

**Description of *Mochlonyx triangularis* n. sp. and a key to the larvae, pupae  
and imagines of the Palearctic species of *Mochlonyx* Loew  
(Diptera: Chaoboridae)**

by

ALEXANDER KLINK

*Hydrobiologisch adviesburo, Wageningen*

**ABSTRACT.** — Larvae and pupae of the genus *Mochlonyx* Loew were collected in the Netherlands and reared to the adult stage. A description is given of the male, female and pupa of *Mochlonyx triangularis* n. sp. based on this material. A key is included to the males, females, pupae and larvae of the Palearctic species.

The five known species of *Mochlonyx* occur in Europe and North America. *M. culiciformis* Degeer is Holarctic, *M. martinii* Edwards occurs in the Palearctic while *M. cinctipes* Coquillett and *M. fuliginosus* Felt are restricted to the Nearctic (Edwards, 1932). The imagines of *M. triangularis* n. sp., reared from three pupae by Dr H. Moller Pillot in the spring of 1981, are quite similar to *M. cinctipes* according to the description of Cook (1956). They differ however in lacking the mottled appearance of the wings. *M. triangularis* differs from the known pupae in form and length of the setae on the tergites III and IV.

*Mochlonyx triangularis* spec. nov. (figures 10, 12, 15, 18, 21).

**Material.** — 2 males (holotype and paratype) and 1 female reared from 3 pupae; 3 exuvia; 2 fourth instar- and 4 third instar larvae, which are probably conspecific. All collected by Dr Moller Pillot in a small fen in the municipality of Meppen, Drenthe, The Netherlands on 8.VI.1981 (Dutch E. I. S. co-ordinates 12×30). The material is preserved in alcohol 70% and stored in the collection of the author.

**Derivatio nominis.** — The specific name, *triangularis* alludes to the triangular anal point of the male hypopygium (fig. 21).

**Description.** — Male (holotype and paratype). Length 5.0 mm.

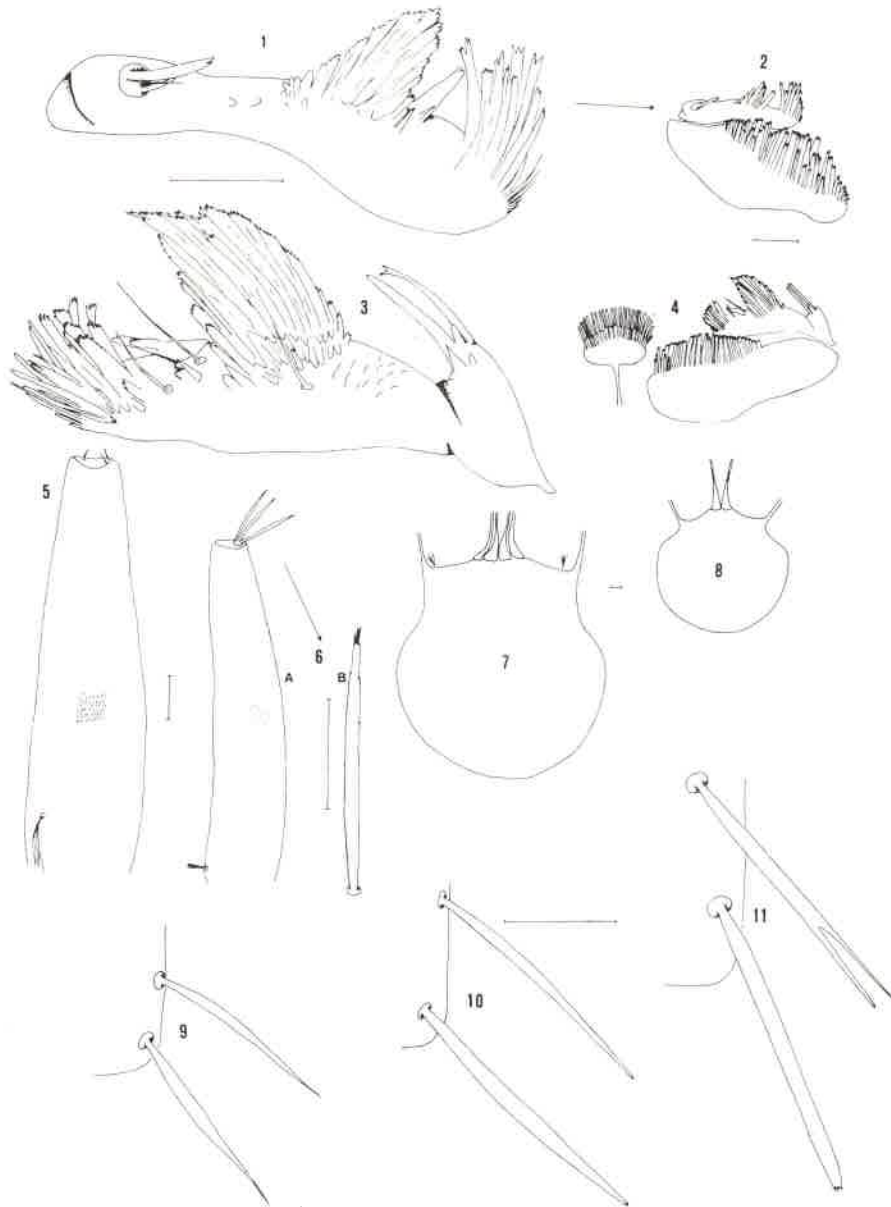
Antenna white with 13 segments which have dark-brown rings. The ultimate segment darker than the preceding one, pedistals grey-brown.

Head posteriorly grey-brown with brown hairs that reflect whitely. The scutum is light-brown, scattered with brown dots and white reflecting hairs. The scutal stripes are light-brown. The scutellum is greyish and covered with brown pedistals of the light coloured hairs. The post-notum is light-brown and divided by a "V"-formed patch of brown dots on a grey background. The abdominal segments have a white groundcolour. The tergites have numerous grey and black spots. Colour of each segment is turning darker distally, sometimes forming a narrow black band near the distal edge. The sternites are white with a few (4-8) black spots.

The hypopygium bears a weakly chitinized, triangular, anal point, which is less than half as long as the appendices. These dark appendices are bent dorsally in a right angle (fig. 21)

The first tarsal segment of all legs is  $\frac{1}{4}$  of the length of the second segment. The last tarsal segment is darker than the remainder of the leg and of the same length as the fourth segment. The basal part of the last tarsal segment bears a rubbing patch. Each claw has two additional claws, one on the base and one in the middle.

The wings are whitish-grey with numerous yellow hairs along the veins and costa. The M-R cross-vein is situated more distally than the M-Cu at a distance equal to the length of M-Cu.



Figs. 1, 2, 6, 9. *Mochlonyx fuliginosus* Edwards, larva 1, 2, 6, pupa 9: 1, maxilla; 2, maxilla and plate between maxillary joint and labium; 6a, syphon; 6b, lamellate setae on syphon in detail; 9, spines on postero-lateral angles of segment VIII. Figs. 3-5, 7, 8. *Mochlonyx cutieiformis* ~~valutinus~~ complex, larva: 3, maxilla; 4, labium, maxilla and plate between maxillary joint and labium; 5, syphon; 7, head of fourth instar larva in dorsal view; 8, head of third instar larva in dorsal view. Fig. 10. *Mochlonyx triangularis*, n. sp., pupa: spines on the postero-lateral angles of segment VIII. Fig. 11. *Mochlonyx cutieiformis* ~~cutieiformis~~ Degeer, pupa: spines on the postero-lateral angles of segment VIII. Scale lines = 0.1 mm.

Female. Length 4.2 mm.

The female differs from the male in the following characters. The antenna has 13 brown segments with a white basal band. The pedistal is light-brown. The cerci are parallel-sided apically and the 10th tergite is distinctly bilobed (fig. 18). In contrast with the male there is no rubbing patch on the fifth tarsal segment and each claw lacks the middle additional claw. The M-R and M-Cu cross-veins are in one line.

Pupa and exuvium.

The thoracic horn is covered with thick scales which give the horn its brown colour. Distal halves of the tergites with 3-4 prominent setae, which are labelled as follows: OL = outer-lateral; ML = middle-lateral; IL = inner-lateral; UL = upper-lateral; LL = lower-lateral; LM = lateral-median; M = median. Tergites II-V each have a different setation. Tergites VI-VIII bear the setae on corresponding places.

Tergite II: OL branched; ML branched; IL single; M single.

Tergite III: UL single, more than twice as long as segment IV; LL short and single; M single (fig. 12).

Tergite IV: OL branched; ML single, more than twice as long as segment IV; IL branched (fig. 12).

Tergite V: OL branched; ML single and very long; M branched.

Tergite VI: UL branched; LL single; IL bifid; M branched.

Tergite VII: UL bifid; LL bifid; IL branched; M branched.

Tergite VIII: UL bifid; LL bifid; IL branched; M branched.

Segment VIII bears a pair of chitinous spines in each postero-lateral angle. The spines are blunt or sometimes bifid (fig. 10, 11). The swimming plates are chitinous, subcircular and have a costa running in proximo-distal direction. The costa bears a branched seta in the middle and a single one near the distal edge.

Larva.

No proof of the conspecificity of the two fourth-instar and the four third-instar larvae could be obtained. The larvae found at the type locality are identical to the larvae of *Mochlonyx culiciformis* Degeer.

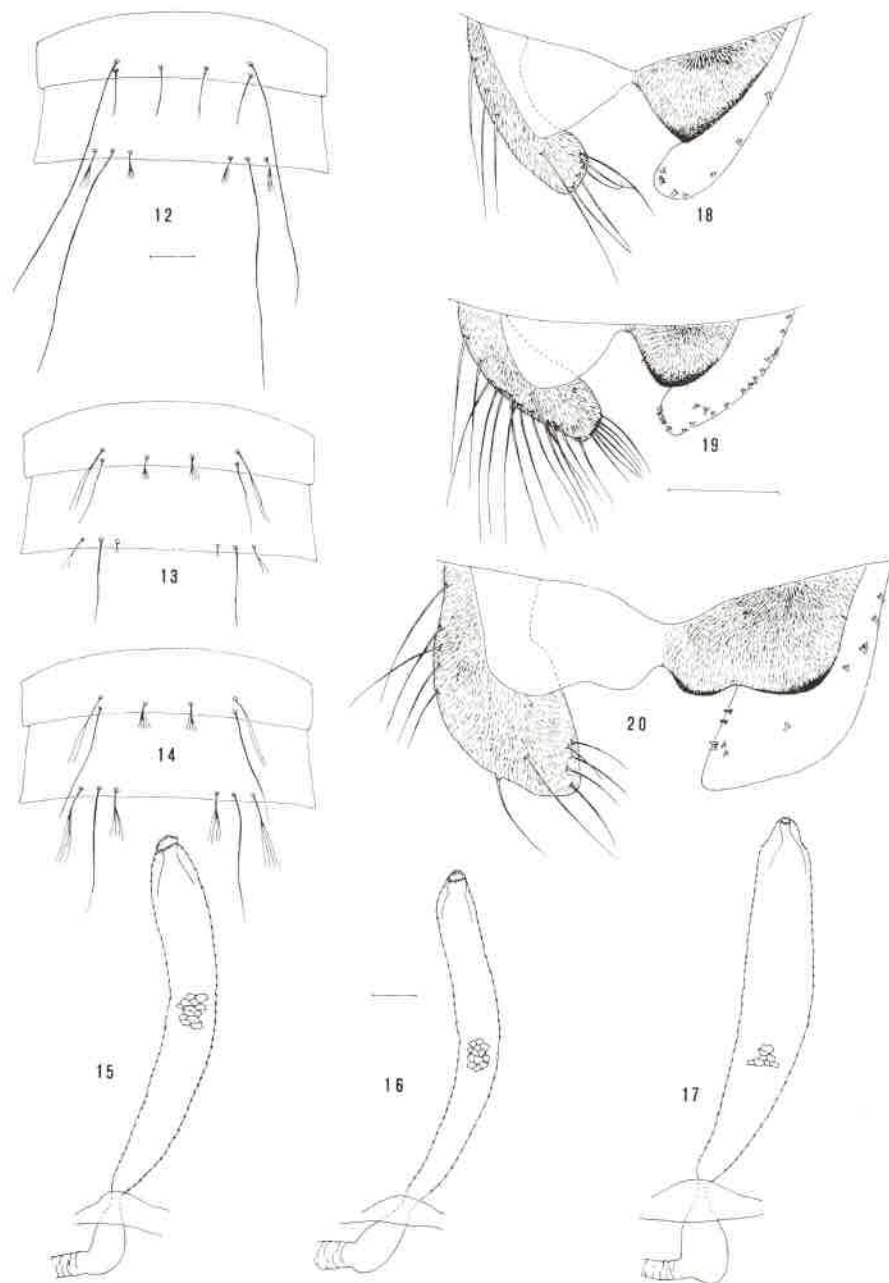
#### KEYS TO THE MALES, FEMALES, PUPAE AND LARVAE OF THE GENUS *MOCHLONYX* IN THE PALEARCTIC REGION.

Males:

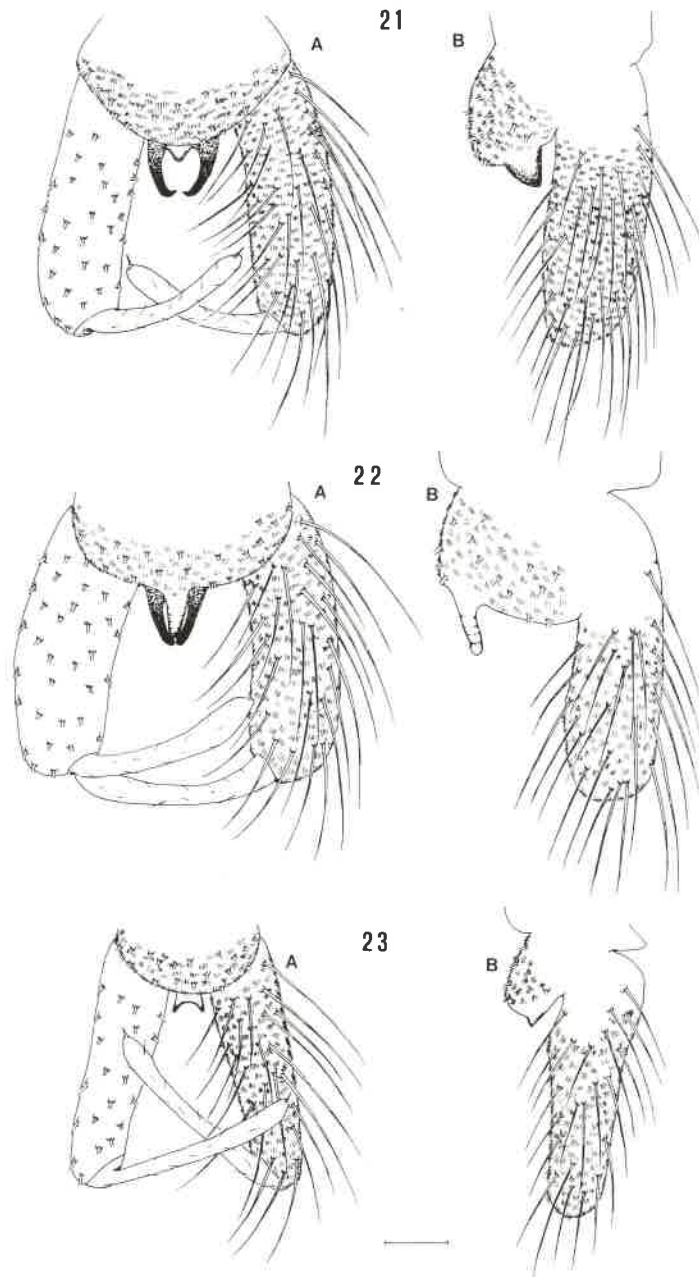
1. The hypopygium has a well developed anal point and two dark appendices ..... 2
- The hypopygium has no anal point. The appendices are very small and hardly coloured (fig. 23) ..... *M. martinii* Edwards *fuliginosus*
2. The anal point is parallel-sided and more than half as long as the appendices (fig. 22) ..... *M. culiciformis* Degeer *velutinus*
- The anal point is triangular and less than half as long as the appendices (fig. 21) ..... *M. triangularis* n. sp.

Females:

1. The fifth tarsal segment of the first leg is  $0.8-1.0 \times$  the length of the fourth tarsal segment ... 2
- The fifth tarsal segment of the first leg is  $0.5-0.7 \times$  the length of the fourth tarsal segment ..... *M. martinii* Edwards *fuliginosus*
2. The cerci on the distal end of the abdomen are ending in a broad plate. Tergite X with an indistinct median incision (fig. 20) ..... *M. culiciformis* Degeer *velutinus*
- The cerci on the distal end of the abdomen are parallel-sided apically. Tergite X bilobed by a very deep incision ..... *M. triangularis* n. sp.



Figs. 12-14. Tergites III and IV of the pupa: *Mochlonyx triangularis* n. sp. (12), *Mochlonyx martinii* Edwards (13), *Mochlonyx ~~culiciformis~~ <sup>velutinus</sup>* Degeer (14). Figs. 15-17. Thoracic horn of the pupa: *Mochlonyx triangularis* n. sp. (15), *Mochlonyx martinii* Edwards (16), *Mochlonyx ~~culiciformis~~ <sup>velutinus</sup>* Degeer (17). Figs. 18-20. Distal part of female abdomen: *Mochlonyx triangularis* n. sp. (18), *Mochlonyx ~~martinii~~ <sup>fuliginosus</sup>* Edwards (19), *Mochlonyx ~~culiciformis~~ <sup>velutinus</sup>* Degeer (20). Scale lines = 0.1 mm.



Figs. 21-23. Male hypopygium in dorsal view (a) and in lateral view (b): *Mochlonyx triangularis* n. sp. holotype (21), *Mochlonyx culiciformis* Degeer (22), *Mochlonyx* ~~*minima*~~ <sup>*malinovskyi*</sup> Edwards (23).  
 Scale lines = 0.1 mm.

## Pupae:

1. The M-setae on tergite III are branched. The UL-setae on tergite III and the ML-setae on tergite IV are not longer than 1.5 times the length of segment IV (figs. 13, 14)..... 2
- The M-setae on tergite III are single. The UL-setae on tergite III and the ML-setae on tergite IV are at least twice as long as segment IV (fig. 12)..... ~~M. triangularis~~ n. sp. *triangularis*
2. The IL-setae on tergite IV are much shorter than the M-setae on tergite III (fig. 13). The thoracic horn is gradually tapering distally (fig. 16). In top view the stigma is circular. The spines on the postero-lateral angles of segment VIII are slender with a long sharp point (fig. 9) (exceptionally one or two spines can be bifid)..... *M. marini* Edwards *fuliginosus*
- The IL-seate on tergite IV are of the same length as the M-setae on tergite III (fig. 14). The thoracic horn tapers abruptly distally (fig. 17). In top view the stigma is oblong. The spines on the postero-lateral angles of segment VIII are stout, bifid or ending in some small notches (fig. 11)..... *M. culiciformis* Degeer *velutinus*

## Larvae:

1. The frontoclypeus bears four median setae on distinct pedistals (fig. 7)..... fourth instar 2
- The frontoclypeus bears only two median setae (fig. 8) ..... second and third instar 2
2. The syphon possesses three lamellate setae distally (fig. 6). The maxillary palpus is reduced (fig. 1) and the plate between the maxillary joint and the labium is covered with lamellae for  $\frac{2}{3}$  of its length (fig. 2)..... *M. marini* Edwards *fuliginosus*
- The syphon possesses three very tiny setae of normal shape distally (fig. 5). The maxillary palpus is well developed (fig. 3) and the plate between the maxillary joint and the labium is covered with lamellae for  $\frac{1}{2}$  of its length (fig. 4)..... *M. culiciformis* complex *velutinus*  
(most probably including *M. triangularis* n. sp. as well)

## ACKNOWLEDGEMENT

I am enormously indebted to Dr Moller Pillot thanks to whose great efforts I was able to make a study on this genus.

## LITERATURE

- Cook, E. F., 1956. The nearctic Chaoborinae (Diptera: Culicidae). — *Univ. Minnesota agr. exp. Stat. techn. Bull.* 218: 1-102.
- Edwards, F. W., 1932. Diptera, family Culicidae. — *Gen. Insect.* 194: 1-258.

Riemsdijkstraat 17, 6701 BC Wageningen.