

No definite plan for this course was erected beforehand, but the work was pursued as the opportunities existed. The problem involved the obtaining of a general knowledge of the invertebrate fauna of the region, particularly those things aquatic. Three methods were employed as a means to this end.

Opportunities for field trips for the purpose of collecting material were limited and therefore the collection is small. No attempt was made to collect as many species as possible, but rather to learn the more common animals encountered and especially those which were not familiar. Not everything collected and observed are included in the collection.

A considerable proportion of the semester was spent with material already collected. About three weeks was spent on snails. Plankton material collected for zoology 114 was examined. Commonly encountered genera were---Rotifera, Anuraea, Notholca, Triarthra, Polyarthra, Conochiloides, Bracionus, Synchaeta, Coleps, Vorticella, Spirostomum, Difflugia, Euglena, Trachelomonas, Phacus, Dinobryon, Clamydomonas, Eudorina, Volvox, Peridinium, Didinium, Stentor, Cyclops, Diaptomus, Daphnia and Cypris. Rather than merely listing as many genera as possible I chose to observe each for a period of time in an effort to fix them well in mind and associate them with their particular movements and other characters useful for identification.

Work with the literature of the field was mainly for the purpose of a general survey. Some emphasis was placed on material which contained keys or dealt with the taxonomy of

certain groups. A bibliography of taxonomic and faunistic studies was compiled.

Having already had two courses in general invertebrates this present work served the purpose of rounding out these formal courses with special reference to the fresh-water faunal studies of a taxonomic and ecological nature.

## Dates and Localities of Molluscs in collection

*Polygyra hirsuta*  
*Gonyodiscus cronkhitei*  
*Succinea retusa*  
*Polygyra thyroides*  
*Polygyra multilinea*  
*Polygyra monodon*  
*Helisoma campanulatum*  
*Pomatiopsis lapidaria*  
*Zonitoides nitidus*  
*Goniobasis livescens*  
*Cochlicopa lubrica*

10/8/41 Bank of Huron River and  
woods along the shore near  
Delhi, Wash. Co.

*Lymnea palustris* 4/16/42 Northville Fish Ponds

*Polygyra albolabris dentata* IV-4-42 White Woods

*Polygyra profunda* IV-4-42 White Woods

*Cyclonaias tuberculata*  
*Ptychobranthus fasciolare*

10/8/41  
Huron River below Delhi

*Elliptio dilatatus*  
*Strophitus rugosus*  
*Micromyra iris*  
*Lampsilis siliquoidea*

10/8/41  
Honey Creek, Livingston Co.

*Anodontoides ferussacianus*  
*Alasmidonta calceolus*

IV-23-42  
Flemmings Creek

*Anodonta grandis*

V-10-42 Base Line Lake

Other records of Molluscs are to be found in the numbered list.

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Platyhelminthes

Class-Cestodea

Order-Byclophyllidea

Family-Proteocephalidae

Proteocephalus ambloplites (44)

Annelida

Class-Hirudinea

Order-Rhynchobdellida

Family-Glossiphonidae

Placobdella (49)

Order-Gnathobdellae

Family-Herpobdellidae

Erpobdella punctata (49)

Arthropoda

Subphylum-Chelicerata

Class-Arachnida

Order-Acarina

Suborder-Hydracnina

Family-Limnocharidae

Eylais (3)

Family-Hydrachnidae

Hydrachna (3)

Family-Hygrobatidae

Najadicola (43)

Subphylum-Crustacea

Class-Eucrustacea

Subclass-Branchiopodia

Order-Anostracida

Family-Chirocephalidae

Eubbranchipus vernalis (1)

Division-Pericarida

Order-Amphipoda

Suborder-Gammarinae

Family-Gammaridae

Gammarus fasciatus (2)

Gammarus (34)

Family-Orchestiidae

Hyalella knickerbockeri (12)

Division-Eucarida

Order-Decapoda

Family-Potamobiidae

Cambarus virilis (20)

Cambarus propinquus (46) (38)

Cambarus diogenes (45)

Class-Myriapoda  
Order-Diplopoda  
Family-  
Spirobolus marginatus (42)

Class-Insecta  
Subclass-Pterygota  
Order-Hemiptera  
Family-Gerridae  
Gerris (11)  
Family-Belostomatidae  
Lethocerus (10) (26)  
Family-Corixidae (6)  
Order-Odonata  
Suborder-Zygoptera (40)  
Agrion (16)  
Suborder-Anisoptera  
Ischnura (24)  
Anax (25)  
Leucorhinia (25)  
Aeshna (28)  
Dromogomphus (28)  
Didymops (39)  
Boyeria (15)  
Order-Ephemera  
Heptagenia (13)  
Baetis (14)  
Siphonurus (30)  
Order-Plecoptera  
Family-Isoperlidae (1)  
Togoperla (17)  
Isoperla (18)  
Order-Coleoptera  
Family-Dytiscidae (8)  
Family-Gyrinidae  
Gyretes (27)  
Family-Lampyridae (41)  
Order-Neuroptera  
Corydalid (22)  
Order-Tricoptera  
Family-Hydropterygidae (9)  
Family-Limnophilidae (21)  
Family-Helicocorypha (47)  
Order-Diptera  
Family-Culicidae (4)  
Family-Stratiomyidae (7)  
Family-Simuliidae (23)  
Family-Chironomidae  
Chironomus utahensis (32)  
Protenthes (33)  
Subfamily-Ceratopogoninae (33)

Mollusca

Class-Gastropoda  
Order-Pulmonata  
Suborder-Stylommatophora

Family-Polygyridae  
     Polygyra hirsuta  
     Polygyra thyroides  
     Polygyra multilineata  
     Polygyra monodon  
     Polygyra alboalabris dentata  
     Polygyra profunda  
 Family-Zonitidae  
     Zonitoides nitidus  
 Family-Endodontidae  
     Anguispira alternata  
     Gonyodiscus cronkhitei  
 Family-Succineaidae  
     Succinea retusa  
 Family-Cochlicopidae  
     Cochlicopa lubrica  
 Suborder-Basommatophora  
 Family-Lymnaeidae  
     Lymnaea palustris (37)  
 Family-Planorbidae  
     Helisoma campanulatum  
     Helisoma antrosum (29)  
     Helisoma trivolvis  
 Family-Physidae  
     Physa gyrina (36)  
 Family-Limacidae  
     Deroceras gracile (48)  
 Order-Ctenobranchiata  
     Family-Pomatiopsidae  
         Pomatiopsis lapidaria  
     Family-Pleuroceridae  
         Goniabasis livescens

Class-Pelecypoda

Order-Eulamellibranchia

Family-Unionidae

    Elliptio dilatatus  
     Cyclonaias tuberculata

Family-Anodontidae

    Strophitus rugosus  
     Anodonta grandis  
     Anodontoides ferussaciana  
     Alasmidonta calceolus (19)

Subfamily-Lamsilinae

    Lampsilis siliquoidea  
     Ptychobranthus fasciolare  
     Micromyra iris

Family-Sphaeriidae

    Musculium (35)  
     Sphaerium (31)

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1. *Subbranchipus vernalis*  
Pond in White Woods IV-11-42  
Noticed increase in size of individuals in the pond  
from one week to the next. First seen IV-4-42.
2. *Gammarus fasciatus*  
Pond near Zeed Road. IV-11-42
3. *Dytids*  
*Hydrachna*  
Pond in White Woods. IV-4-42
4. *Collicidae*  
Pond near Zeed Road. IV-11-42  
Collected from among trash, such as tin cans, close to edge.
5. *Chironomidae*  
Pond in White Woods. IV-11-42
6. *Stratiomyiidae*  
Open field pond near White Woods. IV-4-42  
Found floating on surface near edge of pond. Live for a  
period of several hours in alcohol.
7. *Dytiscidae*  
Pond near Zeed Road. IV-11-42
8. *Hydroptychidae*  
High Alpine Creek. IV-4-42
9. *Limnocoerus*  
Flammings Creek at Mill Pond. IV-16-42  
Found in quiet water at edge of a fast run.
10. *Gammaris*  
Flammings Creek at Mill Pond. IV-16-42
11. *Hydrocolella knickerbockeri*  
Same  
Was very common among algae (*Spirogyra*) at edge of creek.
12. *Hydrogenia*  
Same  
Taken from swiftly moving water from under stones.
13. *Enallagma*  
Same  
Found in water not quite so swift as above.
14. *Hydrobia*  
Same  
From detritus at edge of stream.
15. *Agabus*  
Same  
Same habitat as above.

17. *Togoperla*  
Same  
In moderately fast water under stones.  
(Frison's "Plecoptera of Illinois" a very good key)
18. *Isoperla*  
Same
119. *Alasmidonta calceolus*  
Same  
No living specimens noted.
20. *Cambarus virilis* (1 female and 3 males)  
Same  
Appeared to be quite common.
21. *Limnophilidae*  
Same  
Taken from detritus near edge of stream.
22. *Corydalis*  
Loch Alpine Creek near highway. IV-23-42  
In shallow swift water under stones.
23. *Simulidae*  
Same  
Only found in the swifter portions of the stream.
24. *Ischnura*  
Lower Loch Alpine Pond. IV-23-42  
Very abundant among dense growth of *Chara*
25. *Anax leucorhinia*  
Same
26. *Lethocerus*  
Flemmings Creek, near Plymouth Road. IV-23-42
27. *Gyretes*  
Loch Alpine Creek, near highway (below bridge) IV-23-42
28. *Aeschna* (2) *Dromogomphus* (1)  
Flemmings Creek near Plymouth Road.  
Near edge of stream.
29. *Helisoma antrosa*  
Same  
Found attached to cement wall under bridge.
30. *Siphylurus*  
Loch Alpine Creek (on Golf Course). IV-23-42  
A swift water form.
31. *Sphaerium*  
Flemmings creek near Plymouth Road. IV-23-42



32. *Chironomus utahensis* (larva, pupa, adult)  
Third Sister Lake. IV-30-42
33. *Protenthes Ceratopogoniae*  
Same.
34. *Gammarus*  
Third Sister Lake. V-3-42  
At this time the young were appearing.
35. *Musculium*  
Pond in White Woods. IV-4-42
36. *Physa gyrina*  
Same
37. *Lymnaea palustris*  
Same
38. *Cambarus propinquus*  
Base Line Lake-edge of Newcomb Tract. V-10-42
39. *Didymops*  
Base Line Lake-edge of Newcomb Tract. V-10-42  
Commonly taken while seining for fish.
40. *Zygoptera*  
"Hanns Pond" Newcomb Tract. V-10-42  
Found swimming in open water near edge.
41. *Lampyridae* (a female)  
Newcomb Tract. V-10-42  
Most common near shore of lake.
42. *Spirobolus marginatus*  
Ann Arbor. V-8-42
43. *Najadicola*  
Base Line Lake. V-10-42  
Taken from mantle cavity of *Anodonta grandis*.
44. *Proteocephalus amplexites*  
"Hanns Pond" Newcomb Tract. ~~VI~~ V-10-42  
Taken from liver of Bluegill.
45. *Cambarus diogenes*  
Loch Alpine Creek. IV-23-42  
Specimen had just completed molting.
46. *Cambarus propinquus*  
Flemmings Creek at Plymouth Road. IV-23-42
47. *Helicopyche*  
Loch Alpine Creek. IV-23-42
48. *Deroceras gracile*  
Montcalm County. V-17-42
49. *Erpobdella punctata* *Placobdella* sp.  
Flemmings creek. IV-23-42  
Attached to bottom.