THE NYMPHS OF ITALIAN SPECIES OF THE 
ECDYONURUS LATERALIS GROUP, WITH A DESCRIPTION 
OF THE NYMPH OF E. GRIDELII (GRANDI, 1953) 
(Ephemeroptera, Heptageniidae) 

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The Italian species of the *Ecdyonurus lateralis* group were re- 
cently reviewed (Belfiore, 1981), with special account to adult sta- 
ges: in that paper I named *E. grandiae* n. sp. the species recognized 
as *Heptagenia lateralis* by Grandi (1953; 1960), and I synonymized 
*Heptagenia concii* Grandi, 1953 with *Ecdyonurus lateralis* (Curtis, 
1834). I shortly discussed also some taxonomic characters of the 
nymphs of *E. lateralis* and *E. grandiae*, and of a male imago of *E. 
gridellii* (Grandi, 1953); the nymph of the latter species was till now 
unknown.

During a collection trip in Northern Italy I have collected seve- 
reral nymphs of *Ecdyonurus lateralis* near the type-locality of *E. gridellii* (Trieste, Muggia: see Belfiore, 1981) and from some other biotopes of 
Friuli-Venezia Giulia: by rearing, I obtained some adults easily re- 
ferable to *E. gridellii*. I take the opportunity of describing now the 
unknown nymphal stage of this species and of pointing out some 
morphological characters for a discrimination of the nymphs of all 
Italian species of the *E. lateralis* group.

**Ecdyonurus gridellii** (Grandi, 1953)

Nymph. Head subtrapezoidal with round angles (fig. 1), maxi- 
mum width at eyes level. Labrum slender, with well developed 
lateral projections (fig. 4). Incisors of mandibles as in fig. 7. 14-18 
comb-shaped hairs on distal end of maxillae. A dense fringe of long 
hairs on fore margin of lateral lobes of hypopharynx (fig. 8): some 
long hairs extend all around the lobes, to lateral and hind margin.

Glossae and paraglossae as in fig. 11.

Femora wide and short (figs. 12-14), with sinuous fore margin.

Spines on upper surface of femora narrow and pointed (fig. 24).

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Figg. 1-7 - Head of nymphs. Fig. 1: *E. gridellii*; Fig. 2: *E. lateralis*; Fig. 3: *E. grandiae*; Fig. 4: *E. gridellii*; Fig. 5: *E. lateralis*; Fig. 6: *E. grandiae*; Fig. 7: Incisors of mandibles of *E. gridellii*. 
Tarsal claws with two well developed teeth (fig. 21). Markings on legs: four dark stripes on femora, as in other species of the group, a dark band on the middle of tibiae, tarsia darker at apex, in some specimens at basis too.

Gills (fig. 27): 1st gill rather narrow, gills 2nd-6th of a somewhat triangular shape with round angles, 7th gill usually broad; the shape of gills is however variable. Abdominal markings not distinctive.

MATERIAL. Friuli-Venezia Giulia: Bagnoli della Rosandra (Trieste), Rosandra stream, 4-5 V. 1981, 2> (from reared nymphs), 35 nymphs; Castelmonte (Udine), a little tributary of ludrio stream, 3 V. 1981, 3>>, 1<, 5 male subimagines (from reared nymphs), 18 subimagines of both sexes, 32 nymphs; Stregna (Udine), Erbezzo stream, 3 V. 1981, 24 nymphs. All C. Belfiore leg.

**Ecdyonurus lateralis** (Curtis, 1834) and **E. grandiae** Belfiore, 1981

Nymphs of both species are very like *E. gridellii*; they differ from the latter species in the following features:

Head of both species ellipsoidal (figs. 2-3), maximum width before eyes level. Labrum of *E. lateralis* (fig. 5) with short lateral projections which may be slightly bent backwards. Labrum of *E. grandiae* (fig. 6) usually of intermediate slenderness. Mandibles, maxillae and labium as in *E. gridellii*. Both in *E. lateralis* and in *E. grandiae*, long hairs on lateral lobes of hypopharynx don't get over the apex of lobes (figs. 9-10): around the apex there is sometimes a
Figs. 12-14 - Legs of a nymph of *E. gridellii*. Fig. 12: fore leg; Fig. 13: mid leg; Fig. 14: hind leg. Figg. 15-17: Legs of a nymph of *E. lateralis*. Fig. 15: tore leg; Fig. 16: mid leg; Fig. 17: hind leg. Figg. 18-20: Legs of a nymph of *E. grandiae*. Fig. 18: fore leg; Fig. 19: mid leg; Fig. 20: hind leg.
beard of short hairs. Femora of both species (figs. 15-20) narrower than *E. gridelli*, with less evident sinuosity of fore margin. Spines on upper surface of femora always tapering in *E. lateralis* (fig. 25); on fore femur of *E. grandiae* there are many spines parallel sided (fig. 26). Also if detached, fore legs of all three species are easily recognizable by the lack of the fringe on outer margin of tibia. Tarsal claws of *E. grandiae* (fig. 23) with two teeth, as in *E. gridelli*. Claws of *E. lateralis* with one large tooth (fig. 22), sometimes lacking. Markings on legs and on abdomen of immature nymphs off. *lateralis* and *E. grandiae* like *E. gridelli*; mature nymphs are distinguishable by the adult pattern (Belfiore, 1981: fig. 2 a and b; Grandi, 1953: fig. XXIII). Gills (figs. 28-29) variable; 1st gill off. *lateralis* usually broader than *E. gridelli*; 1st gill of *E. grandiae* narrower, 5th and 6th more slender.


*E. grandiae*: Lazio: Tolfa (Roma), Rio Fiume, Strada Provinciale 3b, km 7.5, 1.V.1980, 5 nymphs (paratypes); Tolfa (Roma), Mignone river, 17.V.1981, 47 nymphs. All C. Belfiore leg.

Fig. 21-23 - Tarsal claw of nymphs. Fig. 21: *E. gridelli*; Fig. 22: *E. lateralis*; Fig. 23: *E. grandiae*. Fig. 24-26: Spines on upper surface of fore femur. Fig. 24: *E. gridelli*; Fig. 25: *E. lateralis*; Fig. 26: *E. grandiae*. 

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Figs. 27-29 - Gills. Fig. 27: *E. gridelli*; Fig. 28: *E. lateralis*; Fig. 29: *E. grandiae*.
KEY TO THE NYMPHS OF ITALIAN SPECIES OF THE Ecdyonurus lateralis GROUP

1. One tooth on tarsal claws (fig. 22)    ... E. lateralis (Curt.)

— Two teeth on tarsal claws (fig. 21)    ... 2.

2. Spines on upper surface of fore femur pointed (fig. 24);
    long hairs all around the lateral lobes of hypopharynx (fig. 8);
    femora wide and with fore margin strongly sinuous (figs. 12-14)
    ... E. gridellii (Gmd.)

— Several spines on upper surface of fore femur parallel sided (fig. 25);
    long hairs on lateral lobes of hypopharynx don't get over the apex of lobes (fig. 10);
    femora more slender (figs. 18-20)    ... E. grandiae Belfiore

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RIASSUNTO

La ninfa di Ecdyonurus gridellii (Grandi, 1953) viene descritta per la prima volta. I caratteri diagnostici di tale specie sono posti in rilievo mediante il confronto con le ninfe di E.lateralis (Curtis, 1834) ed. E. grandiae Belfiore, 1981. Le ninfe di E. gridellii si distinguono dalle del gruppo E. lateralis.

SUMMARY

The A. describes the nymph of Ecdyonurus gridellii (Grandi, 1953), previously unknown; diagnostic features of this species, compared with the nymphs of E. lateralis (Curtis, 1834) and E. grandiae Belfiore, 1981, are briefly discussed and illustrated. A key to the nymphs of Italian species of E. lateralis group is given.

REFERENCES