

10.5 Genus *Coquillettidia* Dyar

The proboscis of the females is moderately long (about 1.5 times longer than the thorax), and uniformly broad. The palps are short, 1/4 the length of the proboscis or shorter. The vertex is covered with numerous erect forked scales. The acrostichal, dorso-central, and lateral setae of the scutum are well developed. The scales on the scutum are usually narrow, and decumbent. Prespiracular setae are absent in all subgenera, and postspiracular setae are absent in the subgenus *Coquillettidia*. The upper mesepisternal setae are well developed, and upper mesepimeral setae are usually present. The mesepisternal and mesepimeral patches are small, with decumbent pale scales. The legs usually have pale rings. Tarsomere I of the hind legs is shorter than the hind tibia. The claw lacks a subbasal tooth, and typical pad-like pulvilli are absent. The wing veins are covered with a mixture of pale and dark, narrow, and broad scales. The abdomen is truncated, and segment VIII is short and broad. The cerci are short and blunt. The palps of the males are about as long as the proboscis, and palpomere V is generally covered with numerous long setae. The fore and mid legs have a pair of claws, unequal in shape and size. Abdominal segment VIII has a distinctly sclerotized tergum, and segment IX is bilobed with sparse long setae. The basal lobe of the gonocoxite is small but distinct, and tapers apically. It bears one or more setae as long as or longer than the lobe. The gonostylus is usually short, enlarged apically with a short apical spine. Claspettes are absent, and the apex of the paraproct is pointed or denticulated. The head of the larva is wider than long, and slightly sclerotized. The antennae are extremely long, at least 1.5 times as long as the head. The part beyond the articulation of the antennal seta (1-A) is slender and whip-like. Abdominal segment I has the lateral tracheal branches extended into a pair of heart shaped air-sacs which lie partly in the metathorax. The siphon is short, conical, and strongly sclerotized. The lobes of the spiracular openings are dark, sclerotized, and folded together. They form a tapered saw-like piercing apparatus for penetrating aquatic plant tissue in order to obtain oxygen. A similar modification of the siphon is characteristic for larvae of some other non-European genera or subgenera, e.g. *Culex* (*Lutzia*), *Mimomyia* (*Mimomyia*), and *Hodgesia* (Gillett 1972).

Abdominal segment X is long and slender, and the saddle completely encircles the segment.

Larvae of all members of the genus obtain the oxygen from the submerged parts of aquatic plants by penetrating the plant tissue with their highly specialized siphon. The pupae are also attached to plant tissues in order to take oxygen from the aerenchyma by their sclerotized, pointed respiratory trumpets. The cuticle of the trumpets is softened subapically at a line of weakness, and breaks off prior to the time of adult emergence. The females lay the eggs on the water surface in rafts of variable shape.

The species are grouped in three subgenera, *Austromansonia* (only one representative from New Zealand), *Rhynchotaenia* (13 species mostly recorded from the Neotropical, some from the southern Nearctic region), and *Coquillettidia*. The last subgenus contains 43 species, more than half of them are distributed in the Ethiopian region, the rest in the Oriental and Australian regions, one in the Nearctic region. Only two species of the subgenus occur in the Palearctic region, these are *Cq. buxtoni* and *Cq. richiardii*.

10.5.1 Subgenus *Coquillettidia* Dyar

Coquillettidia (*Coquillettidia*) *buxtoni* (Edwards 1923)

Female: Readily distinguished from *Cq. richiardii* by the presence of exclusively or mostly dark coloured scales on the proboscis, palps, wing veins, and tarsomeres. The scales are blackish brown pigmented with structural metallic purple. The head has pale decumbent scales and brown upright scales. The scutum has golden brown scales, which are paler around the wing base and at the posterior margin. The femora and tibiae are dark scaled with scattered ochre coloured scales. The latter form an indistinct longitudinal stripe on the ventral surface and spots at the apex. The dark scales on the wing veins are narrower than in *Cq. richiardii* but still broader than in members of the genus *Culex*. The terga are mainly dark coloured with a violet hue, whitish scales are restricted to triangular basolateral patches, sometimes connected by narrow basal bands, and the sterna have pale basal bands.

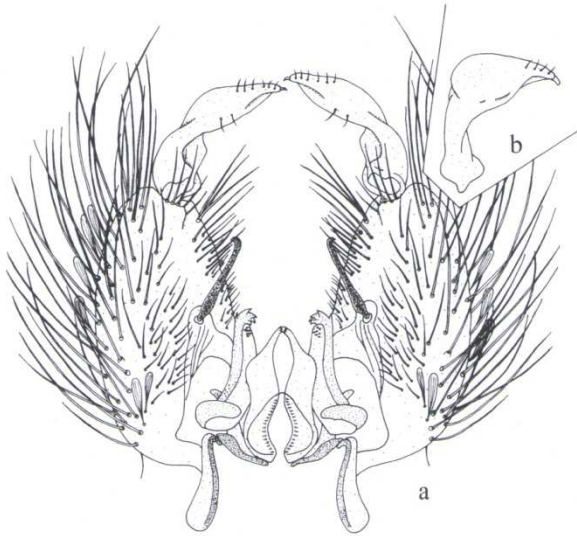


Fig. 10.136 Hypopygium of (a) *Cq. richiardii* and gonostylus of (b) *Cq. buxtoni*

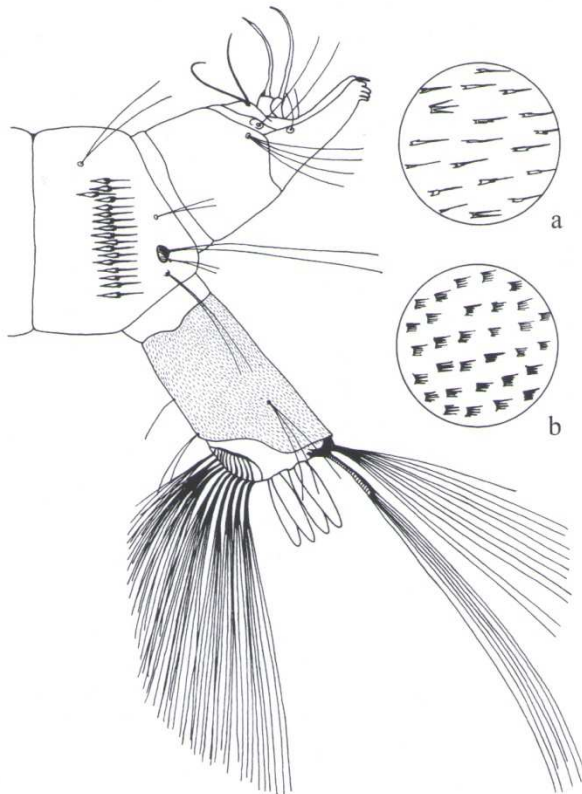


Fig. 10.137 Larva of *Cq. richiardii* and spicules on the saddle of (a) *Cq. richiardii*; (b) *Cq. buxtoni*

Male: The palps are longer than the proboscis. The hypopygium is quite similar to that of *Cq. richiardii*. The lobes of tergum IX possess 4–5 thin setae. The main difference between the two species is found in the shape of the gonostylus. In *Cq. buxtoni* the basal half of the gonostylus is stem-like, not constricted in the middle. The apical half is considerably bulky and then gradually narrows towards the apex. The outer margin of the gonostylus bears four small and tiny setae apically (Fig. 10.136b).

Larva: Closely resembles that of *Cq. richiardii*. The head is about 1.5 times wider than long. The post-clypeal seta (4-C) is multiple-branched. The inner frontal seta (5-C) is short and 8-branched. The median frontal seta (6-C) has 5–7 branches and the outer frontal seta (7-C) has 9 branches. The comb consists of 16–22 scales arranged in an irregular row, dorsally in a partly doubled row. The individual scales have a pointed terminal spine. Seta 1-VIII has 5–7, usually 6 branches (Fig. 8.87b), setae 2-VIII and 3-VIII are 2-branched, and 4-VIII and 5-VIII are usually 3–4 branched. Setae 2-VIII, 4-VIII and 5-VIII are at most half as long as seta 3-VIII. The abdominal segment X resembles that of *Cq. richiardii* but the saddle is covered with numbers of rows containing 2–8 spicules on a common base (Fig. 10.137b). The saddle seta (1-X) is 4-branched.

Biology: Because of its limited distributional range and rarity, the data on the biology of the species are scanty. The larvae were found attached to the roots of *Acorus* sp. and *Typha* sp. (Coluzzi and Contini 1962). Eggs are laid in boat-shaped rafts (Guille 1975). The females bite humans in open areas (Gutsevich et al. 1974).

Distribution: Mediterranean subregion of the Palaearctic. In Europe the species is present in Spain, France, and Italy, and also reported from Romania and Ukraine (Snow and Ramsdale 1999).

Coquillettidia (Coquillettidia) richiardii (Ficalbi 1889)

Female: The scales on the wing veins are much broader than those of any other European species (Fig. 6.6b). The apex of the proboscis is slightly broader and distinctly darker than the preceding portion, and sometimes the pale scales form a median ring. The base of the proboscis has intermixed