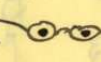




June. All -  
postmark 5/19/13

My dear Florence - I'm sure you will  
excuse this sunny paper on a rainy  
day, and at least you ought to when  
you see herein the "sheets" which  
I obtained with danger to my life. When  
I asked for them he said "does she  
want Banks list or the requirements for  
the course" - I asked him that I  
was quite sure it was the latter. Then  
he looked at me  squarely,  
with a, "I got those sheets out after  
she left. How did she know about  
them?"  Now you can just  
imagine that the little imp within me  
had all he could do to keep from  
winking to my eyes, but with  
most solemn countenance and  
innocent eyes  I suggested that  
some one might have written and  
he agreed and subsided with a "certainly  
I bring them up to you" - So here they  
are; Don't you rush to thank him  
yourself? - I hear that he is becoming  
a little lenient and coming up on  
his on those requirements

now for news I hardly know where to begin.  
Probably Miss Moore wrote you about  
Miss Stafford's pretty announcement  
party. Last week she gave up all of  
her work here - she had gone too  
far without realizing she was so tired,  
but I hope with rest she will soon  
pull together again - she will leave  
early in June, I think - I am so sorry  
that her year had to end in that  
way, for it is a great disappointment  
to her, and she has been so sweet thru  
it all.

Dr. Crawford left a week ago last  
Thurs - for New Mexico - an eight day  
winter trip from N. Y. - It doesn't seem  
right in our lab. with the two California  
cases gone. He is coming back about  
Commencement time and pack up -

The summer days trip to Fair Haven  
has been given up. <sup>(S.F.)</sup> But aren't you  
glad that we will be here for the fall  
trip? Miss Moore went up with Roy -  
need have. Frid. all coming back last  
night - she has loads of Potomacgetons  
and says the place is just a fine  
picking ground.

Last week the Farm Course trip  
was to Six Mile Creek for wild flowers -  
The trillium was magnificent,  
so large, and in all stages

from the pure white of the freshly blown flowers to the pinks and lavender of those that had been out longer. The columbines were so pretty too peeping out from the crevices in the ledges, and with the green background of mosses and ferns. Dorothy & I took "Lucifer" as his master's name home for a few days' visit. This man, wagged his tail and smiled the best he knew how, for he seemed to enjoy it immensely.

Dr. Knight was in the lab. the other night and said he was going to write to you. Isn't it fine that the male the Vanity Nine!! An experience like that would mean a good deal to him.

Last Monday at Jugatae Prof. Comstock gave a splendid talk on the origin of metamorphosis, after which we adjourned to the steps in front of the N. Y. S. C. of A. and had the group picture taken by Mr. Cole. It is fairly good for so large a group, but is rather dark. Jack had on his new gray suit and balanced a gray felt hat - (1) this style on his knee -

Yesterday P. M. the Misses Stuyvesant gave a grand picnic to the members of the French & German, Entomol. classes - Dr. & Mrs. Riley & dear little Alice were there, Miss Kephart, Mary & me for ladies, Morrison, Kelly, Betty, Mr. Nicholas, Mr. Morrow, & Mr. Fourn - First we had loads of fun playing baseball, in a field along by Jackson Home road - This gave us a great appetite for hot dogs roasted over a roaring fire, and everything tasted so good! We were out from 2.30 until 7.00 - Then we had to scamp to scrub our faces & jaws for Sigma Xi initiation - After the exercises refreshments were served in the Cafeteria in the Home Economics building - Sat beside Dr. Riley - He certainly is a big tease and cut up and we had lots of fun.

There are most busy days, for I am marking one of Mrs. Crawford's sections and being a green hand it takes me longer - To write when you can all about yourself & Kelly. My but I would like a ride with you! Hope your mother still continues to improve. It certainly is wonderful.

Estimable Douglas whom I knew at Cold Spring Harbor two summers & who was a near neighbor when I was at Sweet River has the scholarship in Botany for next year & is to be my roommate at the draws. I feel relieved to be settled, though it won't seem right without Mary. She and I love -

People at the lab - I am inquiring for you - I will hold to have before me know it - Nucleus saw asked Kelly - have to you -

I came across this scrap of paper in the lib.  
A dichotomous <sup>Thought you might be interested</sup> table can indicate differences  
in kind of specialization (Tigatae & Mnatae) - further  
dichotomous classification must be based on other  
characters, for the same (characters) will now be merely  
differences in degree of specialization of the same kind  
therefore not fitted for such a table (anal area taken  
reduction in fore wing AA) hind wing - c) specialization toward  
rapid flight, i.e. narrow wings - ~~Spingidae~~, Zygaenina - (c) wider wings preserved  
Saturnina - forms are 1) generalized 2) specialized <sup>in addition</sup> (reduction, atrophy)

of evolution phylogeny. Each form studied will represent the tip of a twig which has separated from the main branch -

To determine a generalized form, the study of a single organ <sup>in a group</sup> <sub>1</sub> the variations & functions - action of natural selection on the provisional classification will result <sub>2</sub> of an organ. Then another organ should be selected & worked out similarly. Where the results differ renewed study is necessary. Ordinarily little attention is devoted to the study of functions of organs in purely taxonomic <sub>work</sub>

## ENTOMOLOGY 13

### SUMMARY OF WORK TO BE ACCOMPLISHED.

The following work must be finished and reported by Wednesday June 11. Students may arrange the order of their work to suit their convenience, but will be expected to report promptly at all laboratory periods and field trips as assigned.

(A). A collection of 100 species of insects, accurately determined, labelled and arranged in systematic sequence. There should be a series of 4 specimens of each species, and when possible, both sexes. Some species, by reason of their rarity, may be represented by less than 4 specimens. This collection is to be arranged in Schmitt boxes.

(B). Ecological collection. From two to four thousand specimens are to be collected, mounted, and labelled. These need not be named, and are to be arranged according to the appended habitat classification, and including specimens to illustrate all categories of the classification.

Set (B) is to include: (1) 50 perfect specimens of moths and butterflies, correctly spread and measuring over  $3/4$  inch in spread of wings.

(2) 20 perfect microlepidoptera correctly spread measuring less than  $3/8$  of an inch in spread of wings, and some of which are to be on minuten nadeln.

(3) 5 dragon-flies and 5 damsel-flies spread and their bodies protected with a 00 pin running lengthwise thru them.

(4) 100 minute Diptera and Hymenoptera, mounted on minuten nadeln and blotting paper supports.

(5) 50 kinds of larvae or soft-bodied adults, in alcohol in vials arranged in Marx trays, arranged according to habitat, and supplementing the pinned specimens.

(C). 3 specimens of Thysanoptera mounted in balsam on glass slides, the wings and legs properly spread for study.

(D). Front and hind wings of two Hymenoptera mounted in balsam on glass slides.

(E). 5 mounted specimens of blown caterpillars. Arrange with Mr. Ilg to show you how to prepare these.

(F). 2 butterflies or moths of 2 or more inches expanse of wings, perfect specimens to be mounted in the Denton glass mounts. Arrange with Mr. Ilg to show you how to make these, and supply yourselves with the necessary glass. Ruined photographic plates 4x5 and 5x7 are satisfactory.

(G). Larvae, pupae, adults and food plant of some species of insect, arranged to illustrate its life-history in a Riker mount, with appropriate labels.

(H). The several named species of beetles, already issued, to be remounted, labelled, mounted on blocks and arranged in systematic order.

(I). Such other tasks as may be from time to time assigned.



A. Classification According to Plant Societies.

1. Sylvan (Woodland species)
  - a. Dendrophiles. Tree-dwellers
  - b. Thamnopsules. Copse-dwellers
  - c. Bryophiles. Moss-dwellers
2. Campestrian (Species of open fields)
  - a. Xerophiles. Living in deserts and arid places.
  - b. Mesophiles. Living in neither exceptionally wet nor arid conditions.
  - c. Hygrophiles. In wet meadows, marshes and bogs.

B. Classified according to relation to the plant-host.

- G. Internal species.
    - a. Lignicolous (Borers in living trees and other plants)
    - b. Cavicolous (Dwellers in cavities of plants) Some ants, many bees and wasps.
    - c. Cecidicolous (Gall-inhabiters)
    - d. Mycicolous (Living in fungi)
  - H. External species
    - a. Galathenic (sapsucking) species
    - b. Phyllophagous (leaf and petal feeding species)
    - c. Anthophilous (flower-visitors)
- IV. Aerial series. A temporary habitat, including chiefly swarming and migrating forms.
- V. Necrophilous series (living in dead matter)
- I. Species that live beneath bark  
Species that live within rotten logs
  - J. Species that live in excrement (scatophilous)  
Species that live in carrion.
- VI. Zoophilous series. (species that infest living animals)
- K. Internal parasites. (larvae of bot-flies, and of parasitic Hymenoptera and Diptera)
  - L. External species
    - a. Permanent parasites. Lice, bird-lice, adult-fleas.
    - b. Temporary visitors. Horn-flies and many blood sucking insects.