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On the metamorphosis of Prosopistoma

M.A. Vayssi re

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Note to Dr. C. A. White's Paper. By R. ELLSWORTH CALL.

In Dr. C. A. White's interesting communication "On the Antiquity of certain Subordinate Types of Freshwater and Land Mollusca," occur two slight errors which may be misleading to future students pursuing the same line of research. On p. 250 he lists seven species of fossil Unionidæ from the Laramie strata of Wyoming and Utah, together with a second series of seven recent *Uniones* "as their respective congeners." Congeneric with the *U. Couesi*, White, is written *Unio complanatus*, Solander. Since the Doctor gives a list of Unionidæ inhabiting the "waters of the Mississippi basin" as congeneric with the fossil forms, *U. complanatus*, Sol., is out of place in such a list, being an inhabitant solely of the Atlantic slope, together with the numerous other species of which it is a type. This species is *not* found west of the Alleghanies. This fact is important in the matter of the geographical distribution of the recent Unionidæ. A slight error in the determination, or the nomenclature, of the species placed as congeneric with *U. Endlichi*, White, occurs. Dr. White evidently means *Unio gibbosus*, Barnes. *Unio gibbus* was described by Spengler in 'Skriver af Naturhistorisk Selskabet,' vol. iii. (1792); and the habitat given is Tranquebar.—*Amer. Journ. Sci.* August 1880, p. 158.

Dexter, Iowa, July 6, 1880.

On the Metamorphosis of Prosopistoma. By M. A. VAYSSIÈRE.

In August 1878 I had the honour of presenting to the Academy, in conjunction with Dr. E. Joly, a note on the organization of *Prosopistoma punctifrons*. We had at our disposal for the investigation, of which we published a summary, a considerable number of living specimens; and nevertheless we were unable to observe any transformation in these curious insects. We were thus led to adopt the opinion of Mr. M'Lachlan, and to assume with him that *Prosopistoma* is only an Ephemerine adapted to a permanent aquatic existence. Our anatomical observations, and more especially those relating to the considerable concentration of the nervous system, seemed to confirm this hypothesis.

It must, however, be decidedly rejected, as on the 3rd of June I was able to witness the metamorphosis of two *Prosopistomas* captured in the Rhone near Avignon in April last.

The following are the principal phases of this metamorphosis. Towards the end of last month (May) the amber-yellow colour of some of the insects which I kept in captivity became darkened; I could then soon perceive through the skin the first lineaments of the new individual; and two or three days afterwards the animal cast off its nymphal envelope. To free itself from this the insect employs the same processes as the other Ephemerine types.

In the perfect state *Prosopistoma* very exactly resembles *Cænis*, and consequently belongs definitely and indisputably to the family Ephemerinæ; its last segment is furnished with three rudimentary setæ, representing the natatory setæ which it possesses in its aquatic states. The anatomical modifications superinduced by this metamorphosis will be studied hereafter in a complete monograph of this genus.—*Comptes Rendus*, June 7, 1880, p. 1370.