

Pyrameis cardui were also observed, and a few specimens of *Utetheisa bella* were captured. The party returned to Cleveland much delighted with their day's outing, and separated to meet next year in Toronto.

ARCTIIDÆ vs. NOCTUIDÆ.

BY JOHN B. SMITH, WASHINGTON, D. C.

Mr. Grote takes occasion in CAN. ENT. vol. xx., p. 168, to criticise my reference of *Cerathosia* to the *Arctiidæ*, contending that it is a *Noctuid*. He complains that I do not give "the reason *why* it belongs to the family." This I hasten to supply, and must beg Mr. Grote's pardon for having presumed him conversant with the characters separating the two families. All authorities give for the *Noctuidæ* a furcate dorsal or internal vein of primaries, while the costal vein of secondaries is from the root, sometimes united with the sub-costal a short distance from base.

In the *Arctiidæ* on the contrary, the dorsal vein of the primaries is simple, while the costal of secondaries is not free, but springs from the sub-costal, a variable distance from base.

In these essential characters, used in all systematic works, my genus is *Arctiid* and *Lithosiid*. The only difference between the *Arctiidæ* and *Lithosiidæ* is in the absence of ocelli in the latter family. Mr. Grote seems never to have seen an unspread specimen of *Cerathosia*, else the striking habital resemblance to *Lithosia* could not not have escaped him.

Mr. Grote has sent to Entom. Amer. a criticism of my genus in a different form, which I have answered more at length.

Some months since, I sent a paper on *Cydosia* and *Cerathosia*, which have considerable resemblance in clypeal structure, to the Proceedings U. S. Natl. Museum, and this when printed will show that my genus is not at all abnormal where I have placed it.

As I can hardly expect to convince Mr. Grote if the specimen itself failed, I have sent an example to Mr. H. B. Moeschler, of Germany, and requested his determination of family, for publication.

It is scarcely worth while to deal with Mr. Grote's objections in detail. Not one or all of them, even were they *all* true, would militate against the *Arctiid* character of *Cerathosia*. I must confess that I consider the

venation and habitus *Lithosiid* rather than *Arctiid*, and would prefer so to place it, even despite the presence of ocelli.

Lest Mr. Grote consider me ignorant, I will say here that I am aware that there are some Noctuids which have the dorsal vein of primaries not distinctly furcate, and some where the costal of secondaries is united with the sub-costal a short distance from base, and thus appears to spring from it.

With this I leave *Cerathosia* to its fate. In my papers I have given *all* the characters, family and otherwise, and shall let each form his own judgment. It needs no more defence from me. In fact, I feel as though I owed an apology for answering objections, not a single one of which is vital.

Mr. Grote's characterizations in his series of papers on the *Bombycidae* are thoroughly superficial, none of the essential characters being emphasized, while some of them are absolutely incorrect—his definition of the *Lithosiinae* furnishes an example. He says unqualifiedly, "No accessory cell on primaries." Now, Von Heineman shows that in some genera it is present, while as a matter of fact some species of *Lithosia* have the cell (*cephalica*), while others have not. It is therefore not even a generic character in this group. To point out all the misleading and inaccurate statements, would necessitate criticising almost every paragraph of Mr. Grote's paper—a task I have neither time nor inclination for. In future I shall not reply to any criticisms Mr. Grote may make, save to admit their correctness where they are well founded.

POSTSCRIPT.—Since sending in the above, I have heard from Mr. Moeschler in regard to the specimens sent him. He writes me under date, Sept. 28th. :—"To-day I received the parcel containing the two moths. I have examined them, and there is no doubt you are right. This species belongs to the *Arctiidae*, as the costal nervule is not derived from the base of the hind wings, but from the discoidal cell; this characteristic separating the *Arctiidae* and *Lithosiidae* from the *Noctuidae*, which have this nervule derived from the base of the wing, only a little connected with the fore edge of the cell. I do not doubt this species is an *Arctiid*, near allied to *Deiopeia* and *Emydia*."

Under date Sept. 30th, Mr. Moeschler again wrote me :—"I received *Entomologica Americana* No. 6 to-day, and it was of great interest to me

to read yours and Mr. Grote's paper on *Cerathosia tricolor* Sm. If Mr. Grote had looked into Lederer's *Noctuinen Europa's* he could read, p. 2, 'sie (die *Noctuinen*) unterscheiden sich von den *Lithosiiden* (inclusive *Nola*, *Sarrothripa* u. *Nycteola*,) und *Arctiiden* durch die bei diesen aus der mitte oder zwei-drittel des vorderrandes der Mittelzelle entspringenden Rippe 8 der Hinterflügel.'

"Mr. Grote would have spared much pain to prove something not existing, by reasons which are not of any value, if he had remembered the only important characteristic separating the *Lithosiidæ* and *Arctiidæ* from the *Noctuidæ*. I am much surprised that so distinguished a writer as Mr. Grote can omit so important a characteristic; but the systematic position of the genera of the so-called *Zygenidæ*, in his New Check List, is sufficient to prove that Mr. Grote's systematic views are sometimes more than singular.

"Seeing the specimens of *C. tricolor*, my first thought must be: that is a Genus very allied to *Deiopeia* (*Utetheisa*) and *Emydia*, and I should have been much surprised if an exact examination had given another result."

CORRESPONDENCE.

Dear Sir: In reference to my note on the use of Creolin, I found subsequently discolorations on the leaves which did not appear to be either rust or mildew, but possibly were the result of the Creolin mixture. It is, however, probable that in this disinfectant we have a useful aid against insects as it seems to be avoided by cockroaches and ants, and probably woodwork might be preserved by it in greenhouses. I wished merely to draw attention to Creolin, so that those interested might try it; my own opportunities for doing so being very limited. The rose-bushes, of which I am very fond, seem on the whole no freer from insects in Europe than in America.

A. R. GROTE.

ARZAMA OBLIQUATA.

Dear Sir: In regard to Mr. Brehme's query, I may mention that all the *Arzama* larvæ and chrysalids taken here have been found in similar situations, but in no instance has there been the slightest indication that they fed there. The impression made by my observations is:—That the