

and delimitation of *Aedes* and *Ochlerotatus*, see Reinert (2000c). Of the European mosquito species, members of the subgenera *Finlaya*, *Ochlerotatus* and *Rusticoides* are included in *Ochlerotatus*, all of which belong to Sect. 10.1.

10.2.1 Subgenus *Finlaya* Theobald

The subgenus comprises medium to large species. The length of the palps in the females ranges from very short to 2/3 the length of the proboscis. The head has a mixture of narrow and broad scales, with erect forked scales on the vertex and occiput. The scutum has prominent white and dark scale patterns and variable setation, the dark scales are black or have a metallic tinge. The pleurites have patterns of white scales, and are more extensively scaled in females than in males. The mesepimeral setae are sometimes absent. White knee spots are present, and all tarsomeres are dark. The wing veins are covered with dark scales. The abdominal terga have more or less distinct lateral white patches, sometimes with white basal bands, and the cerci are short and blunt. The length of the male palps varies from half the length of the proboscis to much longer than it. Tergum IX has well developed lobes and more or less spine-like setae. The hypopygium has an elongated gonocoxite, without distinct basal or apical lobes but defined fields of setation. The gonostylus is long and slender, and the claspette is divided into a stem and a filament of different shapes. The paraproct is usually heavily sclerotized, and the aedeagus is pear shaped. The head of the larva is rounded, and the antenna is usually shorter than the head, with a single antennal seta (1-A). The frontal setae (5-C to 7-C) are single or may have 2 branches. The abdominal segments are usually covered with stellate setae. The comb scales are large and arranged in a single row. The saddle does not encircle the anal segment, and precratal tufts are present. The ventral and dorsal anal papillae are of different sizes.

The subgenus with its nearly 200 species is one of the largest in the genus *Ochlerotatus*. It is mainly distributed in Asia, Australia, and Africa. It is a polymorphic subgenus of which a species of North and South America has been revised and placed in other subgenera (Zavortink 1972). It is doubtful whether the two

European species, *Oc. echinus* and *Oc. geniculatus*, really belong to *Finlaya*.

***Ochlerotatus (Finlaya) echinus* Edwards 1920** **[*Dahlia* *echinus*]**

Female: Closely related to *Oc. geniculatus* with a similar morphology in all stages. The female of *Oc. echinus* differs from that of *Oc. geniculatus* by the patterns of scaling on the head, thorax, abdomen and legs. The proboscis and palps are dark scaled, the head has black setae, the scales on the vertex are dark and with lateral white patches, and there is no white scale border around the eyes. The scutum has two dorsocentral stripes of narrow dark bronze scales divided by a creamy white acrostichal stripe. The supraalar dark scale patch is nearly fused with the dorsocentral stripes. The scutellum has broad whitish scales. The postpronotal scales are whitish, and the mesepisternum and mesepimeron have patches of creamy scales, distinct against the dark integument. The femora have a white ventral stripe and white knee spot. The tibiae and tarsomeres are entirely black scaled. The wings have rather narrow blackish scales. The abdominal terga are dark scaled with narrow white basal bands, sometimes interrupted in the middle from tergum V on, and on all segments extended laterally into triangular whitish patches. Abdominal segment VIII is broad, and the cerci are short and rounded.

Male (Fig. 10.16): The general shape of the hypopygium is similar to that of *Oc. geniculatus* except for the denser setation of the gonocoxite toward the tip. The claspette stem has a stout seta near the middle and some thin setae at the base, and the claspette filament is hook-like.

Larva: The antenna is more than half as long as the head (longer than in *Oc. geniculatus*), smooth and is not covered with spicules. The antennal seta (1-A) is single (Fig. 8.58a). The inner frontal seta (5-C) is single, the median frontal seta (6-C) is single or double and the outer frontal seta (7-C) usually has 2–4 branches. Branches of the stellate setae on abdominal segment I are longer than the length of the segment (Fig. 8.59a). The number of comb scales is 11–18, arranged in one row. Each scale is elongated with lateral spines, and a prominent median spine is absent. The siphonal index is 2.5–3.6, and the acus is well

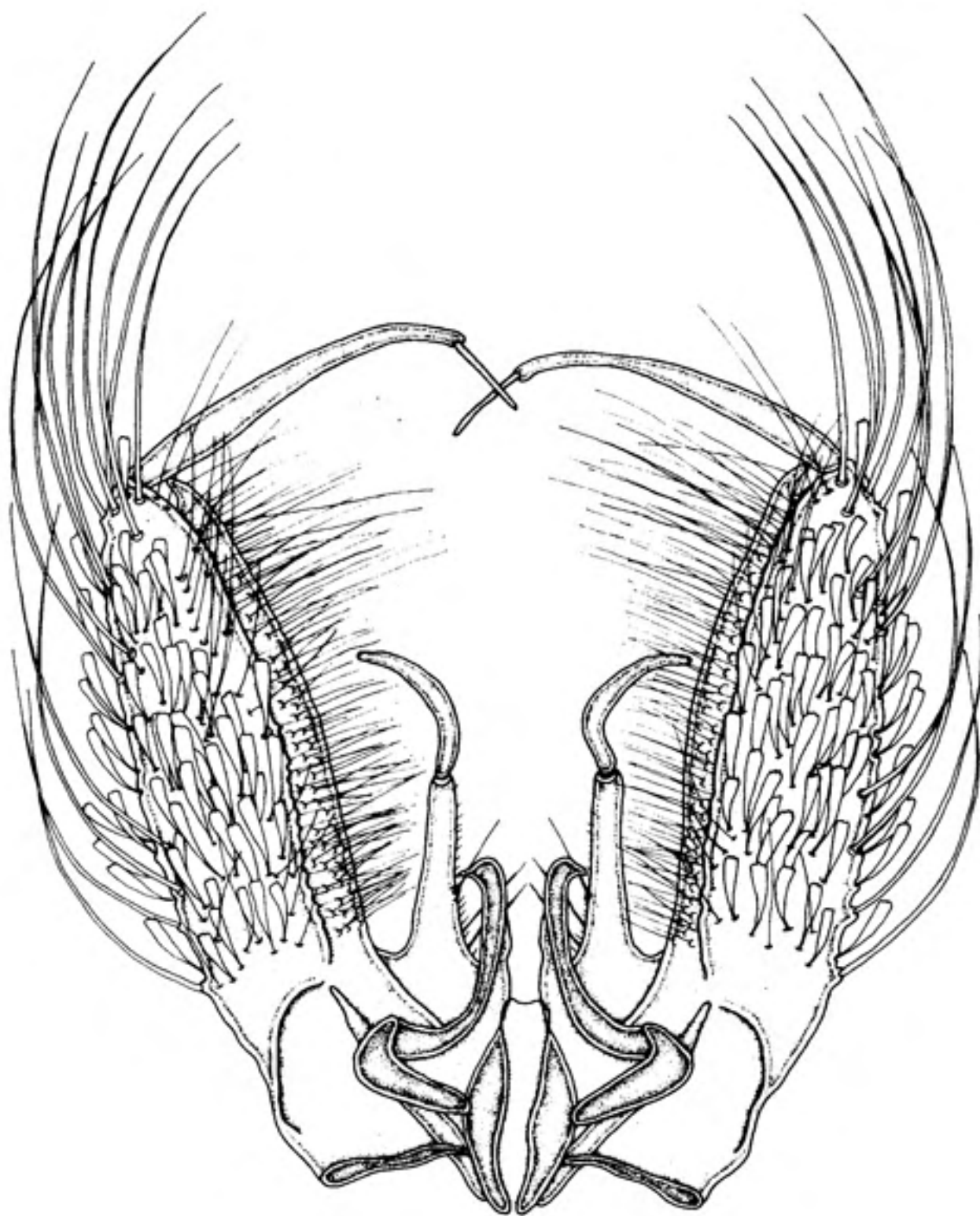


Fig. 10.16 Hypopygium of *Oc. echinus*

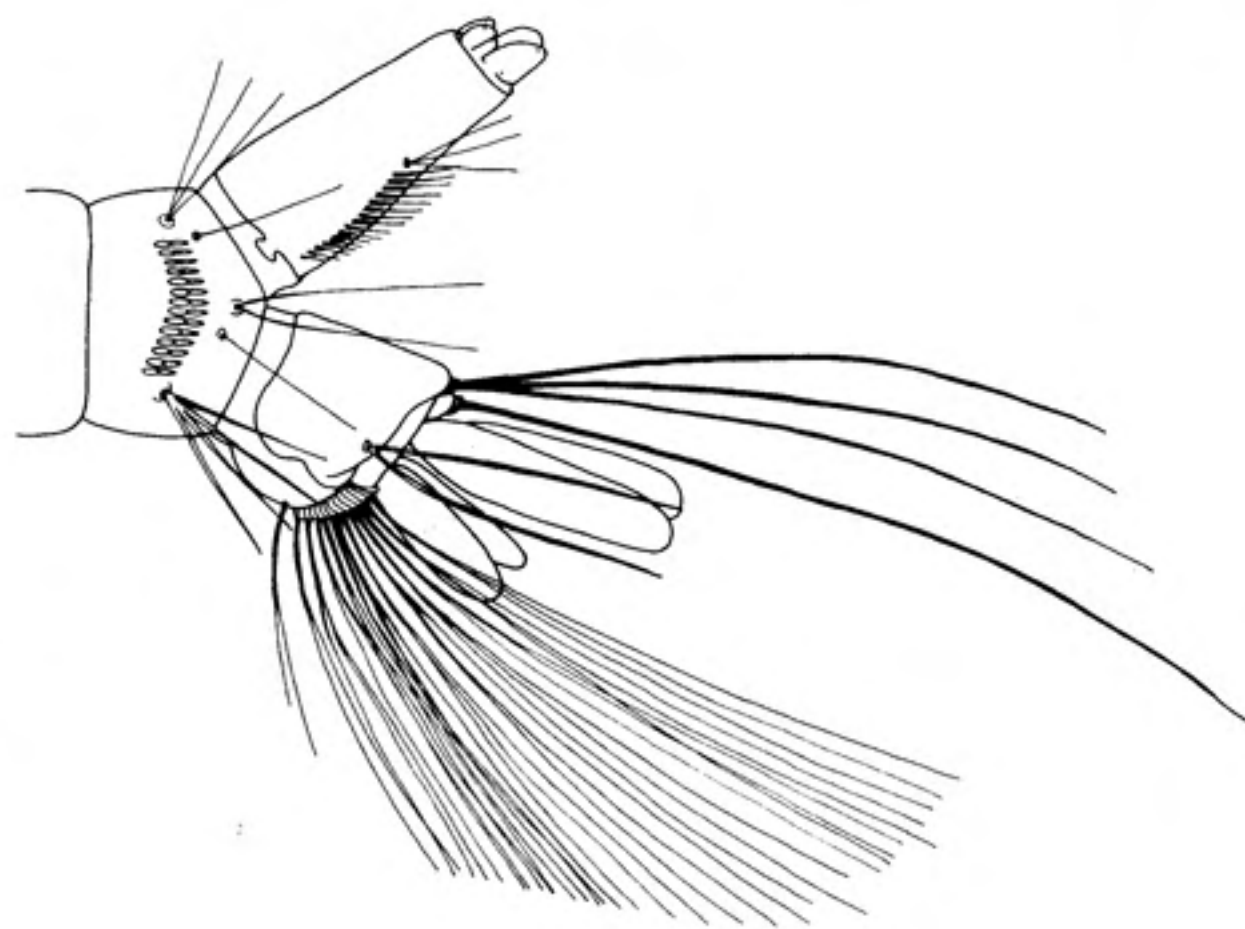


Fig. 10.17 Larva of *Oc. echinus*

of *Oc. geniculatus* also apply to *Oc. echinus*. As the types of most of the synonymous species of *Oc. geniculatus* are lost, apparent synonymy to *Oc. echinus* is not resolved. From Madeira and the Canary Islands another species within the subgenus *Finlaya*, *Oc. eatoni* Edwards, has been reported (Knight and Stone 1977).

developed (Fig. 10.17). The pecten has 15–27 teeth and occupies at least the basal half of the siphon, each tooth is very long and spine-like. The siphonal tuft (1-S) is inserted beyond the middle of the siphon, with 2–4 branches. The anal segment is not entirely encircled by the saddle, and 1–2 precratal tufts (4-X) are present. The anal papillae are broad and long, and the dorsal pair is twice as long as the ventral pair.

Biology: Larvae have been found in the same habitats as *Oc. geniculatus*. In Anatolia and Bulgaria they may also occur in root holes of olive trees. Not much is known of the biology of the larvae, they are supposed to feed on microorganisms in the tree-holes in the same way as the larvae of *Oc. geniculatus* do. In Portugal, larvae and adults were found in August and September (Ribeiro et al. 1988).

Distribution: In Europe this species is confined to the Mediterranean region and has been reported in Portugal, Italy, Greece, and Bulgaria where it has been found in abundance along the Black Sea coast.

Note on systematics: Edwards (1920) originally placed this species in the subgenus *Ochlerotatus* and transferred it to *Finlaya* later (Edwards 1932). The same considerations regarding the subgenus affiliation

***Ochlerotatus (Finlaya) geniculatus* (Olivier 1791)** **[*Dahlia* geniculata]**

Female: Dark scales with a violet tinge especially on the abdomen, the white and blackish pattern of the scutum, the conspicuous white knee spots and the blunt cerci immediately distinguish the females from all other females of the genus *Ochlerotatus* except the closely related *Oc. echinus*. The proboscis and palps are black scaled, and the vertex is dark with a median light stripe and a narrow band of whitish scales around the eyes. The scutum has two dorsocentral black stripes which sometimes fuse into one anteriorly, or are otherwise completely separated by a pale acrostichal stripe. The submedian and lateral areas of the scutum have creamy or silvery grey scales. Dark anterior and posterior submedian stripes are present, and the scutellum has narrow yellowish scales. The pleurites have patches of broad, whitish scales. The legs are dark, the femora have a white knee spot, and the tibiae and tarsomeres are entirely black scaled. The fore and mid claws have a subbasal tooth. The wing veins are covered with dark brownish scales. The abdominal terga are black scaled with conspicuous white triangular lateral patches on