

REMARKS ON COLLECTING AT LIGHT, WITH A LIST OF THE COLEOPTERA TAKEN.

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After I had settled in South Framingham, it was not long before I discovered that I had selected a favorable room for my "bug-den," since moths and other insects soon began to visit me by way of the windows while at work on my collection during the summer evenings.

The house is so situated that from my room, an attic one on the third floor, one looks out over gardens, yards, and shade trees, toward the west. It was formerly shaded by several European spruces and a large elm, but one of the spruces is almost dead and the elm has been cut down at the request of a "back-to-the-soil" enthusiast whose crop of weeds has probably furnished me with some fine micro-lepidoptera. The afternoon sun beats in the two windows and, in spite of the closed blinds, renders the room uninhabitable to anyone but a "bug-catching crank" long after the sun has set. The insinuations in regard to my mental condition become more emphatic as the summer progresses and the heat drives the rest of the household to the piazza, while I insist on retiring to my room for the evening collecting. The heat caused me much trouble with my point mounting so that I discontinued the use of shellac for some time and adopted an English cement which sets very quickly and does not soften. I have since concluded that it was a poor quality of shellac which softened with the heat and allowed the insects to drop off or twist about. When I returned from a vacation trip to Colorado after the extremely hot period of July, 1911, to find my new boxes stuck together and a penholder more than half buried in a cake of paraffine on my table—I was mighty glad I went. Dozens of my shellac-mounted specimens have had to be remounted as a result of that summer's heat.

The town has grown very rapidly since I came here in 1904 and is now an embryo city with houses springing up on every vacant lot, so that I suspect a falling off in the number of specimens that

come to my light. I have used an ordinary kerosene lamp with a reflector, sometimes turned to throw the light out of the window, but more often to reflect onto my work; and the insects seem to come in just as readily. I have also tried setting the lamp on a chair before the window with a sheet of glazed paper hanging over the back behind the lamp, with some success. Nothing comes to light on moonlight evenings and a dark, muggy night is, of course, the best. I have taken many Lepidoptera during a pouring rain.

The most abundant species of moths belong to the genera *Leucania*, *Hadena*, *Mamestra*, *Feltia*, and *Crambus*. Certain Geometridæ, as *Xanthorhoea ferrugata*, *Gypsochroa designata*, and *Hydriomena multiferata*, have been common in the past but they have almost disappeared during the last few years.

It is a matter of much regret that I have not kept a complete record of the many species of Lepidoptera taken on the table and the walls of my room. Many of the species immediately hide behind the boxes and in obscure nooks and appear next morning on the screens or between the curtain and the glass of the windows. Others are never seen until picked up dead on the floor. Nearly all the specimens fly about the light for a time and then, especially the micros, settle down on the table or fly to the ceiling to remain until disturbed. A favorite resting place for the species of *Hadena* and *Leucania* is the dark varnished door to the hall, perhaps on account of the draft through the crack next the jamb.

For some time I used to identify the moths as they came in, and then paper at once or reserve for mounting the next morning, but one evening a robust *Hadena* entered an open double box of Lepidoptera and quietly remained there until the box was shut up and replaced on the shelf. Some days later on opening the box I found that its work had sufficiently identified it as *devastatrix*.

I have generally collected from dark to midnight but have remained as late as 2 a. m. on especially favorable nights. The specimens come intermittently—in bunches best expresses it—and sometimes a dozen specimens will be bumping about the room, then hardly one for half an hour or so. On some evenings the ceilings will be dotted with hundreds of minute Diptera and Hemiptera, and yet it is seldom that a mosquito finds its way in. I once counted 94 specimens of small Diptera stuck on a quadrant of the base of the lamp, a total of 376 for the whole base. I thought it a hopeless task to count those on the table.

Late in the summer a species of lace-winged fly (*Chrysopa*) becomes common and I was once surprised to receive a sharp bite on the arm from one of these delicate insects.

The largest insects that have come in were *Telea polyphemus* and *Prionus pocularis*.

The list of Coleoptera is very small compared with the species of Lepidoptera that have been taken, but it may be of interest to record them for many of the species (as *Macrobasis torsa* and *Liopus alpha*) must have flown at least a mile from their breeding places into the thickly settled part of the town.

LIST OF COLEOPTERA TAKEN AT LIGHT.

Bembidium variegatum Say, July 28, 1913. *Amara apricarius* Payk., August 23, 1910. *Platynus* Sp? (near *moerens* Dej.), June 29, 1913. *Platynus aeruginosus* Dej., May 27, 1908. *Lebia atriventris* Say, May 28 and June 19, 1908. *Lebia viridipennis* Dej. June 19, 1908. *Lebia ornata* Say, July 4, 1909. *Lebia scapularis* Dej., September 4, 1910. *Pinacodera platicollis* Say, October 1, 1910. *Chlaenius pennsylvanicus* Say, May 24, 1908. *Chlaenius tricolor* Dej., May 24, 1908. *Harpalus pennsylvanicus* DeG., June 28, 1908; August 13, 1912. *Harpalus erythropus* Dej., July 24, 1911. *Stenolophus ochropezus* Say, May 24 and 27, 1908; May 16, 1909; July 1 and August 4, 1910; July 31, 1911; April 21, 1912; July 28, 1913. *Agonoderus pallipes* Fab., July 1, 1907; July 2 and 28, 1913, and many others not recorded. *Agonoderus lineola* Fab., May 24, 1908; July 18, 1909. *Anisodactylus terminatus* Say, July 28, 1913. *Anisodactylus sericeus* Harr., May 27, 1908.

Hydrocharis obtusatus Say, July 29, 1913. *Philhydrus ochraceus* Mels., July 28, 1913.

Necrophorus americanus Oliv., May 31, 1908. *Necrophorus orbicollis* Say, October 4, 1910. *Agathidium oniscoides* Beauv., May 27, 1908.

Oxytelus sculptilis Grav., May 24, 1908. *Acylomus ergoti* Casey, June 8, 1908. *Hippodamia 13-punctata* L., August 23, 1912. *Adalia bipunctata* L., July 7, 1908. *Henoticus serratus* Gyll., August 8, 1913. *Lathropus vernalis* Lec., July 4, 1908. *Litargus sexpunctatus* Say, July 26, 1912. *Typhra fumata* L., May 28, 1908; July 31, 1911; August 21, 1912 (two specimens).

Cryptarcha ampla Er., June 23, 1904. *Melanophthalmus obtusa* Lec., April 5, 1910; September 8, 1911. *Melanophthalmus distinguenda* Com., May 29 and July 4, 1908. *Prionocyphon discoideus* Say. (?), July 5, 1904.

Entomophthalmus rufofolius Lec., June 28, 1910. *Melanotus communis* Gyll., May 24, 1908; May 6, 1913. *Melanotus trapezoideus* Lec., July 15, 1911. *Melanotus sagittarius* Lec., May 30, 1908. *Limonioides basillaris* Say, July 15, 1911. *Athous cucullatus* Say, June 27, 1908. *Asaphes memnonius* Hbst., June 27 and July 4, 1908.

Podabrus tricostatus Say, June 9, 1910. *Podabrus rugulosus* Lec., June 27, 1908; June 30, 1910; June 29, 1913. *Podabrus basillaris* Say, May 29 and 31, 1908; June 4, 1913. *Podabrus simplex* Coup., May 29, 1908; June 3, 1912. *Silis percomis* Say, May 23, 1911. *Telephorus bilineatus* Say, May 25, 1908.

Cregya oculata Say, August 5, 1910 (two specimens). *Ernobius mollis* L., May 29, 1908; July 2, 1913. *Lucanus dama* Thunb. Several times, no record at hand.

Trox unistriatus Beauv., August 10, 1907. *Trox scaber* L., May 29, 1912. *Dichelonycha elongata* Fab., June 4, 1912. *Dichelonycha albicollis* Burm., May 25, 1910. *Dichelonycha diluta* Fall (?), June 1, 1912. *Serica vespertina* Gyll., June 19, 1908. *Serica sericea* Ill., June 9, 1910. *Diploptaxis sordida* Say, July 29, 1913. *Diploptaxis atlantis* Fall, May 25, 1908. *Lachnosterna fusca* Fröl., May 19, 1907; May 7, 1910; and many other records. *Lachnosterna nova* Smith, June 22, 1908; May 25, 1910; May 25, 1912. *Lachnosterna hirticula* Knoch, May 25 and 29, 1910; one of the most common visitors. *Pelidnota punctata* L., July 17, 1911; August 9, 1912. *Ligyris relictus* Say, September 7, 1910 and several other records.

Orthosoma brunneum Forst., June 28, 1913. *Prionus pocularis* Dalm., July 30, 1911. *Crioccephalus agrestis* Kirb., July, 1913. *Elaphidion villosum* Fab., July 18, 1909; May 6, 1913. *Xylotrechus colonus* Fab., July 14, 1912. *Monohammus titillator* Fab., July 29, 1913. *Monohammus confusor* Kirby, July 23, 1913 (male and female). *Liopus alpha* Say, July 10, 1909; June 25 and 30, 1913.

Gastroidea polygoni L., July 6, 1908. *Diabrotica vittata* Fab., August 25, 1910 and many other records. *Galerucella luteola*

Muls., August 13, 1912, and many other records. *Oedionychis limbalis* Melsh., May 3, 1913.

Tenebrio molitor L., July 6, 1908. *Strongylium tenuicolle* Say, June 27, 1908. *Hymenorus discretus* Casey, June 28, 1908; August 24, 1909; June 25, 1913. *Hymenorus niger* Melsh., June 20, 22, and 24, 1908. *Hymenorus melsheimeri* Casey, August 4, 1910. *Mycetochares megalops* Casey, May 30, 1911. *Carebara longula* Lec., July 10, 1907. *Orchesia castanea* Melsh., August 13, 1912. *Salpingus virescens* Lec., August 12, 1912. *Capnochroa fuliginosa* Melsh., July 17, 1912. *Glipodes sericans* Lec., August 4, 1910. *Mordellistena dimidiata* Helm. July 4, 1908. *Notoxus anchora* Hentz, July 4, 1908; June 28, 1910. *Notoxus monodon* Fab., August 17, 1911. *Dendroides concolor* Newm., June 3, 1912. *Macrobasis torsa* Lec., June 15, 1908.

Hylobius pales Hbst., May 24, 1908; April 17, 1910. *Pachylobius picivorus* Germ., August 14 and September 3, 1910. *Conotrachelus nenuphar* Hbst., May 30, 1908. *Conotrachelus elegans* Say, May 27, 1908. *Cryptorhynchus bisignatus* Say, June 29, 1913. *Balaninus uniformis* Lec., August 19 and September 5, 1912. *Crypturgus atomus* Lec., August 5, 1910. *Cratoparis lunatus* Fab., July 31, 1911.

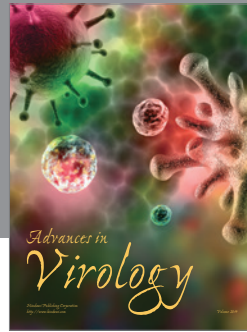
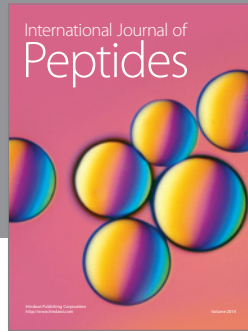
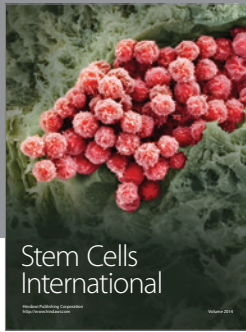
AN IMPROVED COLLECTING BOTTLE.

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In common with many other entomologists, I have been greatly annoyed by the condensing of the moisture on the inside of my collecting bottle. I notice that some entomologists make a hole in the cork and place a lump of cyanide therein, but in my experience it is only a matter of a few days until the cork becomes damp and sticky and unfit for use, especially in rainy weather.

The writer has recently adopted the plan of sinking a 9 x 36 mm. shell vial in the cork, with the mouth of the vial opening into a larger bottle or tube, whichever may be used. If these 9 x 36 mm. vials are too long they may be cut off so that the opening will be flush with the surface of the cork, although I prefer to have them



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