

NOTES ON THE TERMINOLOGY OF THE
LEPIDOPTEROUS MALE GENITALIA

by WM. T. M. FORBES

DIAKONOFF (1954) has just published a paper intended to lead toward greater uniformity in the names of these organs. It seems to me that further consideration is called for, especially in the matter of the homologies of parts and the possibility of a resulting more consistent use for the names of the various organs. There are also a few incidental points I should like to emphasize.

Firstly, he has not considered the first published use of two of the names, which he credits to much later authors. Both are defined in HÜBNER'S *Lepidopterologische Beiträge*, p. 26, reprinted as p. 544 of HEMMING'S *Hübner*. So *tegumen* (as *tegmen*) must be Hübner 1820, not Pierce 1909, and *valvæ* must be Hübner 1820 instead of Rambur 1842. Incidentally the Rambur paper is no longer as extremely rare as it has been, for it was reprinted in 1942 by the Instituto Español de Entomología, letter for letter, and with half-tone reproductions of the plates, including pl. 8, which has the genitalic figures.

I submit that DIAKONOFF also has "failed to discriminate between the main parts" when he proposes to use a single term, *fultura penis*, for "the sclerites and their apophyses of the *diaphragma*",—for this includes body-wall sclerites (*juxta* and *transtilla*) and structures belonging to the genitalia proper (*anellus* and *ædœagus* or *penis*). Likewise a single term for the structures on the inner face of the valve, where *digitus* and *editum* belong to the costa of the valve proper (coxite), *clavus* is a totally separate organ, with a movable articulation in the Agrotinæ and many Plusiinae, and *ampulla* and *harpé* in his sense belong to the second segment (presumably the *stylus*), with separate musculature. *Pollex*, however, is a vague geographical term, which appears to be either the clasper (*harpé* in the restricted sense) or a process of the outer portion of the valve,—in *Euxoa* apparently a fusion of both. He does not cite my own paper (Forbes 1939), which I believe makes some of these points clear. My own interpretation has been presented in part iii (Noctuidæ) of the *Lepidoptera of New York*; the figure in part i is partly mislabeled, as I did not realize then that the *digitus* has nothing to do with the clasper assembly (*stylus*).

DIAKONOFF also fails to cite TORRE BUENO'S *Glossary of Entomology*, with pls. 2 and 3 by RICHARDS; which also was intended to promote uniformity of names.

I personally feel that a uniform division of basic names, all in Latin or Greek, and names for use in smaller groups, all in the vernacular, is not practical, in particular that the term *harpé* has become completely ambiguous in use and should be dropped; in this case we have no inclusive Latin name for the structures derived from the *stylus*. In my belief it is too early to make

a sharp separation of terms for use in a single group and those of wider application, we must propose terms as we need them and often leave it to future morphologists to figure out how wide are the homologies involved. In fact the clasper assembly (chiefly *stylus*) is a beautiful example. We know it is present in a great many families of Lepidoptera, and can be identified by its distinctive muscle, but we do not yet know whether its various parts (*ampulla*, clasper proper, basal sclerite) can really be homologized beyond the family Noctuidæ; I merely have a notion that the *ampulla*, with its tuft of sensory setæ, will be found wide-spread.

I should myself **not** make an exception of the *caulis* of OBRAZTSOV, since I see in it merely an amorphous extension of the ventral side of the anellus, independently developed in the widely separated Tortricidæ, Notodontidæ, and Lasiocampidæ. To me it reflects a physiological peculiarity,—a different manner of moving the *ædoæagus*.

I do not think we can leave morphological terms out of consideration, especially when we are looking into the hope for uniformity. It is just then that we must ask if there is not some unambiguous morphological term that may take the place of several ambiguous ones. We should consider whether to substitute "*cercus*" for "upper organ" of some orders, or for "*socius*" in the Lepidoptera, but in this particular case we must move with caution, for some entomologists will not admit this organ is the *cercus*, which they would limit to the lower insects.

References

- Diakonoff, A., 1954. Considerations on the terminology of the genitalia in Lepidoptera. *Lepid. News* 8: 67-74, 2 figs.
Forbes, Wm. T. M., 1939. The muscles of the lepidopterous male genitalia. *Annals Ent. Soc. Amer.* 32: 1-10, 5 figs.

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AUSTIN HOBART CLARK

American lepidopterology has lost one of its most distinguished specialists with the passing on 28 October of AUSTIN HOBART CLARK. Mr. CLARK was 73 years old and had considerably outlived physicians' expectations after a serious illness. The hundreds of his personal friends among entomologists include several lepidopterists whose introduction to Lepidoptera came primarily through him. An extensive biography of this wonderfully kind and inspiring man will appear in an early issue of the *News*.