-BR5

amphipods : These are different than those collected among Fucus (2017MCB015). The eyes on these are round where the eyes on the amphipods from Fucus were more elongate. I removed several left legs from one of these for COI sequencing → BOLD-YJ7. The rest → UAM100185806

Elatridae

Carabidae

Heteroptera

Aegialites

→ A mangled beetle, probably Beetlidae. Left legs put into LifeScanner via BOLD-9M6.

→ Left legs from one → BOLD-NB4

Now examining worm specimens from sample 2017 MCB020.

A pale worm from this sample. <sup>apilobis</sup> ~~Tanytobic~~, ctenellus on 27-34? Setae closely paired.

Reynolds (1977) p. 32 1→2→6→7→8→11→12→15→17→18→19→ (*Aporrectidea* sp.)

On one of these I found a little tag on the ctenellus which may or may not be a parasite → POLD-L97. I removed a portion of the posterior end of this worm (POLD-500).

21. June 2017  
Computer training

✓ nematode from yesterday  
✓ install survey 123 on ipod for tomorrow

- STDP grant NGS arrangements.  
Home

I took the 2017 FISSA training.

Examining aquatic arthropod sample from Johnson Creek.

Ephemeroptera   
Plecoptera   
Simuliidae → POLD-MC2  
Trichoptera

22. June 2017

I spent most of the day with the rest of our bio staff in training for field work for the upcoming vegetation classification.

23. June 2017 Arcator is down today!

I left early to fish after accompanying Mark down to the wetland to help with a drone flight.

26. June 2017 I shipped out Life Science specimens.

I grabbed leaves from ~~road~~ birch right by the headquarters building lanes. It has leaves - Learn birches 6.5-10cm long

Keying in FNA (1997) 1→260 (skipping) 6→

Leaf tips acuminate, very sparsely haired on veins underneath.

27 June 2017

I packaged water fluoride samples from Sports Lake and drove them to FedEx Keno this morning.

prepare for collecting tomorrow.

Examining a specimen of shrubby Betula collected today from Slikk project site M605. Leaves are oval, 2.6 - 5.6 cm long, doubly serrate.

Keying using Vireck and Little (1972) A...

This is called a Betula hybrid in this book.

Keying using Welsh (1974), p. 53 1 → 2 →

(10-20 teeth per side) → 3 → Betula occidentalis

Keying using Hulthen (1968), p. 364

Does not key cleanly.

I get ready for collecting with Ilya Vikhrev tomorrow.

28 June 2017

I spent the day with Ilya Vikhrev and Olga Aleksova

29

140

29 June 2017

✓ Privacy training  
- Refuge Notebook  
- Deal with specimens from yesterday

I completed the 2017 Privacy Awareness Training, CUI Awareness Training, and Records Management Training.

I started work on producing a new version of the Keno NWR checklist.

30 June 2017

- Refuge Notebook  
- Keno NWR checklist

I worked on producing a new version of the Keno NWR checklist.

I did finish an updated version of the checklist.

I took a short walk down to Headquarters Lake in the afternoon.

3. July 2017

- Refuge Notebook  
 - Cook's wedding leave request  
 - (Asteraceae) from Kaniol airport this morning using Welch (1974), p. 107  
 1 → 2 → Key II, p. 107 1 → 2 → 3 → 4 → 5 → Erigeron?  
 p. 141 1 → 2 → 3 → 4 → 6 → 7 → !

I did some check listing work, adding a couple of species and photos.

I worked on updating Refuge Notebook.

5. July 2017

I worked on preparing the board and application equipment for Sports Lake tomorrow  
 - Br. News  
 - Refuge Notebook  
 - Azore  
 I pinned some recently collected Don Watts' beetle specimens and entered data for these.

6. July 2017

I worked on entering aquatic plant data from Pfau's web system (2005) into the Kaniol NWR checklist.

John, Tracy, and I applied fluoridation at Sports Lake today.

A tick brought to me today I believe is a Dermacentor based on the key of Pratt (1961). It looks like Dermacentor variabilis.

11. July 2017

- Write Refuge Notebook  
 - Refuge Notebook catch-up  
 - Skyline trip?

I drove out to mile 73 Sterling Highway on an injured eagle call. It was a dead raven.

I left after lunch for a family hike up the Skyline Trail.

12. July 2017

Examining a legume collected off of the Skyline Trail having yellow flowers, perhaps Astragalus umbellatus. If it is Astragalus, it does key to A. umbellatus in Hultin (1988), p. 46. There were no pods available. Keying using Welch (1974), p. 260 1 → 2 → 3 → A. umbellatus.

To do

- USFS/RTL arrangements
- Refuge Notebook, write article for next week
- Refuge Notebook catch-up
- specimens/observations from Skyline

I spent some time dissecting eriophyid mites from galls of leaves of Salix which I had collected yesterday.



- Set up survey 123/collection

(13 July 2017)

- Refuge Notebook article  
✓ set up survey 123/collection  
- print key

I drove to FedEx Kwik this morning to drop off a package for Dom.

I walked down to Headquarters Lake for a bit in the afternoon.

I keyed an Epilobium I collected at Headquarters Lake to E. fulvum using Hulthen (1988), p. 685

I started on my Refuge Notebook article for next week.

Surprised to see a larger than expected barcode gap between Petrochromis specimens collected at Gull Rock, for which I just obtained a COI sequence, and the Mystery Hills, I am now pulling a specimen from KMR-Eur: 7292, from Skilak Lake, for COI sequencing.

(14 July 2017)

I extracted a larva from a leaf gell, a pouch like gell on leaf of Salix scouleriana from Kerry Nelson's house collected yesterday → BOLD-0K9

I prepared a loan of LifeScanner specimens and shipped these out.

Examining earthworm specimens from Tracy Melvin collected at Mystery Creek Enclosure (Should be KMR:Inv:1). These all look like immature Dendrobaena octaedra. One was almost mature, so we could identify it with confidence.

Examining worms from Funny River enclosure. This looks like two immature D. octaedra, but both are immature. The smaller individual we will submit for sequencing via LifeScanner (vial BOLD-UX9)



(17 July 2017)

- Archaeognatha loan request
- weekend Lifescanner specimens
- late entry
- Refuge Notebook article

I spent the afternoon at the range qualifying to carry a shotgun, then cleaning guns.

(18 July 2017)

- Refuge Notebook article

Examining specimen KNUK:Enti: 2848. It has dark gray-brown halteres and dark hair on the body, making it likely to be S. atropes.

Keying KNUK:Enti: 2848 using Aldrich (1915), p. 118 1 → 5 → 6 → 7 → 10 → atropes ♀

Same, keying using Turner (1971), p. 856 1 → 2 → 4 → 8 → 12 → atropes group → in AK, only S. atropes

KNUK:Enti: 269 is also ♀ S. atropes.

A mangled specimen with barcode label K.1112 is a ♀ and appears to be the same.

Pom's specimen from July 13, 2017 is a ♀ of the same. Ft is the darkest, with halteres quite black. The others had brown halteres.

I took Kyra, Mary, and Emily on a walk to show them more of our common local plants.

I spent much of the day on a Refuge Notebook article.

(19 July 2017)

- time
  - Refuge Notebook article
  - bat specimen
  - Centennial trail veg plot
- I worked on my Refuge Notebook article.

Examining little brown bat with specimen label AF81506, collected at the ~~Vittor Center~~ in the headquarters vicinity today, looking for external parasites. I found none.

I went on a walk on the Centennial Trail in the afternoon to collect data for one of the Kenii veg class plots.

In galls of Salix barclayi leaves that I collected near the Keen Eye Trail I found arisomatid mites and what looked like cecidomyiid larvae. All galls contained mites; some contained a single fly larva. My impression is that the fly larvae are predators or other associates of the mites.

(20. July. 2017)

- Refuge Notebook catch-up
- Copy excerpts from Ashburner & McAllister (2013)
- Synphoromya specimens

I scanned excerpts from Ashburner and McAllister (2013).

I processed some specimens collected recently.

Using office tape, I extracted a Demodex mite from between my eyebrows. It is about 27 ticks long at 10x

(21. July. 2017)

- Refuge Notebook catch-up
- ✓ Δ password

I worked some on posting Refuge Notebook.

I accompanied Tidd out to Skilak Lake Loop Rd. to check on tree seedlings, look for some things at Lower Skilak, and take care of a couple of veg plots.

(24. July. 2017)

- Prep for tomorrow
- Refuge Notebook
- specimens from last week

I worked in preparing equipment for field work tomorrow.

I scrutinized birches. Betula nealaskana seeds from birches around the headquarters building have nutlets about as wide as the wings, more like Betula papyrifera.

(25. July. 2017) 07:00 - 18:00

I spent the day on Tustumena Lake with Tidd, Kyra, ~~Case~~ Cole, Mary, and Emily, working on veg class plots.

(26. July. 2017) I spent the day on Tustumena Lake with Tidd, Kyra, Emily, Mary, and Cole

on veg class plots.

(27. July, 2017)

- respond to McAllister
- specimens from yesterday
- Refuge Notebooks

I worked on cleaning,  
putting away specimens,  
etc.

Now I am examining galls on Salix pulchra  
leaves collected yesterday at plot 1974.

↳ BOLD-450: Diptera larva from gall

BOLD-WYS: eriophyid mites

↳ leaves in vial → KNUK; Ento: 11245.

A willow I grabbed quickly yesterday at the  
beach where we picked up Cole and Mary at  
the end of the day is Salix selenifera. It has  
styles about 1.3 mm long with no waxy coating.

This was near veg site 135

I am re-examining specimen [KNUK; Ento: 8946],  
a Petridiobius from the Mystery Hills. It is a  
very hairy Petridiobius with an apical ~~antero~~ antero-  
lateral flange and an apical ventral tooth on the  
mesotrochanters. The meso femora, tibiae, and tarsi of  
the mid leg have very long hairs anterior anterior  
hairs. The maxillary palps have long hairs ventrally.  
I photographed this specimen. This is an adult ♂.

(28. July, 2017)  
respond to McAllister

I spent the day on Skilak Lake with Todd, Mary,  
Emily, and Cole visiting veg class plots.

(31. July, 2017) Emily Thomas and I surveyed  
veg. plots off of the Sterling Highway.

(1. August, 2017) Todd, Emily, Mary, Cole, and  
I surveyed veg plots on the south shore of  
Tustumena Lake.

(2. August, 2017) I prepared a shipment of  
Lifescanner vials to go out. 07:00-17:00

I spent the day off of Mystery Creek Rd  
working on veg plots with Emily.

(3. August, 2017) Mary and I worked on veg plots  
-time off of Mystery Creek Rd. 0800-17:00

4. August 2017

Examining galls of leaves of birch collected at plot 998 on 2-August-2017

↳ BOLD-811 - fly larvae

I failed to find any eriophyid mites in these drying samples, but I expect that they were present.

I spent the day out on Tustumena Lake with Todd, Cade, Mary, Emily, and Emma Roach from OMB.

7. August 2017 Cade and I hiked Skyline, where we surveyed six veg plots and collected bristletails.

8. August 2017 I worked on Biology News catch-up on our website.

- ↳ Bio News
- Refuge Notebook
- correct survey 123 surveys
- Return Betula books
- Deal with recent photos

Done from the MRC brought over plants for me to identify.

A coastal grass I did not know: numbers 1.1-1.3 in long. It is Puccinellia nutkaensis.

I pulled an immature bristle tail from vial with barcode label UAM100185827, Petrilobius collected by Dominique Collet in 2006 ~~by~~ at Eagle Lake, Eagle River, putting this into LifeScanner and BOLD-SRO.

I prepared a loan of LifeScanner vials to go out.

I worked some on putting Refuge Notebook articles.

9. August 2017

- ↳ return library book
- birches follow-up
- ↳ LifeScanner data updates

I photographed seeds and catkin scales from Betula kennaica plant I collected yesterday on K Berch.

I worked on updating LifeScanner records.

Cade went through worm sample 2017 MCB020 looking for Pollenia but found none. He also sorted through sample 2017 MCB021.

10. August 2017

- Refuge Notebook  
- bristle-tail specimens

I worked on Refuge Notebook  
all morning, catching up.

Examining a bristle-tail from Chained Island, barcode label UAM100658074. This is an adult ♂, apparently somewhat roughly handled or it is missing some legs. It is more like Sturm's (2001) description of Petroliobius canadensis. It lacks the small, light, round, white spots as described for P. arcticus by Sturm & Bousier (2004). Chaetotaxy of maxillary palp is like that illustrated for P. canadensis (not illustrated for P. arcticus). Parameres with 7 divisions beyond the basal division as in illustration of P. arcticus (P. canadensis appears to have 6). Lateral ocelli are widest laterally as in Sturm's ~~from~~ (2001) illustration of P. canadensis and Folsom's (1902) illustration of Machilis arctica. Sensory field on leg femur I is long, covering 2/3 the length of the femur as in P. canadensis. I dissected off leg I and examined it under the compound scope. I examined the sensory field. Fringed structures are roundish and variable in size, 6-21 ticks across at 40x (400x).

calibrating micrometer:

at 4x (40x), 1mm = 428 ticks  
at 10x (100x), 1mm = 160 ticks  
at 40x (400x), 0.25mm = 100 ticks

That makes the fringed structures 0.015 - 0.0525mm across or 15 - 53µm across

11. August 2017

Port Refuge Notebook

I updated my Refuge Notebook article on Radiis auricularis

from earlier this year, not changing it except to add a text box explaining a change in our understanding of its provenance.

Looking at bristle-tails in BOLD: BIN

BOLD: ADE 3539 looks like Machilinus,

SIOCAL91-10 does ~~not~~ look like Machilinus, but it is hard to tell on other photos of specimens in this BIN.

Examining specimen (KNUK:Ento: 8746) from the Mystery Hills. I dissected off left leg I to examine it under the compound microscope. It has similar fringed structures on the sensory field, but these are smaller at about 7-11 ticks across at 40x. One at the distal end of the field was 14 ticks across. Leg segment lengths at 40x:  
 Coxa: 50 ticks. trochanter: 36 or so ticks (bubble partially obscures one end on this side. femur: 52 ticks. tibia: 45 ticks. Tarsus: 50 ticks. femur width: 22 ticks. It is very hard to tell whether there are 6 or 7 articles on the one paramere I can see.

The labial palpi appear to differ somewhat between KNUK:Ento: 8746 and UAM:Ento: 251350. I photographed labial palpi of UAM:Ento: 251350 (frames 6070 - 6087).

Examining (KNUK:Ento: 8507) from Chowiet Island. This contains three individuals, all ♂. The sensory field area of femur I bulges out laterally.

I think femur I in ♂'s of the Chowiet specimens are wider laterally than the Mystery Hills specimen. Also, on femur II the interdistal

hairs, at least some of them, are longer than the lateral width of femur II; on the Chowiet specimens these hairs are shorter than the lateral width of femur II.

It is possible that the differences in COI between the Mystery Hills and Gull Rock specimens could be due to nuclear mitochondrial pseudogenes. I checked and different primer sets had been used: LCD1490\_H / HCO2198\_H for the Mystery Hills specimens and C\_VFILFeI / C\_VRILRtI for the Skilat and Gull Rock specimens.

I attempted to identify a fungus on Vaccinium vitis-idaea from a photo, leading to Exobasidium juelianum.

(14 August 2017)

E  
 +6 - NGS SWack paper | I started on  
 + - Canada bursellatits chapters | Archaeogenetics of  
 I - updated checklist? | Canada article

b  
 C I went on a walk in the middle of the day.

a  
 O I extracted eriophyid mites from leaf galls of  
*Sorbus scopulina* → BOLD-FKS.

+  
 - (15 August? 2017) I worked on Canadian  
 bursellatit CoI data for the Bista of Canada  
 s manuscript.

Looking at plant specimens. A legume collected  
 off of Mystery Creek Rd. at Picnic Lake on  
 2. August 2017 looks like *Aspenagus alpinus*.

Now I am looking at a *Calamagrostis* from  
 the same site. Keying using Steiner et al. (2012),  
 p 89 1 → 4 → 5 → 7 → ~~glumes~~ 2.5-3.5 mm long  
 spikelets

Glume length > 3x width. Lemma much more  
 stout than callus hairs → 8 Callus hairs 0.7-2mm  
 long (*Calamagrostis* sp. anyway).

I pinned up some insects that had been in the  
 freezer.

(16 August 2017)

time

Examining psyllids (KNUWR:Ents:112481)  
 This contains 3 ♀ and 3 ♂ I removed  
 genitalia from one ♂ and put this in KOLT to  
 clear.

Colin and I drove out Finger Lake  
 Rd. to see the osprey farms that Kyrn  
 had spotted out there.



(17. August 2012)

- Refuge Notebook
- Aphalam specimens
- survey 123 corrections.
- checklist update?
- scorpionid flies

I removed genitalia of  
 ♂ from KWHK:Ent:11248  
 from KOTH and examined it.  
 I photographed this.

Female genitalia does not at all match A. varnitchanensis.  
 Male genitalia is most similar to illustrations of  
A. calthae, A. nigra, or A. simula

The photographed ♂ I put into a separate vial  
 (UAM100185831).

I also pulled a ♀ to put into a separate vial  
 (UAM100185830). I photographed its genitalia,  
 dissected this off, and placed it in KOTH to  
 examine tomorrow.

Examining (UAM:Ento:287364) from Valdez.  
 This contains one ♀ Petridobius and 4 immatures.

Examining (UAM:Ento:217081) from Seward.  
 This contained one ♀ and one immature.  
 Between the coxae of the ♀ are two parasites,  
 maybe mites. Both are on the bristletail's right  
 side: one between coxae I and II and one  
 between coxae II and III. I photographed these

in situ. I removed one. It came off quite  
 easily. I photographed this. It appears to be a  
 mite.

Examining (UAM:Ento:285127) from Prince of  
 Wales Island. This contained three immature  
Pedotus submutans.

Examining (UAM:Ento:238935) from Kodiak  
 This contained ♂, ♀, and immature Petridobius.  
 I did not count them.

Examining (UAM:Ento:287374) from Prince of  
 Wales Island. This contains ♂ and ♀  
Petridobius.

Examining (UAM:Ento:287370) from Prince of Wales  
 Island. This contained one ♀ and 7 immatures.

Examining (UAM:Ento:217090) from Seward. This  
 contains 7 immature Petridobius.

Examining (UAM:Ento:238806) from Sitka. This  
 contains an adult ♂ and two smaller individuals, all  
Petridobius. One of these is immature and one is ♀,  
 maybe subadult. The ♂ is very large. The



The apical anterior flange on trochanter II is very thick and rounded, meso: this is the ♂ from the Mystery Hills. The fringed structures (pale, round spots as seen through the stereoscope) appear to be in two rows for much of their length. No, they are out in rows on the other leg I, but the sensory field is narrow.

Examining (KNWR:Ents:8807) from Chowiet Island. These have a thinner, less robust anterior flange on trochanter II.

Reexamining (UAM:Ents:238806) The flanges are definitely more stout. They are also somewhat recurved (not at all recurved in the Chowiet specimens).

Examined ~~UAM~~ (UAM:Ents:238325), also from Sitka. It has more typical trochanter flanges like Chowiet and Kona Peninsula Petridobius. I am confused. Is this a variable character or am I seeing multiple species at Sitka?

Examining specimen with label UAM100110914 from Ketchikan. It is very similar to UAM:Ents:238806 from Sitka. It also has very stout flanges, but not quite recurved. It also has an indented, pale, antero-dorsal area on coxae II like UAM:Ents:238806.

(18. August. 2017)

I looked through the live worms that Ethan and Apphia had collected at the Houser equestrian park yesterday. There were Agaricoides and Cumbicus rubellus. All were alive, but none seemed to have any ~~worm~~ maggots in them. They all looked healthy.

Examining (UAM:Ents:148883) from Atka Island. This vial contains one adult ♂ and 5 immatures. This specimen has the trochanter flange of leg II stout and recurved as in (UAM:Ents:238806).

I removed left leg I. Fringed structures of sensory field 4-11 ticks across at 400x.

The sensory field is quite broad, about 2/3 length of femur. Sensory field width is about 21 ticks broad at widest point (40x); femur width is 30 ticks at 40x. Femur length: 90 ticks. This is a much bigger animal than the Mystery (Hik) bristle ticks (KNWR:Ents:8946), but it is perhaps more mature. The whole animal is long, about 14mm long.

I am at a loss with Petridobius right now, as I have been before. I have found no solid characters separating Alaskan Petridobius. They may all be one.

I examined and photographed the genitalia of psyllid specimen (KUR:Ents: 112511)

I posted this week's Refuge Notebook article.

Reexamining (UAM:Ents: 238806) pulled left front leg. Fringed structures on sensory field 4-17 ticks across at 400x. This has maxillary palpi that are more bluntly pointed than specimens from the Mystery Hills and Eagle River, but this could be a maturity issue. The alpine specimens are from June and are smaller; the Sitka, Chocoma, and Atka specimens I have been looking at were larger and were collected in August.

(22 August 2017)

A double-lobed Tibia left on my desk is Taraxacum officinale. Another is Cirsium arvense. Both were from the North Slope.

I worked on the Proto of Canada Archaegrapha chapter.

(23 August 2017)

Examining a vial with label

CH2-1  
Oct 7/95  
Machilidae

~~This contains one Mesomachilis ♀~~

This contains three Mesomachilis: 2 ♀, 1 ♂. The ♂ has mid coxal styli paddle shaped → Mesomachilis sp. A

temporary DUC ID: (RBCM:Ents: L02010.6.001)

I sent off Don's Refuge Notebook article to the Clarion.

Examining vial with label data

CH2-5  
Sept 22/97  
Machilidae

contents

Mesomachilis ♀ 1:  
Machilinus ♂:  
Mesomachilis sp. A ♂ ::

RBCM:Ents: ~~L0201~~  
L0210.6.002

One Mesomachilis ♂, in addition to having stylated paddle-shaped, had <sup>stylated</sup> paddle III somewhat paddle-shaped.

Examining vial with label data

WCS-4  
Oct 26/96  
Machilidae

This contains a single Mesomachilis ♀.

↳ RBCM:Ento:LO2010.6.004

Examining vial with label data

ERI-3  
Sept 20/96  
Machilidae

contents:

Mesomachilis sp. A ♂  
Machilidae

↳ RBCM:Ento:LO2010.6.005

↳ RBCM:Ento:LO2010.6.006

Examining a vial with label data

T2-5  
Sept 7/94  
Machilidae

contents:

Pedentus calcaratus ♀ !:

Pedentus calcaratus imm. ☒☒

Pedentus calcaratus ♂ !:

The Pedentus calcaratus ♂ is a lot like Pedentus submutans, with maxillary palpi not very dimorphic compared to ♀, no obvious sensory field on femur I. The lateral ocelli are more sole-shaped than Silvestri's (1911) illustrations.

↳ RBCM:Ento:LO2010.6.007

Examining vial with ~~contents~~ label

WC2-1  
Oct 26/96  
Machilidae

contents:

Mesomachilis ♀ °

Machilinus ♀ °°

? I took a few photos of a Machilinus just to document the dorsal scale pattern, which was pretty well preserved in one of these.

Examining contents of vial with label data

CH1-1  
Sept 8/95  
Machilidae

contents:

Mesomachilis ♀ °° RBCM:Ento: LO2010.6.010

Machilinus II RBCM:Ento: LO2010.6.011

I prepared a shipment of specimens to be returned to RBCM.

24. August. 2017/1

Examining contents of vial with label data

ERS-5  
Sept 20/96  
Machilidae

contents

Mesomachilis ♀ !: : → RBCM-Ento-LO2010.6.012

Machilinus → RBCM-Ento-LO2010.6.013

Mesomachilis sp. A ♂ °

to do

✓ Refuge Notebook

- iNat posts

✓ Archaeognatha chapter

I formatted and uploaded this week's Refuge Notebook article.

I worked in my Brit of Canada chapter, getting a draft submitted by the end of the day.

Examining vial with barcode UAM00185781 (KMWK:Ento:4). This contains two immature worms that look like Pendrobacna setaedra.

Examining (KNUK:Inv:10)

These were all immatures. I am not sure that all of these are D. octaedra, but some of them look like this species. I pulled tissue from the posterior end of one for COI sequencing (BOLD-9R6).

(25. August 2017) I posted this week's Post Refuge Notebook | Refuge Notebook article. - Tracy's worms

Examining (KNUK:Inv:5). This vial contains two immature worms, both of which look like Dendrobaena octaedra.

Examining (KNUK:Inv:7) This does contain an adult Dendrobaena octaedra. There is also what looks like Dendrodrilus rubidus, just on the verge of being mature. There is also an enchytraeid.

Dendrobaena octaedra adult → (KNUK:Inv:7)  
immatures ♂  
Dendrodrilus? tissue sample → BOLD-519  
↳ rest →  
enchytraeid → BOLD-147

Examining (KNUK:Inv:8)

Dendrobaena octaedra adult  
immatures ♂  
enchytraeid → BOLD-FV0

Examining (KNUK:Inv:6)

The only adult is Dendrodrilus rubidus. At least some immatures look like D. octaedra.

Dendrodrilus adult → (KNUK:Inv:6)  
Dendrodrilus? imm ♂  
Dendrobaena? imm. → (KNUK:Inv:14)

Examining (KNUK:Inv:9)

Dendrobaena octaedra adult  
D. octaedra? imm. ♂

Examining a vial with label data

K1-2
July 28/97
Machilidae

This is mostly Machilinus.


Scrutinizing Machilinus more

Eye contact line is smaller than M. matadero.


Compound eyes contiguous with ocelli, so also not M. taeseo.

Paired long setae immediately below eyes in some individuals. Missing from most. Present on at least one ♀. These are pretty beat-up, though.

Leaving these as Machilinus varicornis for now.

Mesomachilis ♀ 

Mesomachilis ♂ 

Pedentatus calcareus ♀ 

Pedentatus calcareus ♂ 

Machilinus 

(28. August. 2017)  
✓ submit Survey 123 data

I updated my information on RBCM specimens.

I worked on occupancy modeling of Stikol arthropid data.

Examining a vial with label data

WC3-3
Oct 26/96
Machilidae

This contains two ♀ Mesomachilis.

29. August. 2017

- Prep boat
- muscid floor ID
- email Muir about bristletails

Keying a ♂ muscid from strawberries at my house collected on 27. August. 2017. Using MND, p. 1118

1 → 15 → 18 → 20 → 27 → 28 → 29 → 30 → 44 → 45 → 46 → 47 → Helina.

Keying using Snyder (1949), p. 113 1 → 2 → 5 → 26 → laxifrons

I prepared equipment, etc. for going to Sports Lake tomorrow.

30. August. 2017

Reexamining bristle tail specimen from Oregon, Loell State Park. Redwood Nature Trail near Brookings. I removed right legs II and III and placed these in LifeScanner vial BOLD-FK7.

This might be Pedetentus californicus. The lateral cells are more distinct than in P. yosemite. I can't see the abdominal sterna well. The processus triangulatus is thin and elongate as in Pedetentus californicus.

31. August. 2017

I prepared a shipment of FastEST fluidine samples from yesterday. Kyra took these to FedEx Koaai.

I worked on updating LifeScanner records.

John, Kyra, and I headed out to Stray Lake but we turned back in Koaai because one of us was unwell.

Examining (KNUK:Ento: 8807) from Chawick Island. This contains three ♂s. They have a mid coxal flange that is at about 90°, robust, and rounded.

I photographed one and singled it out for tissue sampling. ~~A left leg~~. I pulled the left midleg and placed this in LifeScanner vial BOLD-TPS1.

Re-examining [KNWR:Ents:11246] from Eagle River.  
These males look similar to the Eagle River males.  
I removed a left leg from one ♂.  
↳ [BOLD-290]      ↳ [KNWR:Ents:11263]

KNWR:Ents:11246 still contains 2♂, 1♀, 1imm.

I prepared a shipment of Life Scanner vials to go out tomorrow.  
[1. Sept. 2017] - Jim, John, and I sampled Stormy Lake

[5. August 2017]

- ↳ Inquire about next weekend's meeting
- ↳ Check on shipments
- ↳ Refuge Notebook
  - floridone data entry
  - Get worms from Janice
  - Start Refuge Notebook on snail
- ↳ prepare for lake work tomorrow.

I labeled vials for Daniels Lake tomorrow.  
I caught up on correspondence.  
I started work for my Refuge Notebook article on Redix.

[6. August 2017]

John, Kyra, and I surveyed Daniels Lake: 50 rate throws, 5 water/floridone samples, and 5 sediment samples.

Back at the office, Kristi, Leah, and I worked on getting supplies ready for the Friday employee get-together on behalf of KREA.

[7. August 2017]

- ↳ package samples
- bring Refuge Notebook article materials.
- bristle-tail collecting info and equipment

John, Kyra, and I surveyed the 50 vag rate sites on Beck Lake as well as collected water and sediment floridone samples.



(13. Sept. 2017)

Refuge Notebook article  
✓ includes survey points  
✓ time

I arrived at 05:30 and  
worked on my Refuge  
Notebook article due  
today, getting it sent to

John at 08:39.

I produced map and GPS coordinates for  
rocks thrown on the two little lakes west of  
Beck Lake.

(14. Sept. 2017)

✓ revise time  
✓ KREX restick  
- Guelph bristlenose  
- harvesting / chaga  
presentation

I received Lifescan  
data today including  
sequences from Chouiet Island  
Petrodiobius and Peletatus  
from Oregon.

The Peletatus from Oregon (KNUK:Ento:11260),  
which I had identified as "Peletatus californicus?"  
had no close matches in BOLD. The closest was  
at 83.53% similarity, a specimen identified as  
Peletatus submontanus.

The Petrodiobius ♂ from Chouiet Island,  
(KNUK:Ento:11262), has a sequence with a  
100% similarity to specimen from Skitok Lake  
and Gull Rock, BIN BOLD:ADH7964.  
This BIN may correspond to Petrodiobius  
arcticus.

I submitted collection data updates to BOLD  
for these two records above.

Examining a specimen with label data

Sample 10BBSIO-0187  
BOLD ID: SIOCA187-10

This specimen is in pieces.  
There are scales on bases of antennae, but none on  
the antennal flagellum → Petrobiineae  
coxal stylites only on leg III.

reversible vesicles:	segment	# vesicles
	1	1+1
	2	2+2
	3	2+2
	4	2+2
	5	2+2
	6	1+1
	7	1+1

This specimen is a ♂. The lateral ocelli are small and round, confined to the genal area on the posterolateral margin of the ~~eyes~~ compound eyes.

Keying this using Mendes (1990), p. 99 1→3→4→7→! This does not fit anything in the key.

It could be immature *Machilinae* where the flagellum can be unscoled, but it looks at least close to mature to me. It is heavily scoled on the legs, scape, pedicel, and terminal filaments. I took some photos of this specimen.

Examining specimen with label data

Sample BIOUG06985-A10  
BOLD ID# CNGIL681-13

*Petrobitinae* (scales on scape and pedicel, but not on antennal flagellum). ♀. 2+2 overstyle vesicles on abdominal segments II-V. This is *Pelotatus*, subgenus *Verhoeffilis*. The coxal styli are quite yellow.

(15. Sept. 2017)

↳ respond to Langer  
- talk for tomorrow  
↳ respond to Ilya  
- Got before 11:15

I started work on my presentation for tomorrow.

I switched to revising handouts on chaga and on edible plants, on which I spent the rest of the day.

(15. Sept. 2017)

↳ post revised plant handout / Bee News  
- Refuge Notebook catch-up

I revised and posted the handouts presented at the Devine Plants for Food & Medicine Conference and made

a post to Biology News.

At 16:00 I was interviewed by Anna Turner.

I spent some time scrutinizing Cs of *Petidiobius* from Chowiet Island, Eagle River, and the Mystery Hills. So far the best differences I have found have been that coxae I of specimens from Chowiet Island have sparse hairs posterodorsally. This same area is much more densely hairy on specimens from Eagle River and the Mystery Hill. Also, the ~~Thorax~~ Eagle River specimens have more long, upward-pointing hairs on the face above the ocellus (median ocellus).

Examining specimen with label data

Sample BIOUG01985-A11  
BOLD ID: CNGJM425-13

This is a small animal, almost certainly immature. The antennae are missing except for one scape, which does have scales on it. It has rod-shaped lateral ocelli that are not very constructed. Coxal styli on legs II and III. 2+2 eversible vesicles on at least abdominal segments II-V. They are hard to make out on segment VI.

There are 2+2 eversible vesicles on segment VI and am pretty sure I think this is *Pedetentus*, subgenus *Pedetentus*. I do not think that I can say much about this immature specimen lacking antennae other than *Machilidae*.

20. Sept. 2017

- ✓ Finish with CB6 Bristletail.
- Deal with Skyline Bristletail from yesterday
- Review chapter abstract
- Take Lifescanner samples from mayfly and lower 48 Bristletail.

The Bristletail I collected from near the trailhead of the Skyline Trail yesterday is an adult ♀.

[KUPR:ENT:11267]

samples from mayfly and lower 48 Bristletail.

I examined the live specimens from the Mystery Hill peak to the west of the Skyline Trail from yesterday. There were no adult males. All were females or immatures.

Earlier this morning I packaged flourstone sediment samples, which Ryan took to FedEx Kenai.

Examining specimen with label data

Sample ~~BIOUG06985-A10~~  
BOLD ID: ~~CNGIL681-13~~

Fedd and I worked in the shop yard getting equipment ready for tomorrow.

Examining specimen with label data

Sample BIOUG08157-D03  
BOLD ID: NGNAL224-13

This ~~animal specimens~~ specimen lacks antennae, but it looks like Machilidae. The face between and below the lateral ocelli is scaled. The lateral ocelli are sickle-shaped and constricted. 2+2 eversible vesicles on abdominal segments III-V. They are hard to see on segments II and VI. 1+1 eversible vesicles on abdominal segments VII and VIII, also 1+1 eversible vesicles on segment I. This is a ♂ with paramera short, the distal ends bristled laterally. Paramera annulated, only a single pair. Even the coxal styli and abdominal styli

are scaled. The face between the median ocellus and lateral ocelli lacks any hairs. It lacks the sense organs on tergite III of Mesomachilis canadensis. The <sup>coxal</sup> styli are normal, acute.

It could be Mesomachilis or Pedetentus. It is a small individual, so it could be immature. I think I must leave it as Machilidae for now. I photographed the head and thorax. The penis looks like that of Mesomachilis. This might be a subadult ♂. It is about 7 mm long.

Examining specimen with label data

Sample BIOUG10718-H06  
BOLD ID NGNAS064-14

This is Machilinae in very poor shape. I think it is an immature ♂, but the genitalia are poorly developed.

21. Sept. 2017

John and I drove two trucks to the pipeline access trail SW of Beck Lake. He pulled a trailer and UTV while I towed a trailer and small boat. After unloading and starting up the trail in the UTV, we quickly found that the trail was too rough to bring the boat trailer. We had to return to put everything away and revise our plans for treating the small lakes west of Beck Lake.

Taking a tissue sample from specimen (KMP:Ents: 81591), *Mesomachete canadensis*. I removed the left mid and hind leg → vial BOLD-6N0

I removed one small individual from series (KMP:Ents: 8119), from Nowata, Oklahoma, and placed this in Lifescanner vial BOLD-7V6.

25. Sept. 2017

- Refug. Notebook
  - report CBG 201
  - check into soil fungi
- NGS

I pulled *Pelidriobius* specimen (AM:Ents: 217538) from Hitchhiker. This specimen has a very hairy face with upward-facing hairs as in mature male from the Mystery Hills and Eagle River. The hind coxae are more or less devoid of hairs postro dorsally. I removed the left leg III and placed it in Lifescanner vial BOLD-UL4.

John asked me to go to Nikiski to ~~test~~ do some field work, as I am leaving so.

26. Sept. 2017

John and I hauled a square-stern canoe into the N/S Lakes west of Beck Lake. We surveyed for clodea, then applied liquid fluxidone.

27. Sept. 2017

- ✓ Clean-up from yesterday
- ✓ vehicle receipts
- Checklist update?
- Lifescanner Pedotenus Verhoeffii?
- Refuge Notebooks
- Look for Prophysaon andersoni?

Examining specimen UAM:Ento:263207 / UAM100114561. This vial contains one ♀ Pedotenus subgen Verhoeffii and 6 immatures. I am comparing this with Silvestri's (1911) description of Petrobius subnitens and CBG specimen BIOUG06985-A10. BIOUG06985-A10 has a longer processus triangularis than UAM:Ento:263207. It also has yellow coxal styli; these are pale on the UAM specimen. UAM:Ento:263207 has a face devoid of setae between lateral and median ocelli. This region is scaled. Processus triangularis about half height of maxillary palpi segment I. I took left

leg III and put this in Lifescanner vial BOLD-JP7. On BIOUG06985-A10 the processus triangularis is darkly pigmented. On BIOUG06985 there are prominent setae on the face medially between the lateral ocelli and compound eyes. Took frames 6349 - 6372 of this CBG specimen. Also frames 6373-6385.

The adult ♀ of UAM:Ento:263207 has a dorso-medial process on the maxillary palpi, segment I. I photographed this specimen (frames 6386 - 6412)