

Musculature of the sucking Pump of *Argina cribraria* Clerck

(*Lepidoptera: Hypsidae*)

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(With 2 textfigures)

The present paper deals with the extrinsic muscles of the sucking pump of *Argina cribraria* CLERCK which is a serious pest of sannhemp in India. The pump although chiefly consisting of cibarium, does incorporate a portion of the stomodaeum, so as to assume a composite nature.

Median dorsal dilator of the stomodaeum (Fig. 1; No. 1)

This unpaired muscle arises on the dorso-median area of the frontoclypeus, and is inserted dorsally at the junction of the sucking pump with the

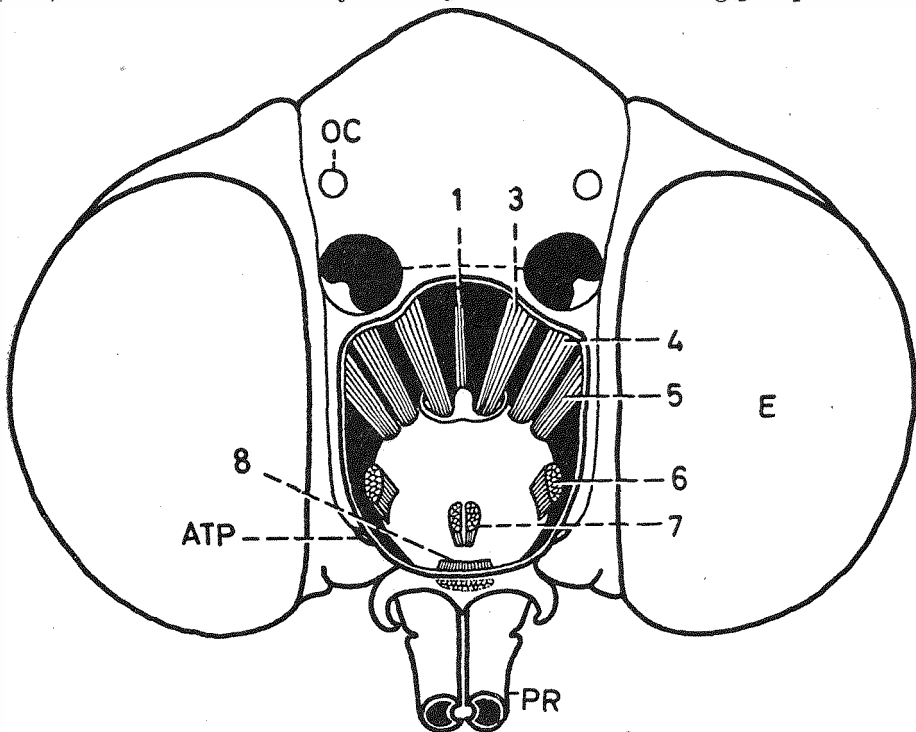


Fig. 1. *Argina cribraria* CLERCK. Anterior view of head with greater part of frontoclypeus cut away to expose the pump.

ATP, anterior tentorial pit; E, eye; OC, ocellus; PR, proboscis

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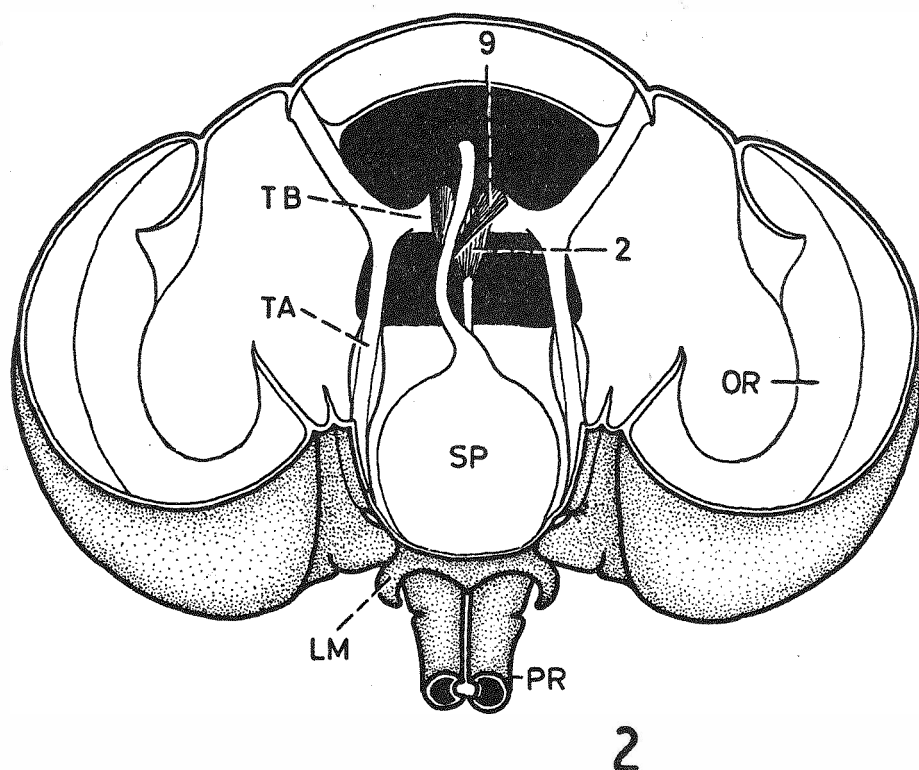


Fig. 2. *Argina cribraria* CLERCK. Inside view of head with greater part of the anterodorsal area cut away obliquely.

LM, labrum; OR, ocular ridge; PR, proboscis; SP, sucking pump; TA, tentorial arm; TB, tentorial bridge

tubular part of the stomodaeum. Along with the median ventral dilator of the stomodaeum, it serves to regulate the flow of food from the sucking pump into the stomodaeum, and appears homologous with the 'pharyngeal dilator' of *Pieris brassicae* (EASTHAM & EASSA, 1955).

Median ventral dilator of the stomodaeum (Fig. 2; No. 2)

This unpaired muscle arises on the tentorial bridge and is inserted ventrally through a long tendon at the junction of the sucking pump with the tubular part of the stomodaeum. This muscle has not so far been recorded in Lepidoptera. ALAM (1951) in *Stenobracon deesae* CAMERON reports a similar muscle and calls it 'second ventral dilator of the anterior pharynx'.

Dorso-lateral dilator of the stomodaeum (Fig. 1; No. 3)

This muscle arises on the dorso-lateral region of the frontoclypeus and is inserted on the corresponding part of the sucking pump, behind the frontal ganglion (Fig. 1; FRG). The present writer (1961) has recorded a similar muscle, 'second stomodaeal dilator', in *Papilio demoleus* L.

First postero-lateral dilator of the cibarium (Fig. 1; No. 4)

It arises on the dorso-lateral area of the frontoclypeus and is inserted on the dorsal wall of the sucking pump, anterior to the frontal ganglion. A similar muscle has been shown by the present writer (1961) to occur in *P. demoleus* L.

Second postero-lateral dilator of the cibarium (Fig. 1; No. 5)

It arises just anterior to the first postero-lateral dilator of the cibarium and is, likewise, inserted on the sucking pump. It is homologous with the similarly labelled muscle of *P. demoleus* L. (ZAKA-UR-RAB, 1961).

Antero-lateral dilator of the cibarium (Fig. 1; No. 6)

This short muscle arises on the antero-lateral aspect of the frontoclypeus and is, similarly, inserted on the dorsal wall of the sucking pump.

Antero-median dilator of the cibarium (Fig. 1; No. 7)

This short muscle arises on the antero-median aspect of the frontoclypeus and is inserted on the corresponding region of the dorsal wall of the sucking pump. It is homologous with the 'first antero-median dilator of cibarium' of *P. demoleus* L. (ZAKA-UR-RAB, 1961).

Labral compressor (Fig. 1; No. 8)

This unpaired muscle arises on the dorsal wall of the labrum and is inserted on its ventral wall near the latter's junction with the dorsal wall of the sucking pump. It corresponds to the similarly labelled muscle of *P. demoleus* L. (ZAKA-UR-RAB, 1961), and serves to regulate flow of food from the proboscis into the sucking pump.

In addition to the above described muscles which are associated with the sucking pump, a paired muscle has been observed arising on the lateral part of the tentorial bridge and inserting on the ventro-lateral aspect of the tubular part of the stomodaeum. Such a muscle has not been recorded earlier in Lepidoptera. ALAM (1951), however, in the braconid *S. deesae* CAMERON records a similar muscle and calls it 'first ventral dilator of the anterior pharynx'. It is proposed to call this muscle in *Argina cribraria* CLERCK as ventro-lateral dilator of the stomodaeum' (Fig. 2; No. 9).

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Summary

The musculature of the sucking pump of *Argina cribraria* CLERCK is described. Two muscles, viz., Median ventral dilator of the stomodaeum and Ventro-lateral dilator of the stomodaeum, are recorded for the first time in *Lepidoptera*.

Zusammenfassung

Die Muskulatur der Saugpumpe von *Argina cribraria* CLERCK wird beschrieben. Zwei Muskelzüge, nämlich der medio-ventrale Dilator des Stomodaeum und der ventro-laterale Dilator des Stomodaeum werden erstmals für die Lepidopteren nachgewiesen.

Резюме

Описывается мускулатура всасывающего насоса *Argina cribraria* CLERCK. Впервые указывается на две мышцы чешуекрылых — медио-вентральный дилатор и вентро-латеральный дилатор стомодеума.

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A Redescription of *Tephritis zonogastra* Bezzi, 1913

(Diptera: Trypetidae)

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(With 5 textfigures)

Tephritis zonogastra was first described by BEZZI in 1913, and the description was based upon a single specimen from Puri (Orissa) collected in 1908. This description is rather insufficient and it is not clear if the specimen was a male or a female. The holotype which was deposited in the Indian Museum, is unfortunately not traceable. MUNRO (1947) further augmented the description, basing his study on a male specimen collected from Mussoorie (N. India) in 1927. The present author is fortunate in having in his collection two males and a female of *T. zonogastra*, and the following redescription is based upon them.

Tephritis zonogastra BEZZI

Female: Body 4.75 mm long; ovicape 1.0 mm long, approximately as long as three preceding abdominal segments; wing 3.5 mm long, about twice as long as wide. Head: about $1\frac{1}{4}$ times as long as maximum width of eye, $\frac{3}{4}$ times as long as wide, and 2.37 times as wide as frons; head and its appendages yellow, ocellar triangle bronze; upper half of posterior surface of head bronze, leaving a yellow marginal band containing the postocular row of bristles; antennae yellow, arista brownish yellow; 3rd antennal segment twice as long as second, apically gently curving upwards;

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