

*Ceratopogonidae* (Diptera) from Algeria. IV. *Leptoconops camelorum* (KIEFF.), *L. hutsoni* CLASTRIER, and *L. laurae* (WEISS)

*Ceratopogonidae* (Diptera) z Algerii. IV. *Leptoconops camelorum* (KIEFF.), *L. hutsoni* CLASTRIER i *L. laurae* (Weiss)

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ABSTRACT. Hitherto unknown male of *Leptoconops* (L.) *camelorum* (KIEFF., 1921) is described and compared with *L. (L.) irritans* (NOÉ, 1905) (= *Microconops longipalpis* KIEFF., 1923, n. syn., = *L. inopinatus* HUTTEL et HUTTEL, 1952, n. syn.), and hitherto unknown male of *L. (Proleptoconops) hutsoni* CLASTRIER, 1974, is described and illustrated. *Leptoconops mediterraneus* KIEFF., 1921, is considered a junior synonym of *L. (Holoconops) laurae* (WEISS, 1912). For *L. camelorum* the neotype is designated.

The information on the *Ceratopogonidae* collection made in Algeria is given elsewhere (SZADZIEWSKI, 1983).

I am much indebted to Dr. Jean Clastrier from Muséum National d'Histoire Naturelle, Paris, for making available for me specimens of *Leptoconops irritans* as well as for discussion on *Leptoconops* and valuable suggestions.

1. *Leptoconops* (L.) *camelorum* (Kieffer, 1921)

(Figs 1-13)

*Tersesthes camelorum* KIEFFER, 1921: 111 (♀, Algeria).

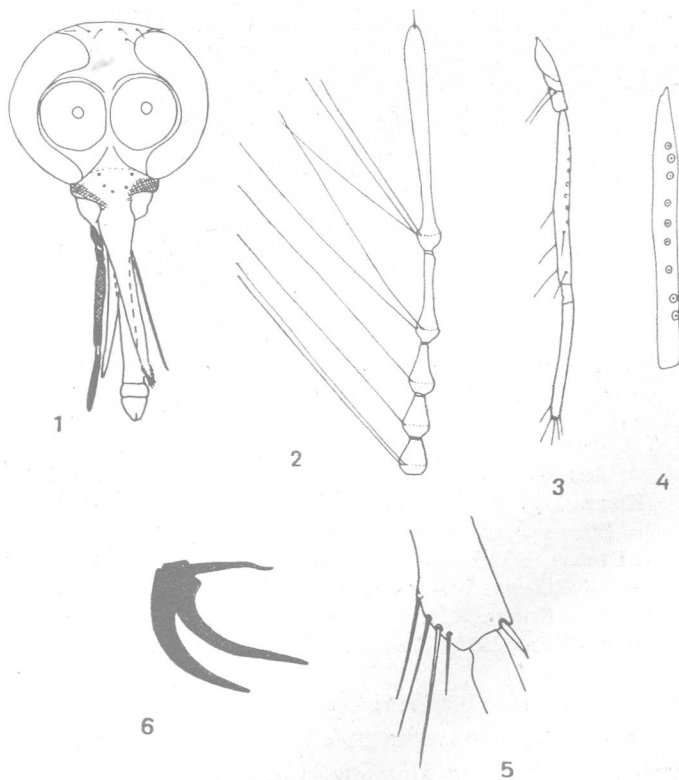
*T. camelorum*: KIEFFER, 1923: 659 (record, Algeria).

*Leptoconops* (L.) *camelorum*: DŽAFAROV, 1964: 367 (♀, Caucasus).

*L. (L.) camelorum*: GUCEVIČ, 1973: 248 (♀, distribution).

## DESCRIPTION

♂. Head (fig. 1) dark brown; mouthparts longer than head height; flagellum 791–868  $\mu\text{m}$  long; flagellomere lengths as follows (in  $\mu\text{m}$ ): 96, 24, 28, 28–28, 32–32, 32–32, 36–36, 36–36, 40–40, 40–48, 42–60, 96–116, 244–256,  $n = 2$ ; flagellomere XIII 2.3–2.5 times longer than flagellomere XII (fig. 2); palpus as long as labium, third palp segment long and slender



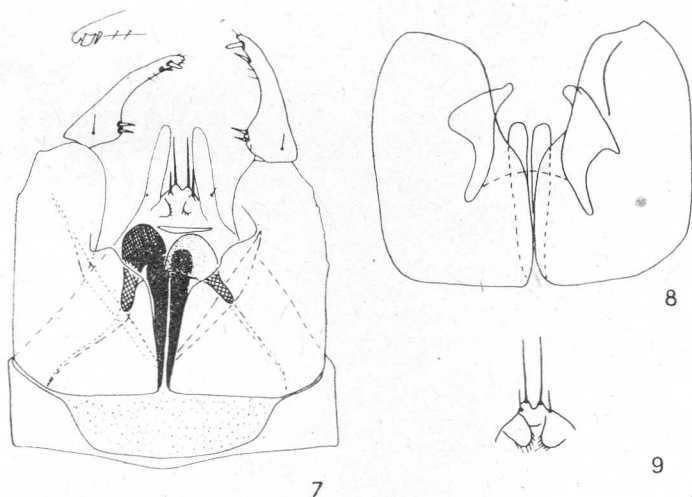
1–6. Male of *Leptoconops camelorum*. 1 — head, 2 — last flagellomeres, 3 — palpus, 4 — third palp segment, 5 — tibial comb, 6 — claws of middle leg

(170–200  $\mu\text{m}$ ), sensory pits (9,  $n = 1$ ) arranged in one irregular row on inner side (figs 3–4); fourth segment shorter (112–140  $\mu\text{m}$ ) and more slender than third one; clypeus with two mesal setae distinctly distal of two lateral setae (fig. 1), one specimen with one mesal seta extra.

Thorax shining black; anepisternum without setae; wing transparent, 1.35 mm long; halter pale; legs blackish brown, fore tibia pale at tip; fore basitarsus pale with dark tip; first and second tarsal segments of

middle leg pale with dark tips; first and second tarsal segments of hind leg pale or second with dark tip; middle basitarsus with 2 black basal spines, 0-1 mesal and 2 apical black spines, 3-4 tactile median setae present; tibial comb composed of four setae (fig. 5), other basitarsi with apical black spines only; claws of all legs similar: inner claw simple, outer with long basal process curved at tip (fig. 6).

Abdomen blackish brown, somewhat paler than thorax; genitalia (figs 7-9) blackish brown; gonostyle with two basal and two preapical



7-9. Male genitalia of *Leptoconops camelorum*

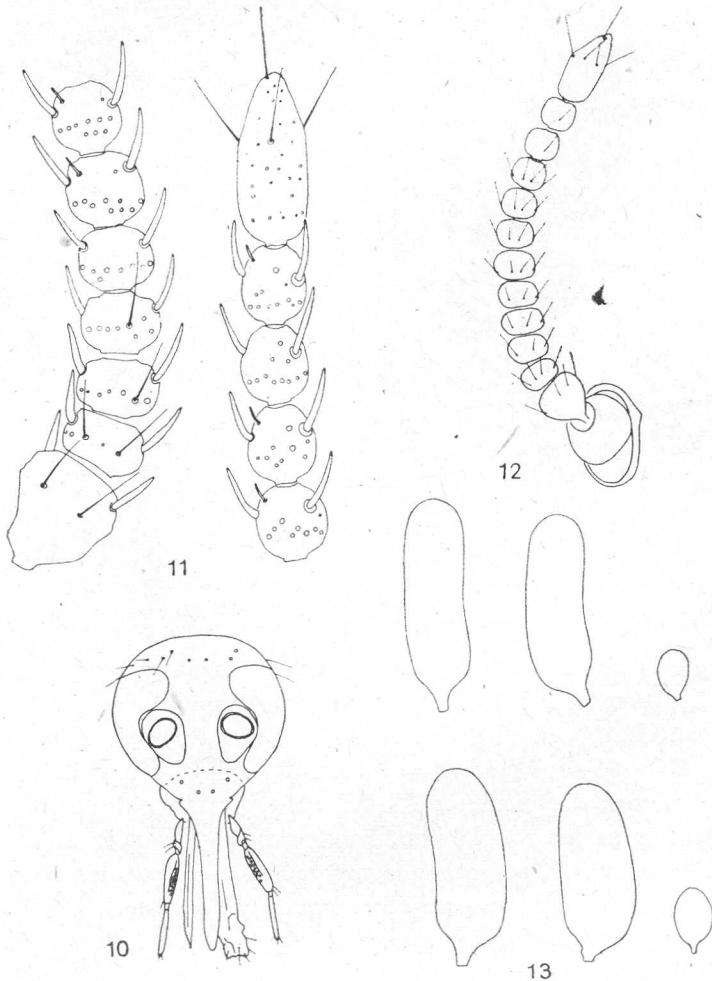
spines, one of them plate-shaped; parameres stout and relatively short, setose lobes of tergum IX widely ovoid or rectangular.

♀. Head (fig. 10) blackish brown, mouthparts long; flagellum (figs 11-12) 430 (380-464)  $\mu\text{m}$  long,  $n = 5$ ; sensilla chaetica always present on all flagellomeres, flagellomeres IX-XI usually with one sensillum chaeticum; palpus as long as labium, length of III+IV palp segments 241 (212-272)  $\mu\text{m}$ ,  $n = 7$ , sensorium composed of 3-4 irregular rows of sensorial pits; clypeus with two mesal and two lateral setae.

Thorax shining black, anepisternum without setae; wing transparent, 1.20-1.31 mm long; halter pale; legs blackish brown; fore tibia pale at tip, 3/4 of first and 1/4-1/2 of second tarsal segments of fore leg pale, whole or 3/4 of first and whole or 3/4 of second segments of middle tarsus pale, whole or almost whole two first tarsal segments of hind leg pale;

claws simple on all legs; fore and hind basitarsi with apical black spines, middle basitarsus with 2 basal, 2 apical, and 2-4 mesal black spines and 2-4 tactile median setae; tibial comb composed of four setae.

Abdomen pale, terga with small dark median patches, cerci and last segments dark; three spermathecae present (fig. 13): 87.3 (80-96)  $\times$  28.7 (26-32), 86.4 (80-90)  $\times$  28.4 (26-32), 24.5 (20-30)  $\times$  15.3 (12-16)  $\mu\text{m}$ .



10-13. Female of *Leptoconops camelorum*, 10 - head, 11, 12 - both sides of flagellum, 13 - spermathecae

## MATERIAL EXAMINED

30 km north of Biskra, oasis, 27 April 1981, 1 ♂, 7 ♀; Barika near Biskra, 27 April 1981, 1 ♂ on *Umbelliferae* flowers, 2 ♀.

Type material of *L. camelorum* does not exist and because of this the neotype is designated: ♀, 30 km north of Biskra, 27.IV.1981, leg. R. Szadziewski. The neotype is deposited in Muséum National d'Histoire Naturelle, Paris.

## DISTRIBUTION

The species recorded from Algeria, Caucasus and Middle Asia (Turkmenia).

## DISCUSSION

The fact of males being collected together with *L. camelorum* females in the same time and localities suggests that they belong to the same species. This species is very close to *L. irritans*, but can be easily distinguished using characters listed below.

*Leptoconops (L.) irritans* (Noé, 1905)

(Figs 14-16)

*Mycterotypus irritans* Noé, 1905: 118 (♀, Italy).

*Leptoconops irritans*: GOETSCHEBUER, 1934: 87 (combination).

*Microconops longipalpis* KIEFFER, 1923: 657 (♂, Biskra), n. syn.

*L. inopinatus* HUTTEL et HUTTEL, 1952: 45 (♂, South France), n. syn.

*L. bezzii*: RIOUX, DESCOURS, COLUZZI, 1966: 97 (Italy, France), nec Noé, 1905 (after CLASTRIER and COLUZZI, 1973).

*L. bezzii*: GOETSCHEBUER, 1939: 60 (Biskra), nec Noé, 1905 (after CLASTRIER and COLUZZI, 1973).

## MATERIAL EXAMINED

South France, Salin de Badon, Camargue, 1 ♂, 1 ♀; Capestang, fresh water, 1 ♀; saline water, 1 ♀. Leg. et det. J. Clastrier.

The new synonymy is established by a comparison of the South European specimens with the original descriptions.

*L. camelorum*

Larger species. Wing length of ♀ 1.2-1.3 mm, of ♂ 1.4 mm.

Female abdominal terga pale, last segments, cerci and small median patches on proximal terga dark.

*L. irritans*

Smaller species. Wing length of ♀ 1.1 mm, of ♂ 1.2 mm.

Female abdominal terga dark.

Spermathecae larger (fig. 13)

80-96 × 26-32

80-90 × 26-32

20-30 × 12-16

All female flagellomeres with sensilla chaetica.

Male hind leg with outer claw armed with long basal process (fig. 6).

Tergum IX of male genitalia with widely rounded or rectangular setose lobes. Parameres stout and relatively short (figs 7-8).

Spermathecae smaller (fig. 14)

70 × 30

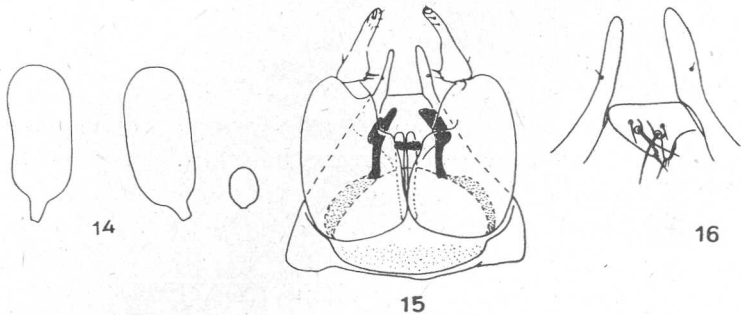
70 × 28

20 × 14

Female flagellomere XI without sensilla chaetica.

Male hind leg with outer claw simple.

Tergum IX of male genitalia with triangular setose lobes (fig. 16). Parameres slender and relatively long (fig. 15).



14-16. *Leptoconops irritans*, 14 — spermathecae, 15, 16 — male genitalia

## 2. *Leptoconops (Proleptoconops) hutsoni* Clastrier, 1974

(Figs 17-24)

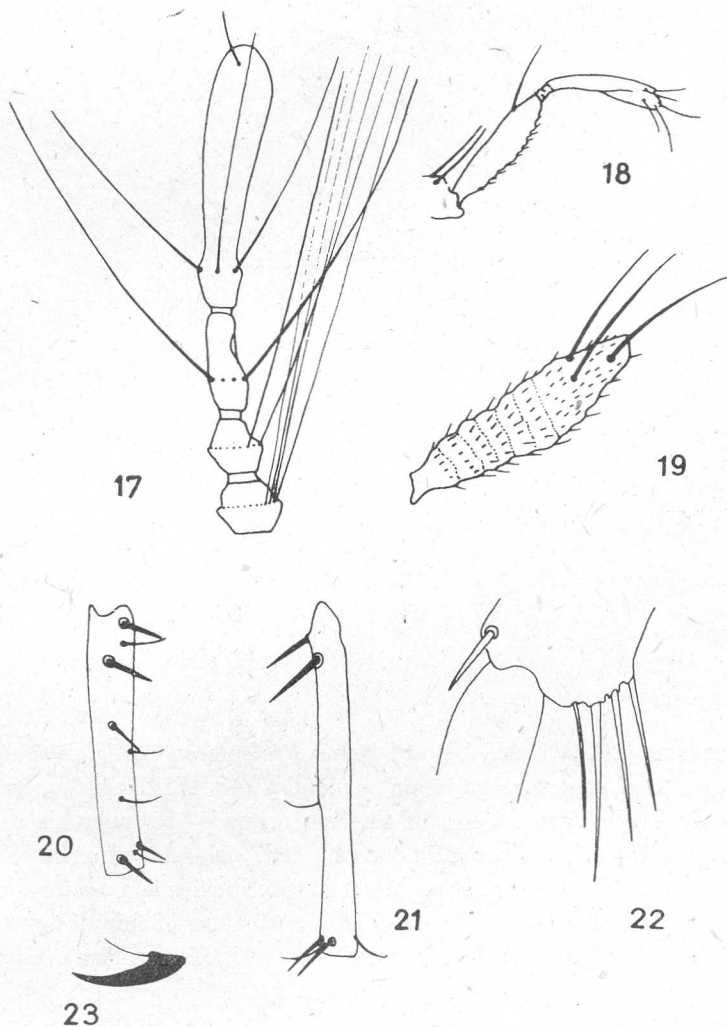
*L. (Proleptoconops) hutsoni* CLASTRIER, 1974: 232 (♀, Algeria).

### DESCRIPTION OF HITHERTO UNKNOWN MALE

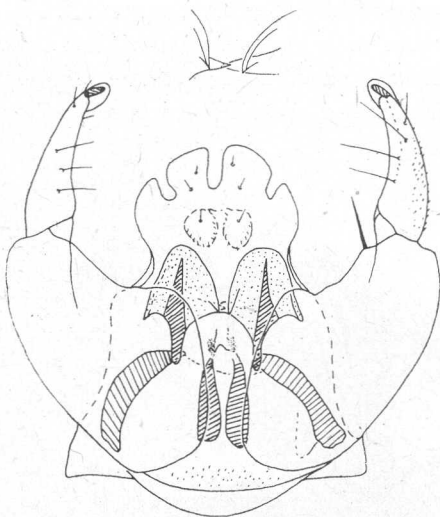
Head blackish brown; flagellum 488  $\mu\text{m}$  long; flagellomeres lengths as follows (in  $\mu\text{m}$ ): 74-20-20-20-24-24-24-24-24-24-26-44-116; last flagellomeres as on fig. 17; mouthparts somewhat shorter than head height; palpus as long as labium, slender (fig. 18), sensorial pits of third palp segment shallow, not visible (fig. 19); third palp segment 62  $\mu\text{m}$  and fourth 54  $\mu\text{m}$  long; clypeus with two mesal and three lateral setae.

Thorax black, anepisternum without setae; wing transparent, 1.02 mm long; halter pale; legs brown, tarsi somewhat paler; fore basitarsus with two basal, one mesal and two apical spines and two tactile setae (fig. 20); middle basitarsus with two basal and two apical black spines, and one mesal tactile seta (fig. 21); hind basitarsus with apical black spines only; tibial comb composed of four setae (fig. 22); claws simple on all legs with basal seta only (fig. 23).

Abdomen brown; genitalia: fig. 24; tergum IX expanded and rounded distally, apical portion with two submedian and two lateral wide lobes, submedian lobe with two small setae; aedeagus, gonostyle and parameres as in subgenus *Holoconops*; macule composed of two separated black patches.



17-23. Male of *Leptoconops hutsoni*, 17 - last flagellomeres, 18 - palpus, 19 - third palp segment, 20 - fore basitarsus, 21 - middle basitarsus, 22 - tibial comb, 23 - claw



24. Male genitalia of *Leptoconops hutsoni*

#### MATERIAL EXAMINED

Grarem near Constantine, 19 April 1981, 1 ♂ on *Umbelliferae*; 30 km north of Biskra, oasis, 27 April 1981, 6 ♀.

#### DISTRIBUTION

Algeria.

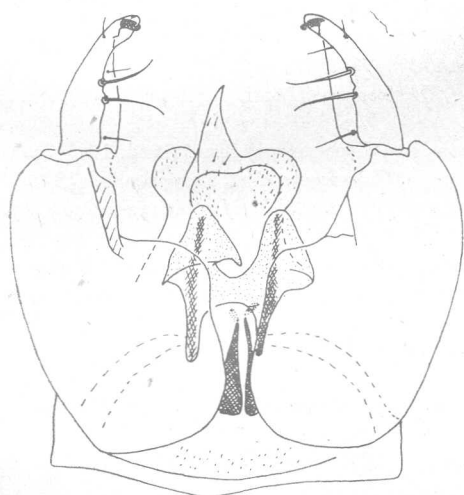
#### DISCUSSION

CLASTRIER (1974) based his subgenus *Proleptoconops* solely on female characters. The structure of male genitalia and third palp segment of *L. hutsoni* — the type species of this subgenus — support his decision.

*Leptoconops turkmenicus* MOLOTOVA, 1967, should also be included to subgenus *Proleptoconops*. It seems that this species is a senior synonym of *L. hutsoni*. According to the original descriptions of females two differences have been found: *L. turkmenicus* with third rudimentary spermatheca and individual sensory pit of third palp segment with short headed rod (sensilla ampullacea?) on the bottom; *L. hutsoni* without rudimentary spermatheca and individual sensory pit of third palp segment with pointed seta on the bottom. Probably the first character is unstable, in *L. turkmenicus* the rudimentary spermatheca reaches 20  $\mu\text{m}$ , i.e., only



2.5 times shorter than normal one but on the figure given in the original paper by MOLOTOVA the rudimentary spermatheca is very small. Amongst six females, I collected in Algeria, one has third pale spermatheca  $8\ \mu\text{m}$  long. The other character of *L. turkmenicus* is not confirmed by GUCEVIČ (1973) who stated that the sensorium is the same as in other species of the subgenus *Leptoconops*, and by this way is the same as in *L. hutsoni*.



25



26

25-26. Male genitalia of *Leptoconops laurae*

Now situation is more complicated, since SMATOV and AUEZOVA (1979) described male of *L. turkmenicus* which is typical of the subgenus *Leptoconops* species. I suppose that this male does not belong to the female of *L. turkmenicus*.

### 3. *Leptoconops (Holoconops) laurae* (Weiss, 1912)

(Figs 25, 26)

- Leptoconops laurae*: CLASTRIER, 1975: 599 (♂, Algeria).  
*L. laurae*: CLASTRIER, 1975: 30 (♀, Algeria, Tunisia, Libia).  
*L. mediterraneus* KIEFFER, 1921: 264 (♀, Algeria), n. syn.  
*L. mediterraneus*: KIEFFER, 1923: 655 (♂, Algeria).

Oumache near Biskra, 1 ♂, 7 ♀; Chegga near Biskra, 1 ♀; Biskra, *Umbelliferae*, 1 ♀.

The species known from North Africa: Libia, Algeria, Tunisia, Morocco.

A male now collected in Algeria with the same genitalia as figured by KIEFFER (1923) for *L. mediterraneus* exactly correspond to *L. lauræ* (figs 25, 26). *L. mediterraneus* of Russian authors concerns an other species.

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Accepted for publication  
on January 20th, 1983