

Synanthropic Diptera of the Fauna of the USSR.  
By A. A. Stackelberg.

Page 97-123: Key to 3rd-instar larvae of the most important synanthropic Diptera.

- 1 (4) Head capsule completely developed, sclerotized. Inner skeleton of head not developed (fig.77).  
2 (3) Segments of thorax and abdomen distinctly subdivided into secondary rings which are usually 2 on each of the thoracic segments and on the anterior segments of the abdomen, and 3 on the remaining segments (fig.77,A); the secondary segments (all or only part of them) have a narrow transverse sclerotized platelet on the dorsal aspect. Spiracles present only on the prothorax and on the posterior end of the body

Psychodidae

The larvae feed in sewage conduits and pits, in the surface film on greatly polluted water, and the like.

- 3 (2) Body segments not subdivided into secondary rings (fig. 77,B); sclerotized platelets absent at least on the thoracic segments. Spiracles present not only on the prothorax and posterior end of the body but also on the 1st to the 7th abdominal segments. Surface of body beset with short coarse hairs

Scatopsidae

Larvae in masses of semi-fluid rotting substances, in manure, in heavily polluted water, etc.

- 4 (1) Sclerotized head capsule not developed. Internal skeleton of the head (the oropharyngeal apparatus) always developed.  
5 (6) Posterior end of body with a long slender breathing tube, when retracted nearly equal to the length of the body of the larva, when protracted considerably exceeding it (fig.78). Large larvae (as much as 24 mm)

Eristalis tenax L.

(and other spp. of Eristalis)

In stagnant water, in lavatories, in liquid manure, in drainage pits, pig manure, etc.

- 6 (5) No long slender breathing tube on the posterior end of the body.

- 7 (8) Posterior end of body with a short sclerotized tube on the end of which are situated the posterior spiracles. The last three segments with large lateral conical processes (fig.79). Body with short hairs. 10-12 mm.

Syritta pipiens L.

In drainage and garbage pits, <sup>more</sup> rarely in manure (pig, horse, etc.)

- 8 (7) Breathing tubes on the posterior end of the body, bearing the posterior spiracles, two in number or absent (the posterior spiracles lying on the very body [or in the very flesh] of the segment. The last body segments without lateral conical processes

Stackelberg 1956

8th segment and above them, with round pits. Spinules in front of the anal platelet small, more or less of the same size, assembled by 3-5 in short transverse rows Parasarcophaga parkeri Rohd.

In carcasses of insects and small vertebrates, more rarely in feces.

- 23 (22) Spinules in the lateral parts of the 8th abdominal segment absent. Cuticle under the cone-like processes of the 8th segment wrinkled. Spinules in front of the anal platelet small, assembled in short rows; among them there is a certain number of larger spinules Parasarcophaga jacobsoni Rohd.  
In carcasses of insects, feces (on the ground), more rarely in rotting meat.
- 24 (19) 2nd thoracic segment dorsally solidly or nearly solidly covered with small spinules. Dorsal and lateral aspects of 8th and 9th segments solidly covered by spinules.
- 25 (26) Dorsal processes of the 8th abdominal segment of nearly the same size as the dorso-lateral processes (fig. 81, B). 8th segment below the ventral and subventral processes coarsely rugose. 2nd thoracic segment dorsally in the posterior part and along the median line without spinules  
In feces, in pig manure, in drainage pits, laboratories, more rarely in carcasses of animals and rotting meat products. Coprosarcophaga haemorrhoidalis Fln.
- 26 (25) Dorsal processes of the 8th segment smaller than the dorso-lateral processes. 8th segment solidly [covered] with spinules. 2nd thoracic segment dorsally with spinules Bellieria melanura Mg.  
In feces (on the ground), in drainage pits, lavatories and the like.
- 27 (16) 8th abdominal segment on the posterior surface [or aspect] without a median round depression (pit).
- 28 (39) Posterior spiracles situated on the apex of sleeve-like, club-like, cone-like, or cylindrical processes (fig. 82,  $\Gamma$ ,  $\Gamma_1$ ). The cone-like processes on the 8th segment not more than 8. Ventral processes of the pharyngeal sclerites longer than their dorsal processes, narrowly or broadly lancet-like.

Fig. 81. 3rd-instar larvae of Coprosarcophaga haemorrhoidalis Fln. From Zimin.  
A - oropharyngeal apparatus;  $\bar{B}$  - anterior spiracle; B - posterior end of body from behind; B-1 - posterior end of body from the side;  $\Gamma$ -1 - spinules of dorsal aspect of 8th abdominal segment;  $\Gamma$ -2 - spinules of the ridge surrounding the depression of the 8th abdominal segment;  $\bar{A}$  - sculpture of the middle part of the dorsal aspect of the 2nd thoracic segment; E - anal platelet;  $\bar{H}$  - spines of anterior margin of 6th and posterior margin of 5th abdominal segments (1 = 6th segment, 2 = 5th segment).

Fig. 82. 3rd-instar larva of Desmometopa tarsalis F. From Zimin.  
A - oropharyngeal apparatus;  $\bar{B}$  - anterior spiracle; B - posterior spiracle;  $\Gamma$  - posterior end of body from behind;  $\bar{\Gamma}_1$  - posterior end of body from the side;  $\bar{H}$  - spines of anterior margin of 6th (1) and posterior margin of 5th (2) abdominal segments below.

Fig. 83. 3rd-instar larva of Phoridae. From Zimin.  
A - oropharyngeal apparatus;  $\bar{B}$  - posterior end of body from behind;  $\bar{B}$ -1 - the same from the side.

- 29 (30) Posterior spiracles with long branched hairs on the margins (fig.82). Cone-like processes of the 8th abdominal segment restricted to the upper part of the segment (above the posterior spiracles). Body slender, long, with a sharpened posterior end  
 Drainage pits, garbage pits, lavatories, more rarely animal manure. Desmometopa tarsalis F.
- 30 (29) Posterior spiracles without long hairs on the margin. Cone-like processes of the 8th segment situated either more or less like a ring around the posterior spiracles, or restricted to the lower half of the segment.
- 31 (32) Cone-like processes of the 8th segment restricted to its lower half (under the posterior spiracles); only 2 short processes (fig.83, B) are situated above the spiracles. The pharyngeal sclerites in the anterior part very wide, hypostomal sclerites narrow (fig. 83, A)  
 In carcasses of insects, in decomposing substances of both plant and animal origin, etc. Phoridae
- 32 (31) Cone-like processes of the 8th segment situated more or less like a ring.
- 33 (34) 8th abdominal segment with 12 processes on the posterior aspect, with a "sleeve-like" process in the middle, bearing spinules on the whole surface and 2 cylindrical tubes on the end (fig. 84, Γ)  
 In rotting fruits, fermenting substances of plant origin, in wine cellars, at vinegar factories, etc. Drosophila fasciata Mg.
- 34 (33) Posterior aspect of 8th segment with 6 cone-like processes.
- 35 (36) Posterior spiracles situated on long "sleeve-like" processes (fig.85, Γ). 8th and 9th abdominal segments with many spinules  
 The larvae of most spp., feed in drainage pits, manure and the like. Sepsidae
- 36 (35) Posterior spiracles situated on short processes (fig.86, B). 8th and 9th abdominal segments without many spinules.
- 37 (38) Anterior spiracles with 8-12 finger-like processes. Cushion-like transverse calluses of the abdominal segments with 3 rows of small spinules  
 Fresh, salted, and smoked fish, ham, cheese, lard, etc. Piophilha casei L.
- 38 (37) Anterior spiracles with 4-6 finger-like processes. Cushion-like transverse calluses of the abdominal segments with 6 rows of small spinules  
 Drainage pits, feces, carcasses of animals, etc. Piophilha vulgaris Flin.
- 39 (28) Posterior spiracles hardly raised above the surface of the 8th abdominal segment; the latter with 12 cone-like processes around the spiracles. Ventral processes of the pharyngeal sclerites shorter than the dorsal with a sharp