## *Ochlerotatus* (*Ochlerotatus*) *sticticus* (Meigen 1838)

**Female**: A medium sized species, with the proboscis and palps dark scaled. The pedicel has pale scales on its median part, and flagellomere I is yellowish at the base. Flagellomeres I–III are of the same length as the others. The vertex is predominantly covered with pale yellowish scales, and the occiput with pale erect forked scales. The scutum has a dark, median longitudinal stripe sometimes separated by a narrow acrostichal stripe of pale scales. The lateral parts of the scutum are pale yellowish scaled, and the posterior submedian stripe is reddish to dark brown. The upper part of the postpronotum has dark scales, and the lower third is mostly pale scaled. The postprocoxal membrane is without scales, and a hypostigmal patch is absent. The subspiracular and postspiracular scale patches are well developed. The mesepisternum has greyish white scales, and the upper mesepisternal patch extends to near the anterior angle, narrowly separated from the prealar patch. The mesepimeral patch of scales ends distinctly above the lower margin of the mesepimeron, and the lower mesepimeral setae are absent. The tibiae and tarsi are dark scaled dorsally and mostly pale scaled ventrally, and tarsomeres V of all the legs are mostly dark scaled. The tarsal claws are moderately and evenly curved, each with a small subbasal tooth. The wing veins are usually entirely dark scaled, occassionally some isolated pale scales may be present at the base of the costa (C). The abdominal terga are dark scaled, terga II–IV with pale basal bands distinctly constricted in the middle, and on the following terga the basal bands are interrupted forming triangular pale patches at the lateral sides (Fig. 6.50a).

**Male** (Fig. 10.79): The basal lobe of the gonocoxite is constricted at its base, the apical part is slender and not attached to the gonocoxite, and is more or less crescent shaped (Fig. 7.48a). The lobe is densely covered with short setae and a rather large and prominent spine, which is curved apically and located at the constricted base. The apical lobe is well developed, gradually arising from the gonocoxite, apically rounded, and covered with short setae. The gonostylus is slightly expanded in the middle, with several small setae close to the apex. The apical spine of the gonostylus is long and slender. The paraproct is strongly sclerotized, inwardly curved and pointed at its apex. The claspette stem is short and straight, and the filament is short,

**Fig. 10.79** Hypopygium of *Oc. sticticus*

about half as long as the stem, with a small bilateral wing. The wing abruptly expands close to the base of the filament, and more or less gradually tapers towards the apex. The aedeagus is pear shaped.

**Larva**: The antenna is nearly half as long as the head, covered with less numerous, but prominent, coarse spicules. The antennal seta (1-A) is inserted slightly below the middle of the antennal shaft, with 4–5 branches not reaching the tip. The postclypeal seta (4-C) is small, and situated between the median frontal setae (6-C), with 1–4 short branches. The inner frontal seta (5-C) has 2–4 branches, the median frontal seta (6-C) is usually 2-branched, and the outer frontal seta (7-C) usually has 5 branches. The number of comb scales is 18–27 arranged in 2–3 irregular rows (Fig. 10.80). Each individual scale has a median spine 1.5 times the length of the subapical spines. The siphon is straight, gradually tapering towards the apex, and the siphonal index is 2.5–3.0. The pecten teeth are more or less evenly spaced extending beyond the middle of the siphon, and the siphonal tuft (1-S) is inserted beyond the pecten, with 4–6 branches not exceeding the width of the siphon at the point of insertion. The saddle extends far down the sides of the anal segment, and the saddle seta (1-X) is single and shorter than the

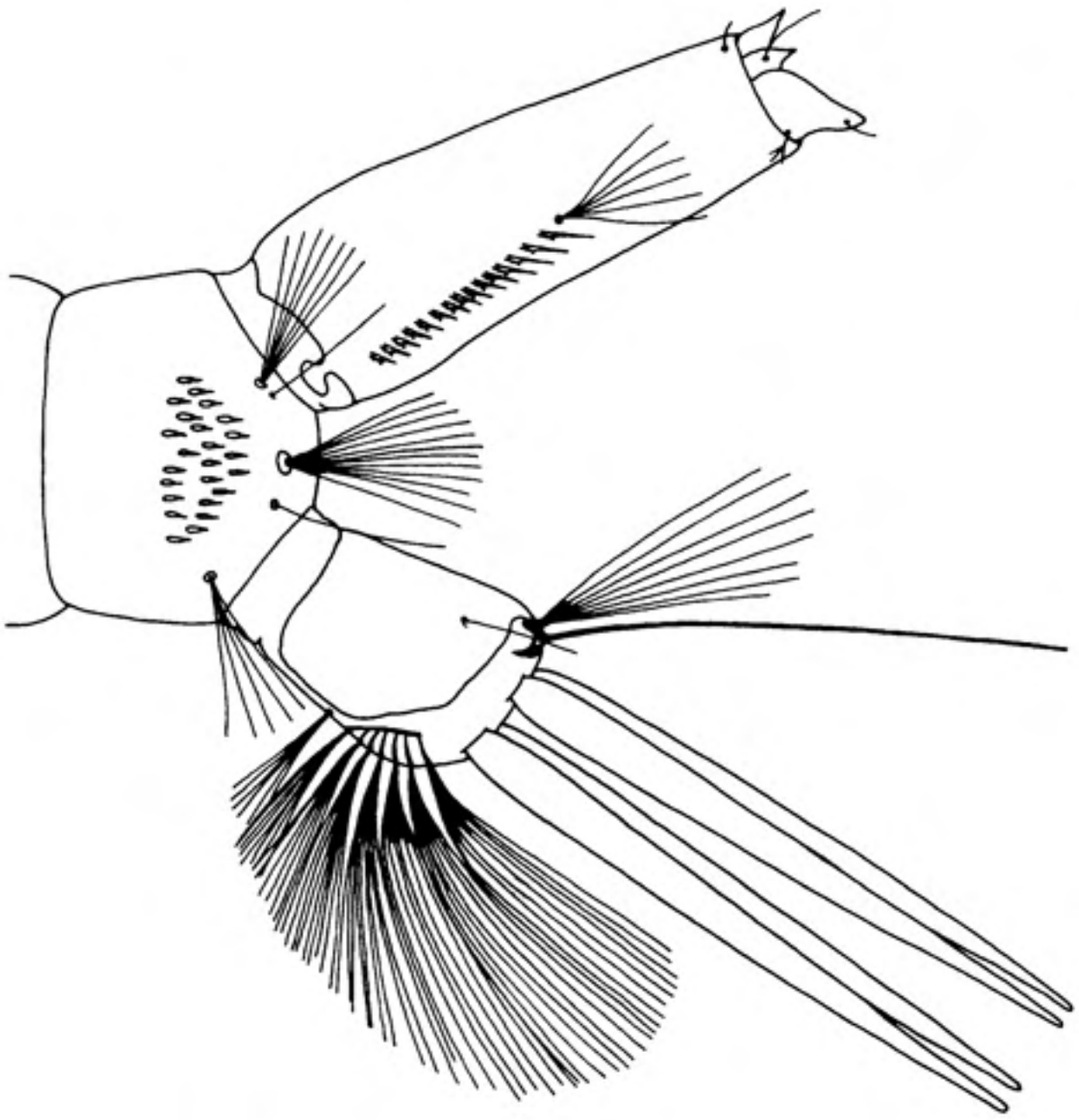

**Fig. 10.80** Larva of *Oc. sticticus*

saddle. The ventral brush has 1–2 precratal setae (4-X). The anal papillae are long and pointed, and often 2.0–2.5 times longer than the saddle.

**Biology**: *Oc. sticticus* is a polycylic species. The larvae occur mainly in temporary water bodies after floods and are regularly associated with those of *Ae. vexans*; it is often the second most frequent mosquito after *Ae. vexans*. The larvae can certainly hatch at lower water temperatures (<8°C) than the larvae of *Ae. vexans*. In central Europe they are associated with the hatching of the larvae of *Ae. rossicus*, *Ae. cinereus* and *Oc. cantans*, after floods during spring time, when *Ae. vexans* is not ready to hatch in masses. However, the peak development occurs during floods in summer. In contrast to *Ae. vexans*, *Oc. sticticus* has an unequivocal preference for shaded breeding waters in the flood plains, which are often covered by trees; the pH-value of the waters usually ranges from neutral to alkaline. The optimum temperature for the development of *Oc. sticticus* is about 25°C. The development from hatching of first-instar larvae to the emergence of the adults lasts 6–8 days at 25°C, 10–14 days at 20°C, 18–19 days at 15°C and 37 days at 10°C. The females can migrate considerable distances when searching for a blood meal, distances of more than 20 km have been observed (Hearle 1926). Adults of *Oc. sticticus* stay predominantly in covered terrains, *e.g.* in flood plains of river systems covered with trees where the females frequently become a nuisance. The peak of biting activity of females is at twilight; however, they can also bite during the day in shaded situations. The females may lay up to 150 eggs in shady, damp depressions which will become flooded by rising water levels.

**Distribution**: The Holarctic species is widespread in Europe and occurs from northern Europe to the Mediterranean area and to Siberia in the East. It has also been reported from North America.

### 10.2.3 Subgenus *Rusticoidus* Shevchenko and Prudkina

The adults are large sized mosquitoes with numerous erect forked scales on the occiput and lateral parts of the vertex. The scutum is covered with narrow scales including most of the prescutellar area, and the scutellum with curved narrow scales and numerous long setae on all lobes. The postpronotum has only broad flat scales. Both the anteprocoxal and postprocoxal membrane have a patch of broad pale scales. The pleurites are extensively covered with pale scales and numerous setae. The abdominal terga have dark scales but with extensive pale scaled areas. In the male genitalia tergum IX has narrow lobes on each side with several short setae. The basal lobe of the gonocoxite bears several long lanceolate setae, and the claspette filament is short and more or less onion or triangular shaped. The fourth-instar larvae of European *Rusticoidus* species are easily distinguished from all other *Aedes* and *Ochlerotatus* species by having several pairs of setae inserted dorsally at the siphon and a variable branched small seta located laterally, usually close to the distal pecten teeth in addition to the siphonal tuft (1-S).

The members of the subgenus were previously placed in the former subgenus *Ochlerotatus* of *Aedes* as a separated globus (*Feltianus*) or group (*rusticus*-group) (Martini 1931; Edwards 1932) and this classification was followed by others (Natvig 1948; Mohrig 1969). In 1973, Shevchenko and Prudkina established the new subgenus *Rusticoidus* as a monotypic subgenus, based on the structures of the male genitalia and the larval siphon of *Oc. refiki*, but confusion has existed since then as to which species should be included in the subgenus. According to Reinert (1999a) the following European species are now included in the subgenus *Rusticoidus*: