***Neoclytus simplarius*, sp. nov.**

Elongate, slender, subcylindrical. Pale reddish brown, the apical third or more of elytra fuscous-brown; elytra each with a narrow, oblique bar of white pubescence at basal fourth, and a similar but wider bar of longer white hairs at apical third, both of these bars extending over to the sides of the under surface. Head coarsely, densely, rugosely punctate. Thorax subcylindrical, nearly twice as long as wide, its sides just visibly curved from apex to basal third, then suddenly strongly narrowed into the neck-like base; disc rather finely, very densely rugosely punctate, the median line with five very small, transverse tubercles. Elytra at base slightly wider than middle of thorax, then feebly narrowed and subparallel almost to apex, the tips separately obtusely angulate; disc minutely, evenly and very densely granulate-punctate, the granules covered with a very fine, velvety pubescence. Middle and hind femora armed at apex with two minute flat spurs. Length 4-8 mm.

Described from two specimens, beaten from *Ampelopsis arborea* L. at Dunedin, March 29—April 3, and two cotypes in the collection of Chas. W. Leng, taken at Enterprise, Florida, on November 10, from *Quercus nigra*. The transverse ridges or tubercles of the median line of thorax in the Dunedin types are so small as to be easily overlooked, and the species, therefore, taken for a *Clytanthus*, but in one of the Enterprise specimens they are larger and there are two additional tubercles on each side. The species resembles *Clytanthus albofasciatus* Lap. closely in form, size and general colour, but differs widely in the shape and sculpture of thorax and in the arrangement of the pubescent pale bars of elytra.

(To be continued.)

THE INSECT COLLECTIONS OF CANADA.

COLLECTION OF MACRO-LEPIDOPTERA, OWNED BY

F. H. WOLLEY DOD, MIDNAPORE, ALTA.

BY F. H. WOLLEY DOD.

The collection consists of about twenty-five to thirty thousand specimens. Of these, about three or four thousand are British, with a few other European and some Asiatic examples. These, with

July 1917

very few exceptions, are kept together in one cabinet. The bulk of the British collection was formed during the owner's schoolboy days, over twenty years ago. Special attention has always been given to the Lepidoptera of Alberta, and allied species have been acquired from time to time from other parts of the continent in order to get a better understanding of local forms. But a chief specialty has now long been made of the Noctuidæ of North America, which comprise by far the greater portion of the collection. Very many of these have been obtained by purchase or exchange.

The room in which the collection is kept is comparatively large and very well lighted. The presence of a good light is most desirable for making critical studies, the absence of it giving rise to false conceptions. The collection itself is contained partly in cabinets, and partly in wooden store boxes. The drawers of the largest cabinets measure about eighteen inches wide, and about twenty-four from front to back. Such a large size has many advantages, especially for long series, but has been found rather unwieldy and awkward in practice. About seventeen or eighteen inches square seems more generally serviceable. About half the boxes are twelve inches by twenty, and double-sided; that is, each box contains usable space of twenty-three by nearly nineteen inches. These have considerable advantages over large cabinet drawers by reason of their lightness, though flat drawers, if not too heavy are actually safer. The smallest boxes are ten inches square and single-sided.

The paper, or occasionally the bare cork, as well as the sides of the cases, are first covered with a paint consisting of oxide of zinc and gelatine, applied hot. This, besides being an excellent way of renovating a stained or dirty box, increases the whiteness of even the best new paper, and greatly improves the light.

The greater part of the Noctuidæ were recently re-arranged, Sir George Hampson's generic names being used, with occasional slight alterations in the sequence for greater convenience and economy of box room. But the order of species in many of the genera is more in accordance with the owner's own conception of relationship. Hampson's specific names have also been used, with certain changes deemed necessary. The specimens are in double rows, males being placed on the left of a column, and females on

the right, whenever the sexes are fairly well divided or where economy of space is not important. But when one sex largely predominates, especially in long series, or where space is scarce, supers of the long sex are pinned to the inside of the centre of the wrong row. For instance, in a series of twenty-five males and six females, about five of the males might be pinned just sufficiently to the left of the centre of the female row to attract attention to the fact that they were not females. This still leaves room for the subsequent insertion of a few of either sex without lengthening the column. It has been usual to arrange a species in groups by localities, the sex arrangement being adhered to. In the case of a long series from one locality, some scheme of more or less continuous variation is often followed, say from light to dark, those of opposite sexes which most closely resemble one another being kept side by side. It may be observed that such an arrangement leaves frequent blanks in one or other of the rows, giving a very asymmetrical appearance, and in fact is not a paragon of neatness. But the collection is intended essentially for study, and though neatness is aimed at in most departures, utility and instructiveness are primarily considered. Some of the smallest species are arranged three or four rows in a column instead of two. In some of the cabinets the columns are divided by narrow strips of red paper pinned on, but others, and all the boxes, are merely ruled in ordinary lead pencil. Throughout the Noctuidæ spaces have been left for all known species, and every space has a name label. The size of the spaces varies according to the probability of acquisition in the near future, and also, unfortunately, in some genera especially, to the space available, and the length of the series already possessed. The size of spaces left for extension of series is regulated for the most part by the degree of variation. Though some cases have far more blanks than specimens, as a matter of fact the collection as a whole is much more crowded than was at first intended, and there is occasionally little or no room for extension. The columns also are too close together. All cases are, of course, kept well supplied with naphthaline.

As very close attention is paid to variation, long series of the more variable species are kept, there being in one or two instances as many as two hundred and fifty, and that number is considered far

from adequate. The species name is placed at the bottom of each column as well as at the end of the series or of the space left for extension. Each label has the name in brackets except the last of these. Reference has sometimes to be given to a continuation of a series in some extra box not in the sequence. Series consist of specimens picked to show the variation as much as possible. It has always been the custom, at the end of a season's collecting, to carefully examine all the new material in each species taken, and to pick out examples showing modifications not yet in the series, and relax, set and install them. Owing to lack of time in the summer very few things are set fresh. Unfortunately there are as yet very few early stages represented. Each drawer or box has an outside label on the front, on which they are numbered consecutively, with the names of all the genera contained therein, and when a genus is not all in one case, with some indication of the included species or group. Extreme accuracy of data is attempted.

The locality of personally or locally collected specimens is, as a rule, indicated by means of two labels on the transfixing pin. The uppermost of these gives the general locality and province, exact date when possible, and collector's name, though it has been a general custom to put the owner's name to all material collected by one or two constant assistants in the immediate district. This practice was to save extra trouble, but is not strictly in accordance with principles. A smaller label beneath this gives the more exact locality. Method of capture is occasionally indicated. Bred specimens are so marked, with "ex larva" or other stage, and food plant. Pairs taken *in copula* bear identifying labels. Specimens acquired from outside sources were formerly marked with collector's name and from whom received, and date of receipt. Latterly all such material has been given a small label bearing the year of acquisition, and a number, corresponding to similar numbers in an "Acquisition" book, in which full details of the receipt are noted. For instance, "13-16" on a small, separate label beneath the locality label refers to a note in the book under the year 1913, and Acquisition No. 16. This note gives details of the transaction, whether purchased, exchanged, donated, etc., date of receipt, number and class of specimens,

from whom received, general condition, and other details worth recording. The first lot received in the following year bear reference label "14-1." This system is in use in many museums, notably at Washington and in British Museum, and has many advantages to commend it.

The collection contains very few actual types, probably not more than a dozen, and fewer than a hundred co-types. But the next in value to types, and frequently, be it said, of far greater value than co-types, are specimens personally compared with types, co-types, with other important specimens, and with figures and descriptions. These specimens all bear extra explanatory labels, such as "Xd male type* at Rutger's College," with brief indication as to its concise points of difference, or "=beta female type at Brooklyn, exactly," or "*Alpha delta*, agrees with fig. of type," etc., etc. Specimens submitted to experts are similarly labeled, (in red ink) with reference to filed correspondence in corroboration. Specimens of which figures have been published are also marked. Some specimens have been compared with two or more types, and synonymic references thereby made or confirmed.

In addition to the above "authenticity" pin-labels, small card labels are placed at the side of these specimens so that they may be found quickly. These are more brief, and the most important ones are on tinted card, to catch the eye. For instance, a small, red-tinted label beside a specimen in the series of *Euxoa catenula* Grt., "Xd type, and *contagionis* Smith Xd type," would indicate the one by comparison of which with both types the reference of *contagionis* to *catenula* had been made. Varieties are not often separated or indicated as such, but merely by a similar side label bearing the name under which the form was described, whether actually compared or not; e. g., under *Monima hibisci* (*Tæniocampa alia* of our lists) would be a large species name-label, "*hibisci* Gn.," at the foot of each column, and each one bracketed except the last. At the side of one specimen might be a small label "*quinquefasciata* Sm.," which is considered a variation. In this particular case an "Xd type" or "Xd description" specimen is probably referred to, though a specimen thus indicated

*The author uses a private symbol ♂, enclosed in a circle, to indicate male type, and ♀, enclosed in a circle, for female type.

does not always bear an authenticity label. Against another might be "*latirena* Dod" indicating one of a geographical race, and another "*malora* Smith." The status of such names, and of others, as decided upon by the owner, is explained in note-books and a card index. A brief note is sometimes placed at the bottom of a series, perhaps referring for comparison to some other species and box. Points for future investigation are thus kept in mind.

By no means the least valuable accessory to the collection is a series of MSS books containing critical notes. All those concerning North American species are indexed in a Smith's 1903 Check List, species described since its publication being entered at intervals. That was the system primarily adopted, and still adhered to, though the notes are now also indexed on a card index referred to below. They consist largely of records of impressions gained from inspection and studies of sundry other collections, and include notes on all types seen, as well as details concerning comparisons made with them, and any other facts about collections or specimens examined deemed worthy of note. There are a large number of entries concerning careful comparisons of Hampson's published figures with the types or other specimens from which they were taken, detailing any discrepancies in reproduction. A considerable quantity of discovered synonymy, and corrections of errors in identification by other authors are therein noted, which have not yet been published. Nearly all except the earliest notes bear dates of origin, and the same applies to those on the pin-labels. Needless to say, of several notes taken of the same type on different occasions, where inconsistencies appear, those of the later dates carry most weight, being the result of a closer acquaintance and better knowledge. These MSS books are primarily for the author's own guidance and instruction, and, it must be confessed, are scarcely a model of calligraphy.

Another very useful accessory is a Card Index, containing between four and five thousand cards, dealing almost exclusively with Noctuidæ. A card is allowed for each specific or varietal name ever published of North American species included in Hampson's catalogue from vols. IV to XIII. On the cards are entered:

The name and its author, at the top.

Reference to original description and date.

Reference to the more important publications such as Hampson's and Smith's catalogues, monographs, and to figures, stating in each cases the genus to which the name has been variously referred, and dates of the publications.

Important synonymic references.

At the bottom of the card, if the name stands as the prior one for a species, all the later names are given, with authors and dates, numbered in order of priority, those that stand for recognizable variations being so indicated. Or, if a synonym or variety, the first name only of the species is referred to, e. g., "*=alpha* Sm., 1891" or "*=var. of alpha* Sm., 1891," the authority for such references being elsewhere given on the card. Since, as before mentioned, each synonym or variety has a card to itself, a few species have twenty or more cards. A certain European Tortrix would require nearly seventy, allowing only one for each name. When space fails, another card has to be added, and the fact indicated at the top of each. At the top corners of the card are given:

Reference to the page in note-books where the form is dealt with.

Reference to the number of the slide on which genitalia have been mounted.

Reference, when thought desirable, to the drawer or box containing the species in the collection.

On the reverse side of the card is given the sex, locality and present location of each known type and co-type, together with the number, sexes, and localities mentioned in the original description.

A great deal of time has been spent in preparing this index, which has obviated more congenial work, but it has proved to be of the highest value and utility, as entire knowledge of literature and personal study of any name can be discovered in a moment, with little trusted to memory alone.

There is also a full MSS list of the N. American Noctuidæ, in Hampson's order and names, but revised to correspond with the arrangement in the collection. The recent synonymy only is given, original or otherwise, and all names which are considered to refer to recognizable varieties are entered as such. This list is

marked off according to box numbers, so that immediate reference can easily be made directly to any series.

A beginning has been made of the study of genitalia, and about six or eight hundred most excellent mounts have so far been prepared by Mr. W. H. T. Tams. Where material and time have permitted, several mounts of a species have usually been prepared from one locality, and where variation has been noticed or suspected, more have been made from different localities. As many as four are sometimes put upon one slide, and each mount is numbered to correspond with one on the specimen from which it was taken. These bear the usual data, and are carefully preserved, being in many cases installed in the general collection, and their position indicated by a special symbol at the side. The slides are numbered consecutively, and a catalogue is kept of them, in which brief, critical notes are entered. This study entails the sacrifice of the abdomens of the specimens. Poor, if recognizable, specimens have been used by preference, but when such details of comparison were thought to be of extreme value, good specimens have often been used, even of rare species. It is confidently believed that the partial spoiling of a certain number of specimens is a means fully justified by the end in view, which is the ultimate better understanding of a department of entomological study about which, whilst much has been written and suggested, a very great deal yet remains to be discovered. So far as the author has at present investigated, much valuable evidence, sometimes quite unexpected, has been acquired. And though it is by no means proposed to accept all previously published notes and figures made by others on the subject as unimpeachable evidence in favour of claims made therefor, certain facts brought to light speak for themselves in such a way as to remove all doubt which may have existed as to the extreme value of the study, if carefully and intelligently followed, as an aid to the elucidation of various obscure problems of relationship.

Perhaps the most regrettable want in connection with the collection is a good library. This contains very few publications of an earlier date than 1890, and scarcely any European literature, none of the earlier authors.

The author takes great pleasure in naming North American Noctuidæ and preparing critical notes for other students, and exchanging views. The work is found to be self-instructive, as well as useful to others. All material received is studied very closely, and anything doubtful compared with series and notes. The Card Index is resorted to in this connection. Everything is always returned unless special leave is given for retention. There are a large number of duplicates for distribution, consisting for the most part of Noctuidæ, principally unset. All Macro-Lepidoptera from Alberta or vicinity are desirable, and Noctuidæ (only) of N. America or Europe, and some Asiatic. When at home the owner derives great pleasure from showing the collection to any entomological visitors who are genuinely interested.

RECORDS OF EUROPEAN MIRIDÆ OCCURRING IN
NORTH AMERICA. (HEMIPTERA, MIRIDÆ).

BY HARRY H. KNIGHT, ITHACA, NEW YORK.*

The writer desires to submit some definite data on the occurrence of certain species of Miridæ common to Europe and now known from North America. There are here recorded three species new to our fauna, and definite records are given of three others which are of particular interest. In conclusion the writer gives his findings on certain species supposed to occur and that apparently do not.

Subfamily PHYLINÆ. Tribe PHYLINI.

Microsynamma bohemani Fallen.

16 ♂ ♀, June 27, 1916, Honeoye Falls, N. Y. (H. H. Knight). ♀, June 22, 1914, Rochester Junction, N. Y.; ♂ 2 ♀'s, June 26, 1915, Honeoye Falls, N. Y. (M. D. Leonard). ♀, July 27, 1913, Callicoon, N. Y. (Wm. T. Davis). ♂, Aug. 9, Spruce Brook, Newfoundland, (Chas. Schaeffer). 7 ♂ ♀, Fort Collins, Colorado, (U. S. National Museum).

This species is apparently well distributed in the Eastern United States, having been reported before, but rather indefinitely. Mr. Van Duzee has failed to recognize it in his recent check-list of the Hemiptera, and previously in his tables to the genera of Miridæ. The writer has compared our specimens of this species

*Contribution from the Department of Entomology of Cornell University.
July, 1917