quite broad and short. Eyes not widely separated, P. M. E. as close to P. S. E. as to A. S. E., the A. M. E. are not very much nearer the A. S. E. than to each other. Abdomen twice as long as the cephalothorax. Femur II. longer than the cephalothorax. The epigynum shows an area longer than broad, with nearly parallel sides, divided by a rather narrow septum widened at its tip, the apical part of the sides are dark circular, and the basal part light and oval. Olympia, Washington. (T. Kincaid.)

NOTES ON COLLECTING AT BLOOM.

BY A. W. HANHAM, WINNIPEG, MAN.

At Brandon, Manitoba, in 1896, some very successful collecting was done on the prairies and open hillsides surrounding the town. Except in the valley of the Assiniboine River, which is still well wooded, the country around Brandon is very open—regular prairie country—with, of course, a good proportion under cultivation, it being one of the good wheat-growing districts of Manitoba.

However, there is plenty of good collecting ground to be found in almost any direction, and within a few minutes' walk. A short account of collecting at bloom may be of interest to our entomological readers, especially to those who have never visited "the boundless prairies of the West." Or there may be some who have had that pleasure, but have never tried collecting in this way, for lack of opportunity.

In 1896, I was at Brandon from July 9th to August 4th, and in 1897, from August 5th to 28th.

In 1896, I had my first evening collecting on the 15th; in previous years I had often collected off flowers towards dusk, and that was my procedure on this evening. It was on my homeward way that the inspiration came to me to sweep the clumps of bloom I came to, and the result astonished me, and led to the practice of collecting in this way on all available evenings.

It was quite too dark to see things moving on the wing or at rest on the flowers, and the only way to find out the contents of the net, after sweeping, was to hold it up against the sky line; even then it was generally impossible to tell what the catch consisted of, though the moths in the net could be seen and counted. After sweeping a few heads of bloom, it was nothing out of the way to find a dozen or more moths in the net, and it was surprising how little struggling they did either in the

net or when bottled. Most of the Noctuids contented themselves with crawling about the net, and quite a number feigned death; the presence of a *Plusia* in the net could almost always be told by the noise it made in flying.

First bottling the lively ones as they flew up the side of the net, I would then shake or gather the rest into a corner, and then, putting my wide-mouthed bottle in, I would run it up the slope of the bottom side of the net and everything would tumble or be scooped into it. Of course, during the whole process the net had to be held up against the sky, and I managed to keep it at the right elevation and steadiness by gripping the end of the stick between my knees. This allowed me the free use of both hands for securing the catch.

Even on quite cool evenings—when before dark hardly a thing had been noticed on the wing—quite a number would still be swept off the flowers, and they were even more sluggish than usual.

As in “sugaring,” the number of species taken, outside of the Noctuidae, did not amount to anything.

As the catch of the evening was, to a great extent, an unknown quantity—as to the species taken, not the numbers—the anticipation of the “output” on arrival home was decidedly pleasurable, and, till the novelty wore off, rather exciting.

Plusias were not taken in any great abundance by this method; in fact, the majority of those captured during my visit were netted before dark.

The plants or flowers off which the moths were swept were as follows:
Wild bergamot or horsemint (*Monarda fistulosa*, var. *mollis*).

Scotch thistle (*Cnicus undulatus*).

Spreading dogbane (*Apocynum androsaemifolium*).

Wild sunflower (*Helianthus rigidus*).

Species of golden-rod, of which *Solidago rigidus* appeared the most attractive.

Of the above, the wild bergamot, while it lasted, was, without doubt, the most alluring. It seems to grow pretty generally over the prairie, both in the open and in open bush, especially among clumps of silver-bush.

Unfortunately, during my second visit very little of it remained in bloom, but the wild sunflower was everywhere in profusion.

On July 15th I took my first specimen of *Plusia insolita*, and on

the 25th, the second; on July 23rd a *Plusia biloba* (such a beauty), and on the 24th I secured *Deva purpurigera*.

In July, the most abundant Noctuids were: *Noctua fennica*, *Carneades flavicollis* (a good species) and *tessellata*, *Hadena devastatrix*, and *Leucania commoides*; and of these *flavicollis* was easily the most plentiful, an every evening, after the examination of the contents of the bottles, it was thrown out by the score.

A few of the best captures in July were: Several species of *Rhynchagrotis*; *Noctua patefacta*, *normaniana* and *atricincta*; *Carneades pleuritica*, *basalis*, *silens* and *redimicula*; *Mamestra purpurissata*, *Orthosia Conradi*? and *Cucullia florea*. In August, *Noctua collaris*, *Hadena stipata* and *transfrons*, *Oncocnemis atrifasciata*, *Caradrina extimia*, etc.; and the following predominated then: *Noctua baja*, *Feltia subgothica* and *jaculifera*, and *Carneades insulsa*; and a large, handsome pyralid, *Eurycreon sticticalis*, was very common at flowers at night, as well as during the day.

Both *Noctua collaris* and *Hadena transfrons* seemed to have a decided preference for *Solidago rigidus*.

At Winnipeg there is but little open prairie near the city, or easy of access, consequently few attempts have been made at this style of collecting. Mosquitoes, too, are much more in evidence here, and evening collecting, for this reason, until well on in August, has to be abandoned.

The Canada thistle (*Cnicus arvensis*) is a regular pest in and around Winnipeg; when in bloom it is very attractive. I have taken *Plusia ni* and *Californica* off it (July 30th), and *thyatiroides* (Aug. 15th), in 1895, and in 1896 (Aug. 10th), *Orthosia euroa* was very common; by sweeping after dark I secured this species in abundance, and only kept a portion of those netted.

On August 11th (1896), I got five specimens of *Noctua collaris*, all off *Solidago rigidus*.

On August 18th and 24th (1896), I captured the same number of *Plusia thyatiroides* off a tall wild sunflower (*Helianthus scabra*) growing in dark woods near Elm Park. I was "sugaring" on these evenings, and some of my sugared trees were within a few feet of the flowers, but these *Plusias* apparently were not attracted to the sugar in the least.

I have never yet captured a *Plusia* "at sugar," but others, who have done more "sugaring" than I have, may have taken them in this way.