

## A New Species of the Genus *Baetis* Leach (*Ephemeroptera*) from Western Poland

by

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**Summary.** The paper contains a description of imagines (male and female), egg, and fully grown nymph of the European species *Baetis liebenauae* sp. n. The species belongs to the group *vernus* Curtis and has been found in the river Obra (Western Poland).

### *Baetis liebenauae* sp. n.

The species belongs to the group *vernus* Curtis (Müller-Liebenau [1], pp. 104—128).

#### Imago male (in alcohol)

Male similar to *B. subalpinus* Bengtsson (Müller-Liebenau [1], pp. 122—127) male.

**Morphology.** Body length 5.5—6.8 mm (holotype — 6.0 mm), cerci length 10.5—13.0 mm (in holotype cerci broken off). Hind wing (Fig. 1) with wing spur and three longitudinal veins; vein III reaching half-way of wing; intercalary veins and signs of cross veins present. Forceps (Fig. 2) showing parallel-edged base segment with distinct nodule at inner top. First segment tapering gradually, underdeveloped "tooth" present at its inner end. Second segment twice longer than first (in *B. subalpinus* Bengtsson 2.5—3.0 times), bent inwardly at base. Third segment small, more than twice longer than wide. Paraproct tapering, near end cut off and a little convex.

**Colouration.** Turbinate eyes yellow or orange (in holotype yellow). Thorax plates and first abdominal tergum dark brown or chestnut-brown (in holotype dark brown), other tergites and first abdominal sternum dark grey-brown, other sternites much more pale; three terminal segments of abdomen slightly darker and with a tint of ochre. Forceps-base, excluding inner side near base, and whole first segment — darkened (in *B. subalpinus* Bengtsson first segment pale), rest of forceps pale. Legs yellowish, all tarsi and ends of anterior tibiae slightly darker. Wing membrane colourless, veins yellowish. Cerci whitish, just at the base slightly ochre.

**Imago female (in alcohol)**

*Morphology.* Body length 5.9—7.0 mm, cerci length 19.0—11.2 mm.

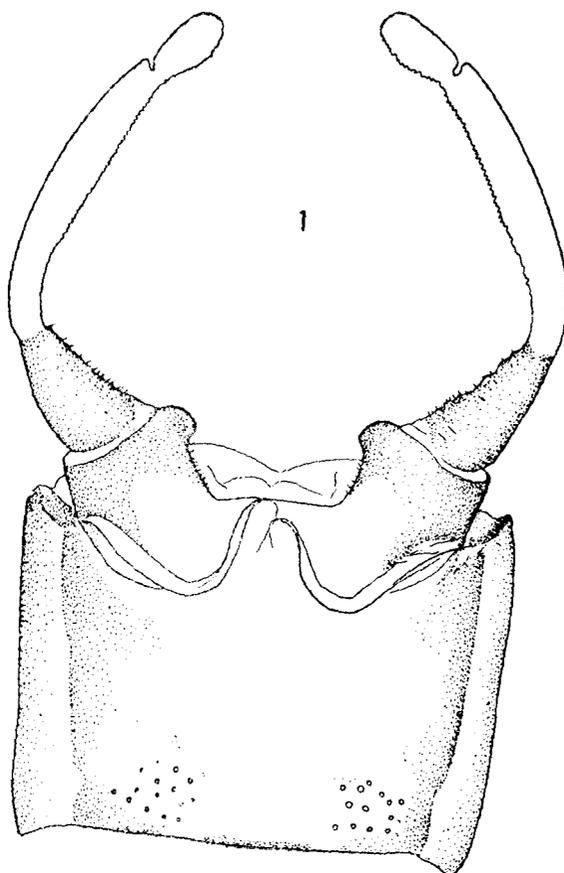
*Colouration.* Thorax plates pale grey-brown, abdominal tergites russet, sternites grey-yellowish. Femora grey-yellowish, tibiae and tarsi greyish, darkened. Cerci yellowish, their bases somewhat dark brown. Wing membrane colourless, only area between costa- and subcosta near end of wing slightly yellowish. Veins dark brownish.

**Egg (in alcohol)**

*Dimensions.*  $146 \times 109 \mu$  (laid by a female with body length 6.2 mm). Chorion thick and showing fibrous structure; at outside producing a sticky sheath coat.

**Nymph (in alcohol)**

*Morphology.* Body length of fully grown nymph 6.3—8.0 mm, length of outer cerci about  $3/4$  of abdomen length, inner cercus a little shorter than outer ones. Frons (Fig. 10) of shape similar to that is *B. vernus* Curtis (Müller-Liebenau [1], pp. 104—121) but with less concave inner margins; surface distinctively "shagreened" and with thin hairs and very few tiny scales. Labrum (Fig. 6)  $1\frac{3}{4}$  times wider than long and with  $1+$  (3—6) long bristles on each side of frontal part (but lacking on its edges). Mandibles (Figs. 7, 8) with deeply separated two groups of teeth; the outer group fully accreted and forming a spoon-like squama usually rounded at end; in left mandible the most inner small tooth of the group a little separated, whereas in the right one the most inner shortened tooth only slightly separated. Palpus labialis (Fig. 9) with third segment similar to that in *B. tracheatus* Keff. et Machel (Müller-Liebenau [1], pp. 117—122); it is a little shorter than wide and forms a peak at its end; upper surface covered by fairly numerous short and thorny bristles, longer and more slender further down. Inner lobe of second segment relatively wider and more rounded than in *B. tracheatus* Keff. et Machel. On its top and along outer margin of second segment short hairs fairly numerous. Four to six longer bristles also present along that margin. Groups of sensillae at basal part of second segment and at outer half of the first one. Three rows of bristles along terminal edge of paraglossa (Fig. 9). Legs (Figs. 13, 14): along upper edge of femur elongated, almost parallel, blunt spines present. Toward end of femur the spines shorter and more dispersed with numerous fine and sharp spines among them. A group of a few short and blunt spines at top femur. Along lower edge numerous fine and sharp spines visible; some of them longer than the others. The finest sharp spines at upper surface of femur near its margins. Among them very few fine globular pegs are visible. The shagreen spot present at basal part of femur. Tibia and tarsus with sharp spines at inner margin, and with hairs only at the outer one. Very fine globular pegs diffused at whole surface of both joints. Legs covered by hairs (not shown on Fig. 13, 14). Abdominal tergites (Figs. 4, 5) shagreened and covered by numerous hairs, scales and their bases with very few senthered pores. All these hairs scales do not reach the hind edges of the tergites where more or less blunt spines and fine hairs occur. Shagreen and pigmentation pars also to some parts of intersegmental membranes.



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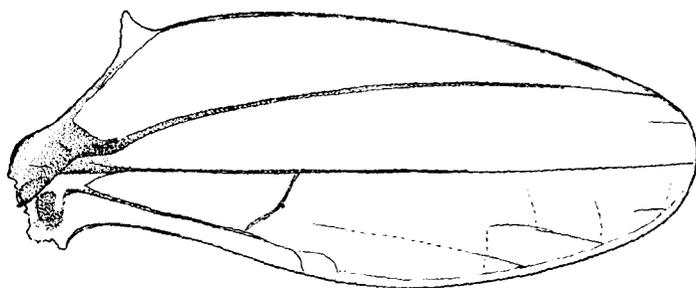


Fig. 1, 2. *Baetis liebenauae* sp. n., ♂ imago  
1 — genital segments, 2 — hind wing

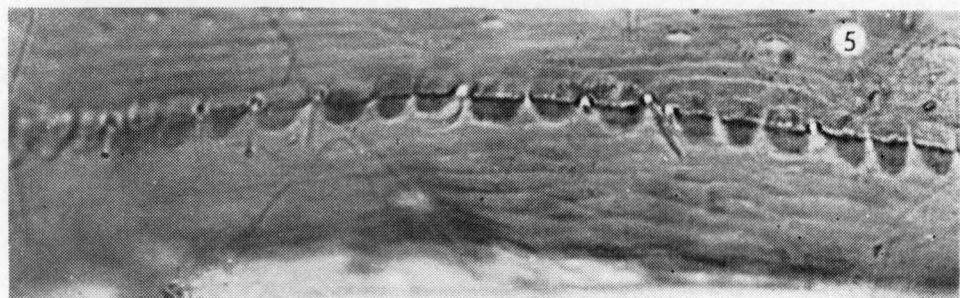
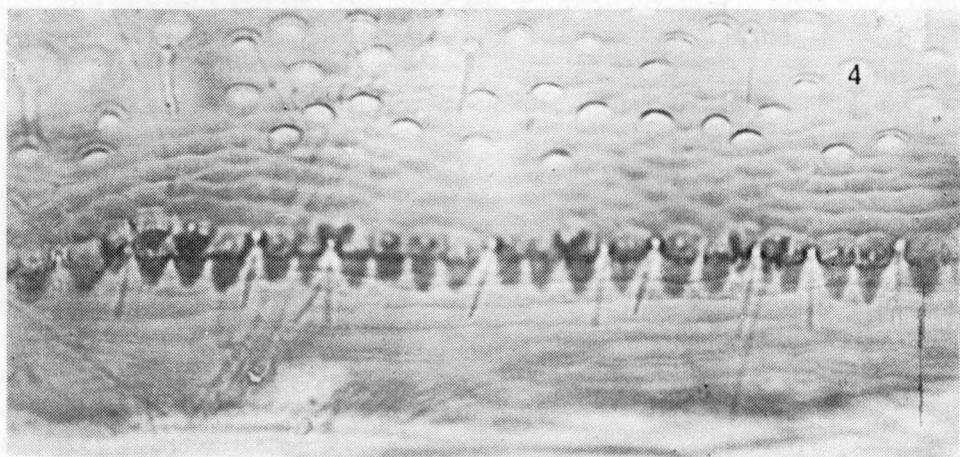
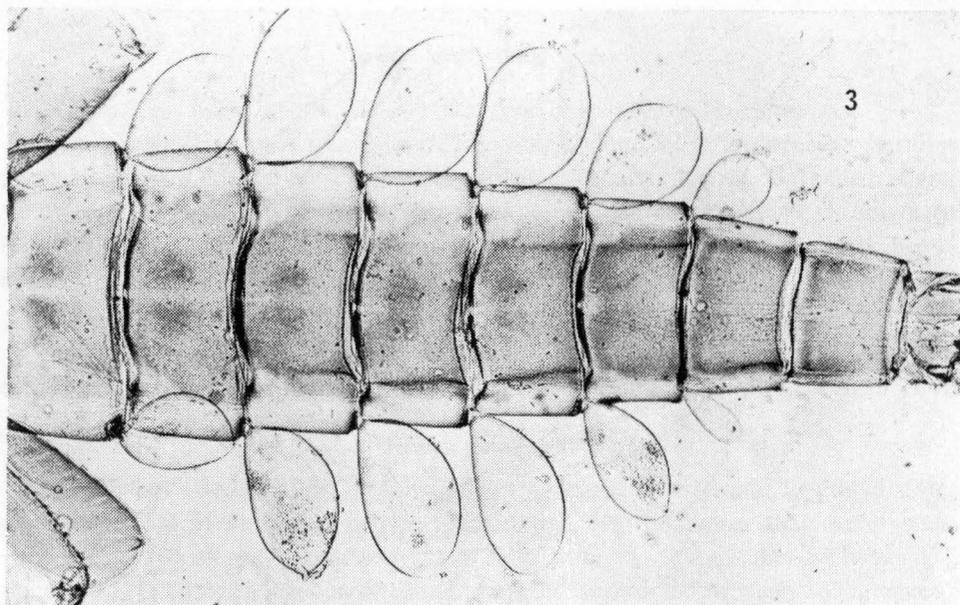


Fig. 3—5. *Baetis liebenauae* sp. n., fully grown nymph (last instar). Photo J. Skibiński  
3 — dorsal view of abdomen, 4 — surface and rear edge of IV abdominal tergum, 5 — rear edge of IV abdominal tergum of other specimen

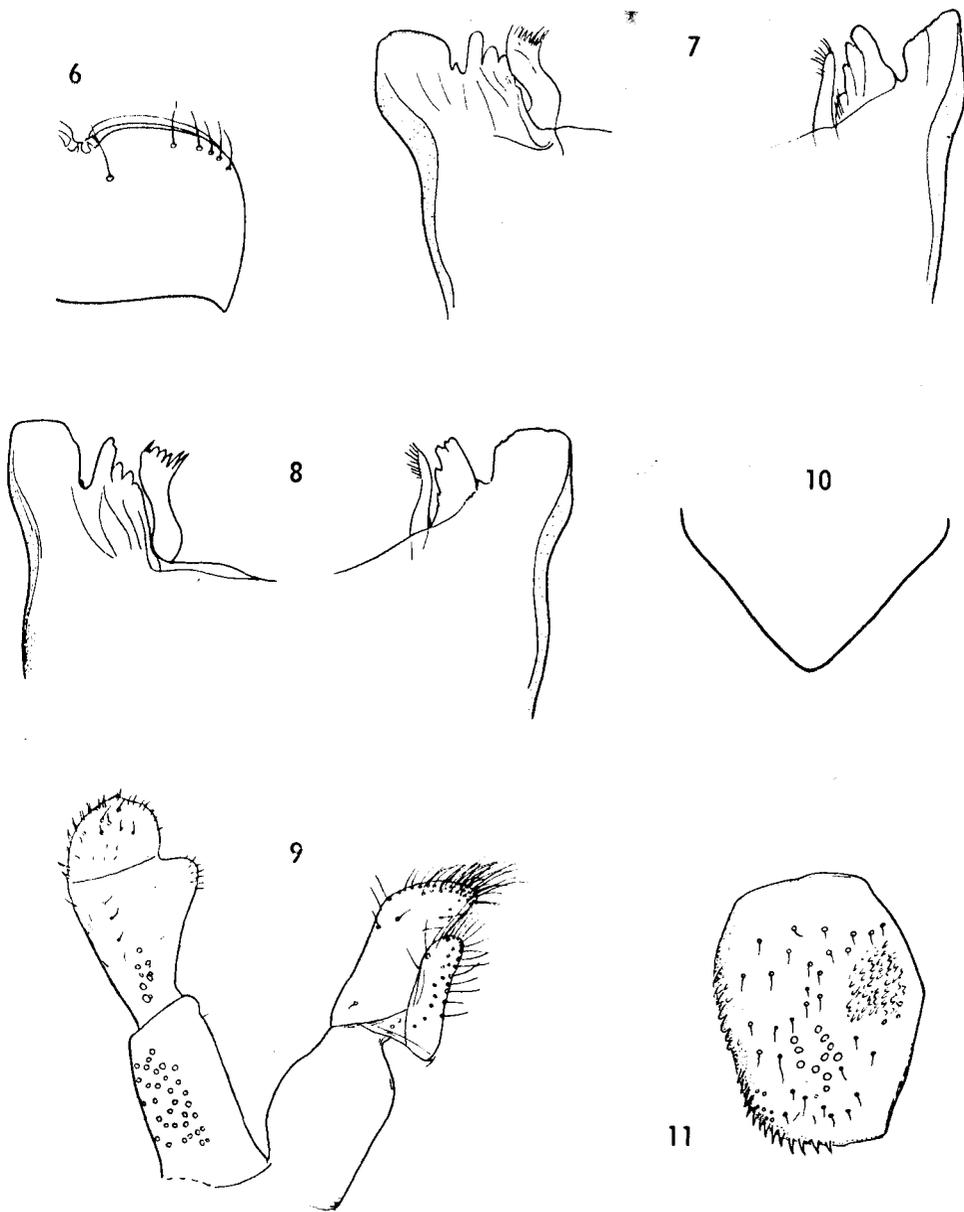
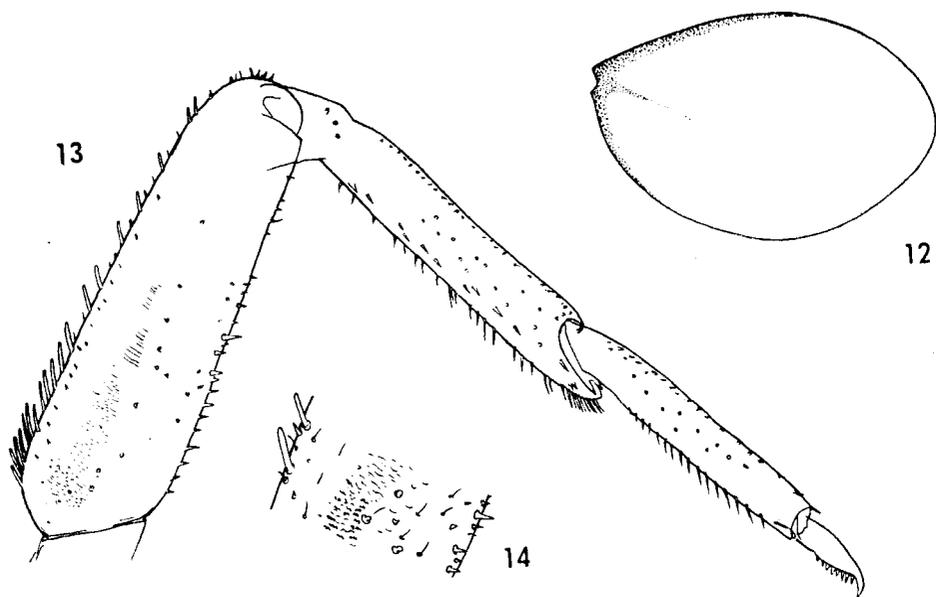


Fig. 6—11, *Baetis liebenauae* sp. n., fully grown nymph

6 — labrum, 7,8 — mandibular teeth of two different specimens, 9 — half of labium, 10 — frons, 11 — paraproct



Figs. 12—14. *Bactis liebenauae* sp. n., fully grown nymph  
12 — tracheal gill of IV pair, 13 — fore leg, 14 — fragment of upper surface of fore leg femur

Tracheal gills (Figs. 3, 12) relatively short and wide, not more than  $1\frac{3}{4}$  times as long as wide. Tracheal branches not visible in most cases. Margins with hairs. Paraproct (Fig. 11) with irregular spines. Its surface covered by delicate hairs, not numerous scales, their bases, and sensillae. Shagreen spot at outer angle.

*Colouration.* Combination of colours typical for the group *vernus* Curtis, but dorsal parts dark caused by lack of pale oval spots at abdominal tergites (Fig. 3). Ventral side pale. Tracheal gills whitish with dark margin; sometimes central tracheal trunk also visible. Legs pale with dark joints and margins; femora slightly darkened at central parts. Cerci without dark band.

*Material.* All specimens taken in river Obra near Skwierzyna (Province Zielona Góra). Material kept in mayfly collection of Institute of Systematic Zoology, Adam Mickiewicz University at Poznań. Imagines were reared from nymphs. Holotype: ♂ imago — May 26, 1973 (No. 0. 55); paratypes; 1 ♂ imago, 2 cast skins — May 26, 1973; 4 ♂♂ imagines — June 1—4, 1972; 5 ♀♀ imagines, 5 cast skins — May 22—25, 1973; 13 nymphs, 2 cast skins — May 22, 1973; other material: 1 ♂ imago — taken during field work, May 25, 1971; 5 ♀♀ imagines, 6 ♂♂ (5 imagines and 1 subimago), 9 cast skins — June 2—4, 1972.

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#### REFERENCES

[1] I. Müller-Liebenau, *Revision der europäischen Arten der Gattung Baetis Leach; 1815 (Insecta, Ephemeroptera)*, Gewässer und Abwässer, **48/49** (1969), 1—214.

М. Кеффермюллер, **Новый вид поденки рода *Baetis* Leach (*Ephemeroptera*) из западной Польши**

**Содержание.** В настоящей работе дается описание и рисунки взрослых форм и личинок нового европейского вида поденки, *Baetis liebenauae* sp. n. (*Ephemeroptera, Baetidae*), принадлежащего к группе *vernus* Curtis. Местонахождения: река Обра (западная Польша).

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