NOTES ON THE SPECIES OF PHÆOCYMA, FOUND IN CANADA.

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The species of *Homoptera* were studied by the Rev. C. J. S. Bethune in 1864, and the North American forms were listed and described in the *Canadian Journal*, Vol. X, for 1865;—a publication not easily gotten hold of at the present time. Most of the material came from Port Hope, Canada, and several new forms, from that locality, were described. That paper forms the basis of our knowledge of the American forms to-day, and as I have just finished a revision of the species from fuller material than was available over 40 years ago, a few notes on the species found in Canada or likely to be found there, may not be amiss.

And first, the name *Homoptera*, Bdv., must fall in favor of *Phæocyma*, Hbn., an earlier name for the same generic concept and *Ypsia*, Gn., comes under the same head. *Zale*, Hbn., differs only on minor points and secondary sexual characters; but may be retained as a section of *Phæocyma* in a subgeneric sense.

P. Lunata, Drury. Occurs throughout the Dominion east of the Rocky Mountains, after midsummer and until late fall. This is the largest of the species and extremely variable in colour and maculation. The males are more or less marked with blue and may have the entire terminal area blue powdered, and that is the form described as edusa, by Drury, the female having been first described as lunata. There is a form occurring in both sexes in which the median area is decidedly yellowish, and that was described as saundersii by Dr. Bethune.

P. Undularis, Drury. Redescribed by Dr. Bethune as nigricans, which is quite as appropriate a name; for the species is intensely black, besides having the wings crossed by undulating lines. I have seen specimens from the eastern provinces only; but the range is probably as great as that of the preceding species, though it is much less common. It flies in June and July. The variety umbripennis, Grt., differs in having the median area of primaries much lighter, with a violaceous tint.

P. ÆRUGINOSA, Guenée. Similar to the preceding and occurs with it; but is much rarer. It differs in having an irro-

ration of green or bluish scales and in structure as well.

P. NORDA, Smith. A very brilliant species from Kaslo and other points in British Columbia and Manitoba; the type material coming from Mr. J. W. Cockle of Kaslo. It ranges

eastwardly however, Dr. Fletcher having sent me specimens for determination from Ontario. It is the form listed by Dr. Dyar as calycanthata from the Kootenai district. Flies in May and June.

- P. Minerea, Guenée. More like *lunata* in appearance and often confused with it. It is more mottled, however, and differs structurally. An easy way to distinguish it is by the date; it flies in May, June and July and disappears before *lunata* comes on the scene. It is found throughout the eastern provinces and mingles with *norda*, which may be confused with it, in Ontario. Dr. Bethune redescribed it as *albofasciata*, a well marked male serving as type. It might be said that in this and the preceding species the males tend to bluish irrorations, especially in the terminal area.
- P. LUNIFERA, Hubner. This is a much slighter species than any of the preceding and of a more even gray tint. I have no actual Canadian records; but I have it from the States just south of the line, where it flies with the next species. It will almost certainly be found in Ontario.
- P. LINEOSA, Wlk. This has been confused with *lunifera* and resembles it very much. It is yet slighter, usually paler, and without contrasting maculation. I have it from points in Ontario, and from Winnipeg, Manitoba, June to August. It probably occurs throughout the Dominion east of the Mountains.
- P. UNILINEATA, Grote. A very characteristic species for which I have no definite Canadian records. It has been generally recorded from Canada and flies in early spring.
- P. Largera, Smith. Belongs to the series in which the wings are less trigonate and the undulating very oblique transverse lines are replaced by simpler more upright maculation. The types are from Vancouver Island, May 8th, collected by Rev. G. W. Taylor and sent in by Dr. Fletcher, (male) and Winnipeg, Manitoba, sent in by Dr. Barnes (female). These are the only examples of the species known to me.
- P. Duplicata, Bethune. A much smaller representative of the same series and a very distinct species. It was recorded from Port Hope, by Dr. Bethune, I believe.
- P. CINGULIFERA, Walker. I have no Canadian localities; but the species occurs in Maine and other New England States, so will almost certainly be found in the eastern provinces.

P. Horrida, Hubner. A common and well-known species which flies from May to August and occurs throughout the eastern provinces and westward, probably to the Mountains.

From the list of species heretofore credited to Canada P. calycanthata, Sm. and Ab., must be dropped. It is strictly a



southern species, and the identifications under that name of Canadian material are erroneous.

On the other hand it is more than probable that several other species will yet be found in the Dominion. These are obliqua, Gn., metata, Sm., curema, Sm., helata, Sm., squammularis, Dru., benesignata, Harv., and bethunei, Sm. One of the objects of this paper, indeed, is to call the attention of Canadian collectors to this genus and the work that yet remains to be done in it.

ADDITIONAL NOTES TO THE ABOVE PAPER.

By ARTHUR GIBSON.

As an addition to the above interesting paper by our honoured corresponding member, Dr. J. B. Smith, the following notes, made chiefly from specimens in the collection of insects

at the Central Experimental Farm, are presented.

PHÆOCYMA NORDA. Besides specimens from the type locality, Kaslo, B.C., there are in the collection of the Division of Entomology, specimens from Cartwright, Man. (Heath), and Ottawa (Young). The species has also been taken at Chelsea, Que. (Gibson).

P. CALYCANTHATA. In Dr. Fletcher's Entomological Record, 1904 (Rep. Ent. Soc. Ont. 1904), this species is recorded from Kaslo, B.C. As stated in Dr. Smith's paper this record

should now refer to the new species norda.

P. MINEREA. In the Entomological Record, 1906, (Rep. Ent. Soc. 1906), this species is recorded from White River, Hudson Bay Slope, June 2nd (W. J. Wilson). On further examination Dr. Smith could not confirm this identification, as the specimen was much rubbed and crushed, and might possibly be another closely allied species. The above record had, therefore, better be cancelled.

P. DUPLICATA. This species has been found at Digby, N.S., by Mr. John Russell. One specimen taken there on June 6th, is in the above collection. It has also been collected at Truro, in the same province, by Mr. L. A. DeWolfe. In the Entomological Record, 1904, a specimen of this moth is recorded as having been taken at Wellington, B.C., by Rev. G. W. Taylor. This specimen is the one referred to in Dr. Smith's paper under the name largera. Duplicata, therefore, must now be removed from the British Columbia list.

P. CINGULIFERA. This occurs at Ottawa. Last year several specimens were taken by Dr. Fletcher, and Mr. Young has also collected it. All the examples were taken in May. At Orillia,





Smith, John Bernhard. 1908. "Notes on the Species of Phaeocyma found in Canada." *The Ottawa naturalist* 22(7), 133–135.

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