

Uniwersytet Gdański
Katedra Zoologii Bezkręgowców

Ceratopogonidae (Diptera) from Algeria. VII. Stilobezzia and Kolenohoelea

Ceratopogonidae (Diptera) Algerii. VII. Stilobezzia i Kolenohoelea

RYSZARD SZADZIEWSKI

Synopsis. The study of a collection of biting midges made in northern Algeria resulted in the identification of two *Stilobezzia* and one *Kolenohoelea* species. *Stilobezzia pruefferi* sp. n. is described and illustrated. Diagnostic descriptions are presented for another two species. Variation in the apicolateral process of tergite IX of *Kolenohoelea calcarata* is discussed. *Stilobezzia aureola* Clastrier is a junior synonym of *S. sahariensis* Kieffer.

From Algeria, and North Africa, only three species of *Stilobezzia* Kieffer and no *Kolenohoelea* have previously been recorded. They are: *Stilobezzia sahariensis* Kieffer, *S. aureola* Clastrier, and *S. douryi* Clastrier. In the collection of biting midges made in north-eastern Algeria in 1981 (Szadziewski, 1983) I found two species of *Stilobezzia* and one *Kolenohoelea*. They are: *S. pruefferi* sp. n., *S. sahariensis*, and *K. calcarata*. Although a new *Stilobezzia* species is described in this paper, the total number of species of the genus in Algeria remains the same, because *S. aureola* is recognized below as a junior synonym of *S. sahariensis*.

Stilobezzia pruefferi sp. n.
(Figs. 1—11)

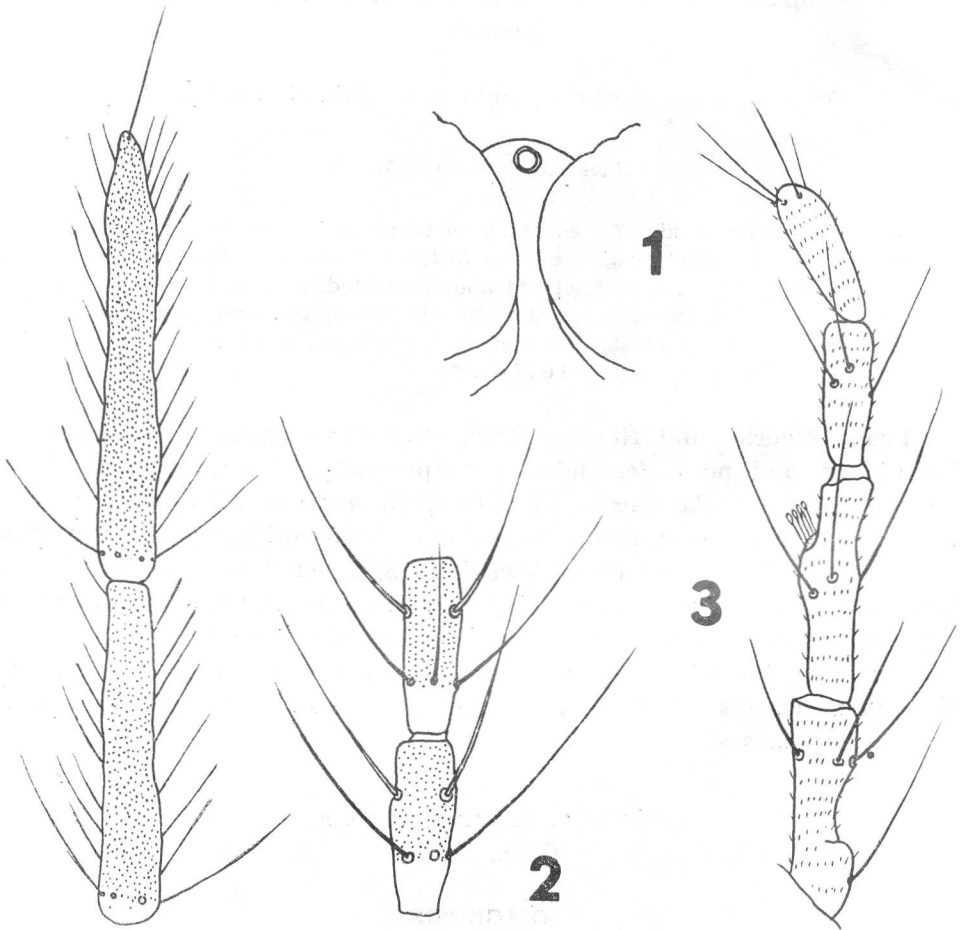
DIAGNOSIS

The species is distinguished by the following combination of characters: wing membrane with macrotrichia at wing tip; scutellum bears 9 long setae; parameres slender and long with sharply pointed smooth tip armed with a preapical tooth; gonocoxite with single seta on ventromesal surface above the aedeagus.

DESCRIPTION

FEMALE

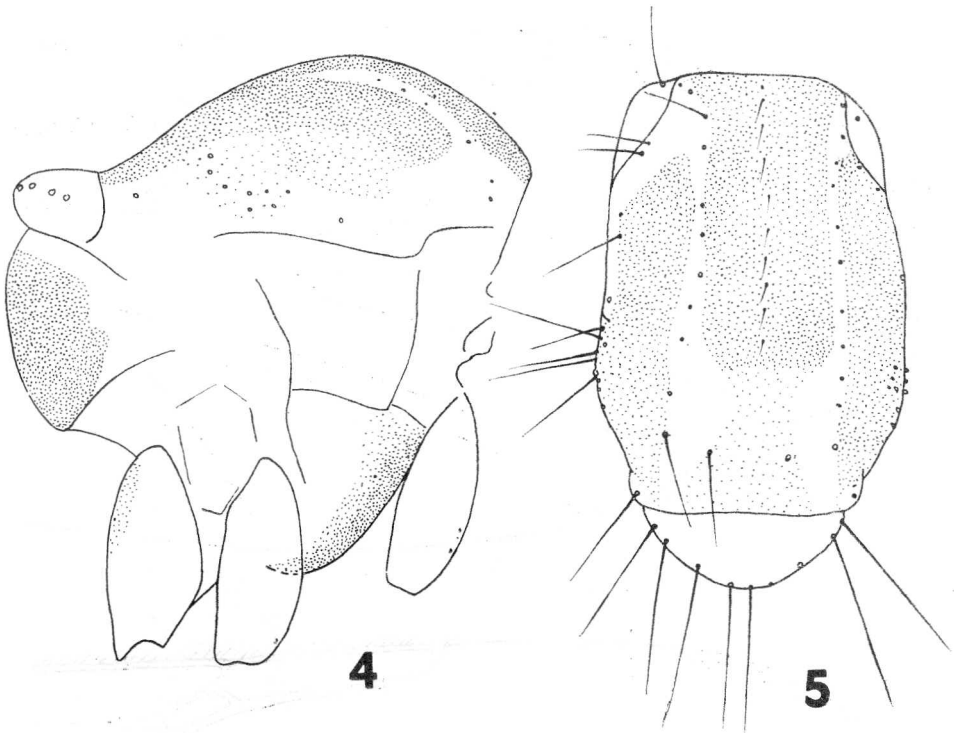
Head yellow. Eyes bare, narrowly separated (fig. 1). Antenna brown except for pale bases of all flagellomeres (fig. 2). Total length of flagellum 1245—1275 μm , antennal ratio 1.16. Proboscis long and pale, palpi brown. Third palpal segment slender, with shallow and small sensory pit (fig. 3), length 92—100 μm . Mandible armed with 6—8 coarse teeth.



Figs. 1—3. *Stilobezzia pruefferi* sp. n., female

1 — eyes separation, 2 — flagellomeres III, IV and XII, XIII, 3 — palpus

Thorax ochreous. Scutum with 3 indistinct brownish longitudinal stripes, scutellum yellow, postnotum brown except for the pale upper margin at scutellum. Anterior part of katepisternum brown. Scutum covered with short pubescence and long bristles arranged in setal groups

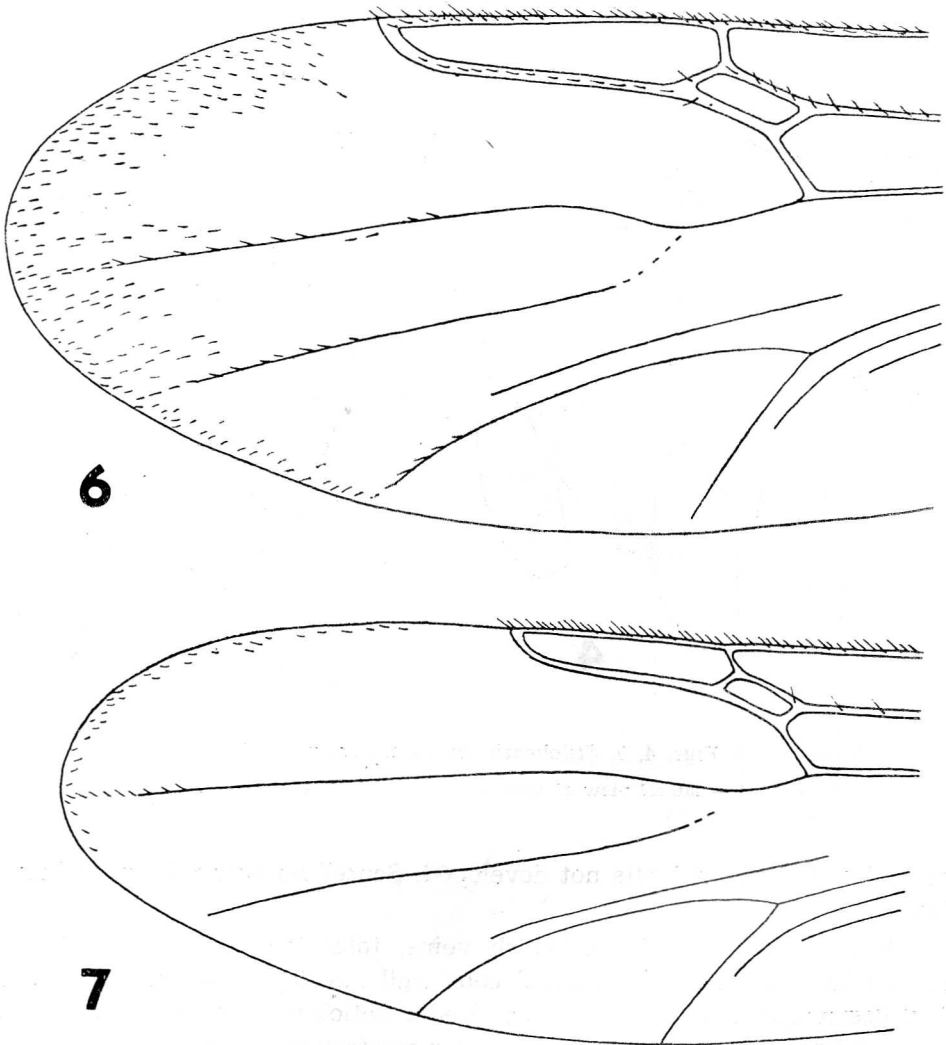
Figs. 4, 5. *Stilobezzia pruefferi* sp. n., male

4 — lateral view of thorax, 5 — dorsal view of thorax

as in fig. 5. Prescutal pits not developed. Scutellum bears 9 strong bristles.

Wing yellowish with brownish veins, total length 2.07 mm, costal ratio 0.73—0.74. Both first radial cells well developed, second one about 3 times longer than the first one. Media petiolate, base of M_2 obsolete. Wing membrane covered with distinct microtrichia, macrotrichia at wing tip present (fig. 6). Radial stem, R_1 at first radial cell, R_{4+5} at second radial cell, M_1 , M_2 , CuA_1 at the wing margin bear setae also (fig. 6). Halter pale.

Legs yellow except for hind coxae with a dark patch on its caudal basal surface and brownish fifth tarsal segments. Fore and middle coxae with 3—4 long frontal setae, hind coxa with a single short seta on caudal surface. Fore tibia with stout yellow tibial spur, tibial comb of hind leg composed of about 7 spines. Fore and hind basitarsi with 1 apical, middle basitarsus with 1 subbasal and 2 apical black spines. Second tarsomeres with 2 apical black spines. Hind basitarsus bears 2 rows of pale palisade setae. Fourth tarsomeres cordiform, with fine ventral sensory hairs and 2 bent blunt setae (fig. 8). Fifth tarsomeres similar on all legs. Claws

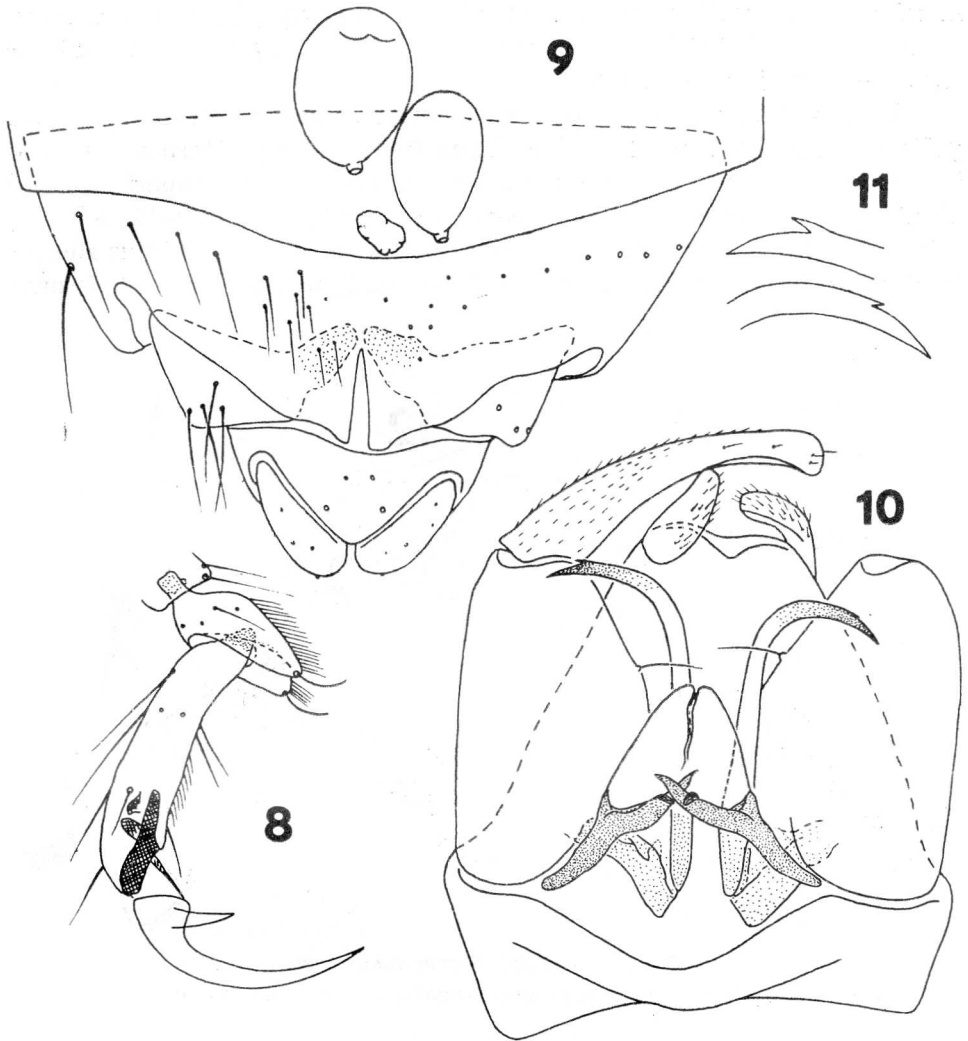


Figs. 6, 7. Distal part of wing of *Stilobezzia pruefferi* sp. n.

6 — female, 7 — male

strongly unequal, fused (fig. 8). Tarsal ratio of fore leg 2.04—2.06, of middle leg 2.07—2.30, of hind leg 2.00—2.03.

Whole abdomen including genital segments yellow. Genital segments VIII—X weakly sclerotized, broad. Sternite VIII with deep and narrow caudomedian cleft. Sternite IX divided into 2 halves fused with tergite IX (fig. 9). Two dark unequal and somewhat asymmetrical seminal capsules plus rudimentary one present. The larger one measuring $100 \times 54 \mu\text{m}$ and $90 \times 64 \mu\text{m}$, the smaller one $94 \times 50 \mu\text{m}$ and $84 \times 48 \mu\text{m}$ respectively ($n = 2$). Each functional seminal capsule with short neck.



Figs. 8—11. *Stilobezzia pruefferi* sp. n.

8 — distal tarsomeres of female hind leg, 9 — female genitalia, 10 — male genitalia,
11 — tip of parameres

MALE

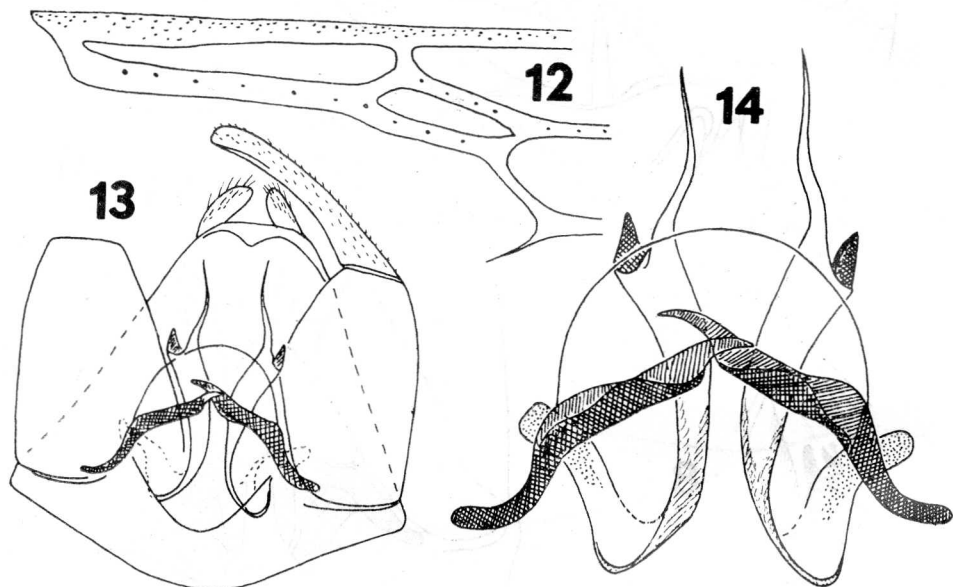
Darker than female and with stronger setae.

Eyes bare, contiguous above the antennae. Whole flagellum dark with almost black plume. Total length of flagellum 1230—1290 μm , antennal ratio 1.01—1.02. Proportions of the last 4 flagellomeres as follows: 20 — 37 — 50 — 53.5. Palpus slender. Third palpal segment 96—100 μm long, sensory pit smaller than in female.

Thorax with well developed dark pattern (figs. 4, 5). Scutellum bears 9 long bristles. Wing length 2.04—2.07 mm, costal ratio 0.66—0.68. Wing

membrane only with a few macrotrichia at wing tip (fig. 7). Claws short, equal, each with bifid apex. Tarsal ratio of fore leg 2.04—2.12, middle leg 2.14—2.39, hind leg 2.00.

Abdominal tergites more or less brown, sternites and whole genitalia yellow. Genitalia typical of the genus (figs. 10, 11). Sternite IX with broad shallow caudomedian excavation. Tergite IX long, tapering to the blunt apex bearing lobe-shaped cerci. Gonocoxite simple, with a single seta on ventromesal surface above the tip of aedeagus. Gonostylus slightly bent with blunt tip. Aedeagus with an oblique pair of dark brown,



Figs. 12—14. *Stilobezzia sahariensis*

12 — radial cells of female, 13 — male genitalia, 14 — aedeagus and parameres

double sinuate lateral sclerites with pointed tips crossing each other. Parameres well sclerotized, long and slender, with sharply pointed smooth apices armed with a subapical pointed tooth; apical third brown, curved ventrally or laterally; lateral apodemes relatively broad.

MATERIAL EXAMINED

Holotype — male, Algeria, Petite Kabylie, Sétif, 5 May 1981, on umbelliferous flowers, R. Szadziewski leg. Paratypes: 2 males, 2 females; same data as the holotype. The holotype will be deposited in the Institute of Zoology, Polish Acad. Sci., Warsaw, paratypes in the author's collection.

ETYMOLOGY

This species is named in honour of the late Professor Jan Prüffer, Polish entomologist, in recognition of his pioneer contributions to the study of insect sex pheromones and the Lithuanian and Polish butterflies.

DISCUSSION

The new species is closely related to *Stilobezzia lutacea* Edwards recorded from Great Britain (Edwards, 1926, 1929) and France (Clastrier, 1980), with the same general type of male genitalia. *S. lutacea* is a smaller species with shorter and bifid tips of parameres covered with small spines, and gonocoxites with a group of short setae just above the tip of aedeagus. *S. lutacea* has a variable number of long scutellar setae. According to Clastrier (1980) its scutellum bears 6 or 7, while according to Edwards (1926) 6—8 or even 9 bristles like *S. pruefferi*.

Stilobezzia sahariensis Kieffer
(Figs. 12—14)

Stilobezzia sahariensis Kieffer, 1923: 681 (♂, ♀, Algeria).
S. aureola Clastrier, 1963: 49 (♂, ♀, Algeria), syn. n.

DIAGNOSIS

A small and very pale species. Thorax ochreous with indistinct brownish scutal stripes, somewhat darker postnotum, anteprepronotum, front of katepisternum and anapleural plates. Scutellum yellow with 4—6 long setae. Legs and abdomen yellow. Wing pale with macrotrichia on apical third in female and at apex in male. Both first radial cells small (fig. 12). Wing length of female 1.37—1.44 mm, costal ratio 0.62—0.65, those of male 1.13—1.21 mm, 0.58—0.60 respectively. Male genitalia with characteristic parameres (figs. 13, 14).

MATERIAL EXAMINED

30 km north of Biskra, oasis, 27 April 1981, about 150 ♂, ♀. Tichi near Béjaia, 8 May 1981, 1 ♂. Szadziewski leg.

DISCUSSION

Kieffer (1923) described *S. sahariensis* from specimens collected during the spring time in Biskra (northern Algeria). The types have not been preserved. Fourty years later Clastrier (1963) found in Algeria two pale species of the genus similar to *S. sahariensis* and described them as

S. aureola (In Salah, central Algeria), and *S. douryi* (Massif du Hoggar and Tassili des Ajjer, southern Algeria), because he was unable to decide which of the species was actually the Kieffer's species. Present material collected near the type locality of *S. sahariensis* shows that *S. aureola* is its junior synonym.

Kolenohelea calcarata (Goetghebuer)

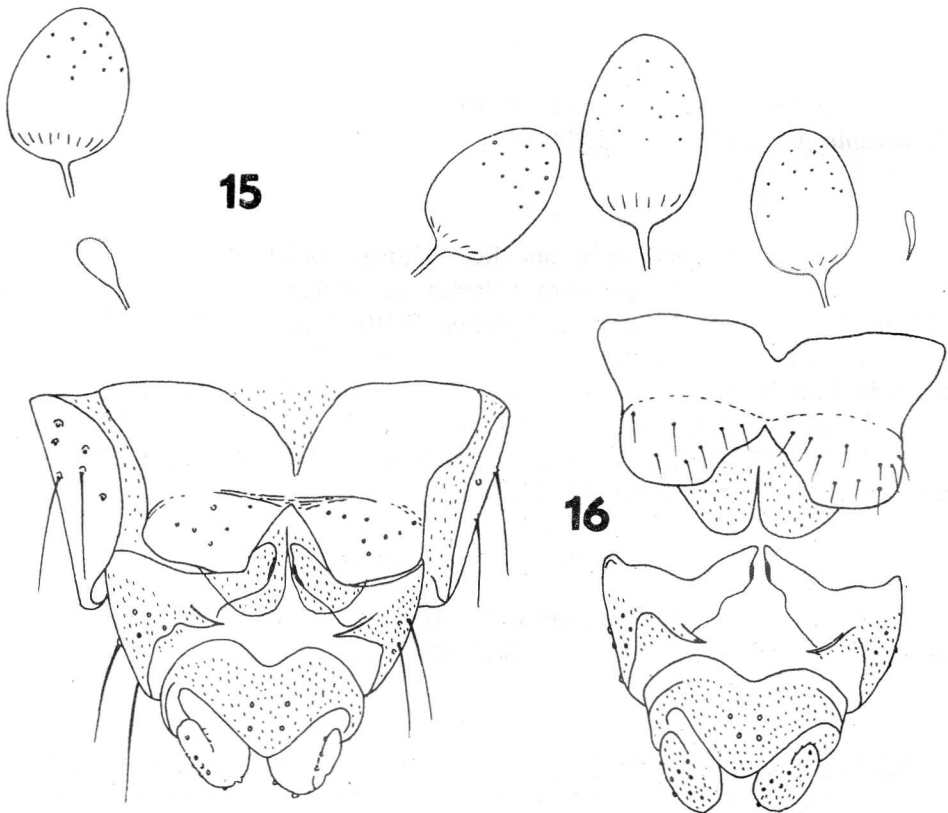
Monohelea calcarata Goetghebuer, 1920: 64 (♂, Belgium); Edwards, 1926: 411 (Great Britain).

Stilobezzia calcarata: Edwards, 1929: 426 (combination, Great Britain); Rieb and Delecolle, 1979: 240 (♂, ♀, France, = *S. sharpi*).

Kolenohelea sharpi: Remm, 1988: 40 (combination, = *S. fusca*).

Stilobezzia sharpi Edwards, 1929: 427 (♂, Great Britain).

Kolenohelea sharpi: Remm, 1988: 40 (combination, = *S. fusca*).



Figs. 15, 16. Female genitalia of *Kolenohelea calcarata*

15 — Tichi near Béjaia, 16 — Brzyno

Stilobezzia fusca Goetghebuer, 1932: 125 (♀, Belgium); Havelka, 1976: 237 (♀, West Germany); Havelka and Caspers, 1981: 31 (♂, ♀, West Germany).

DIAGNOSIS

Typical member of the genus. Wing length of female 1.06—1.30, costal ratio 0.71—0.76, those of male 0.98—1.30 mm and 0.59—0.64 respectively. Hind femora and tibiae enlarged. Female claws as in *Stilobezzia*. Female genitalia as in figs. 15, 16. Sternite VIII separated from tergite of the segment. Sternite IX divided into two halves fused with tergite IX; each half of the sternite with prominent broad anterior lobe and short pointed caudal projection. Sternite X with 4 long setae. Male genitalia as in figs. 17—31. Length of apicolateral process of tergite IX 58—104 μm (table).

Table

Certain measurements and indices concerning males of *Kolenohoelea calcarata*

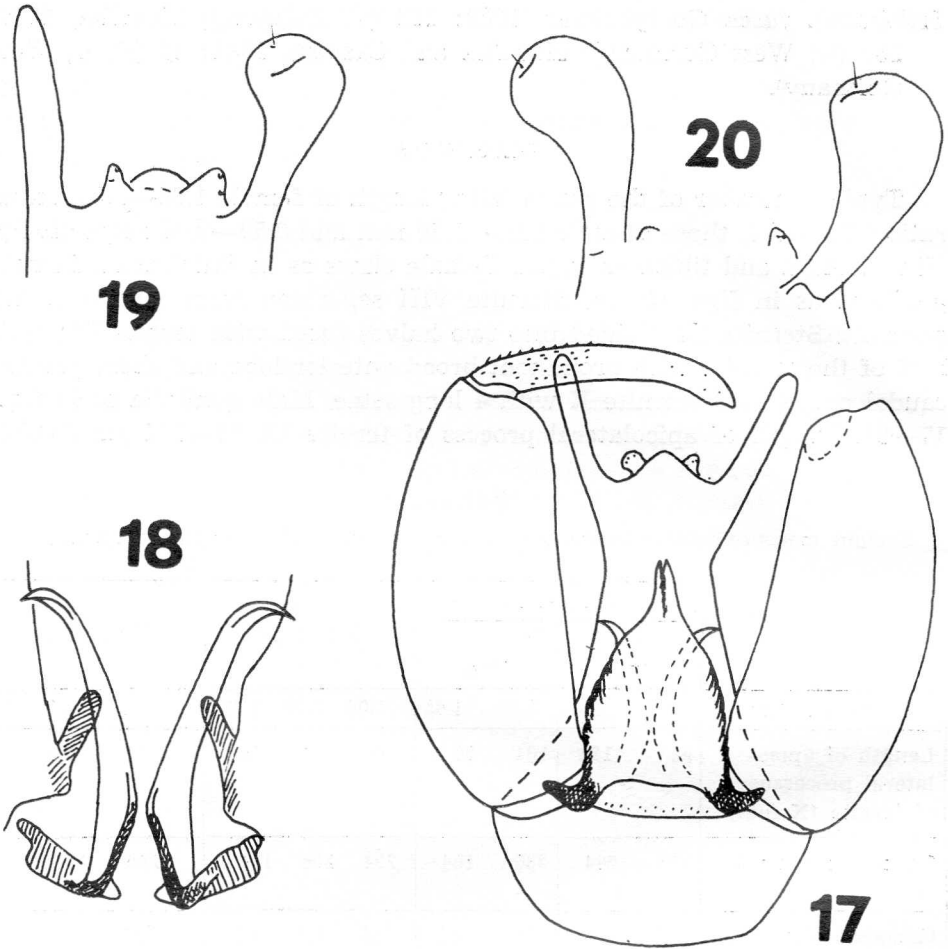
	Algeria				France			Poland	
	Souk El Tenine		Tichi						
Wing length (mm)	1.16	1.30	1.26	1.05	1.08	1.09	1.08	1.16	0.98
Length of apicolateral process of tergite IX (μm)	98	104	104	60	58	64	60	72	58
Gonocoxite/apicolateral process (μm)	276	284	236	184	204	208	184	208	180
Gonocoxite (apicolateral process)	2.8	2.7	2.3	3.1	3.5	3.3	3.1	2.9	3.1
Wing/apicolateral process	11.8	12.5	12.1	17.5	18.6	17.0	18.0	16.1	16.8
Wing/gonocoxite	4.2	4.6	5.3	5.7	5.3	5.2	5.9	5.6	5.4

MATERIAL EXAMINED

Algeria: Souk El Tenine, flowers of *Euphorbia* L., 14 April 1981, 2 ♂; Tichi near Béjaia, 8 May 1981, 2 ♂, 1 ♀.

France: Ichtratzheim near Strasbourg, 3 ♂, 1 ♀ from coll. J.P. Rieb.

Belgium: Holotype and paratype of *Monohoelea calcarata*, Genval, 17 June 1917, 2 ♂, leg. Tonnoir, R.I.Sc.N.B. Holotype female of *Stilobezzia fusca*, Houyet, 6 July 1928, M. Goetghebuer, R.I.Sc.N.B., 18073. From collection of Institut Royal des Sciences Naturelles de Belgique, Bruxelles.



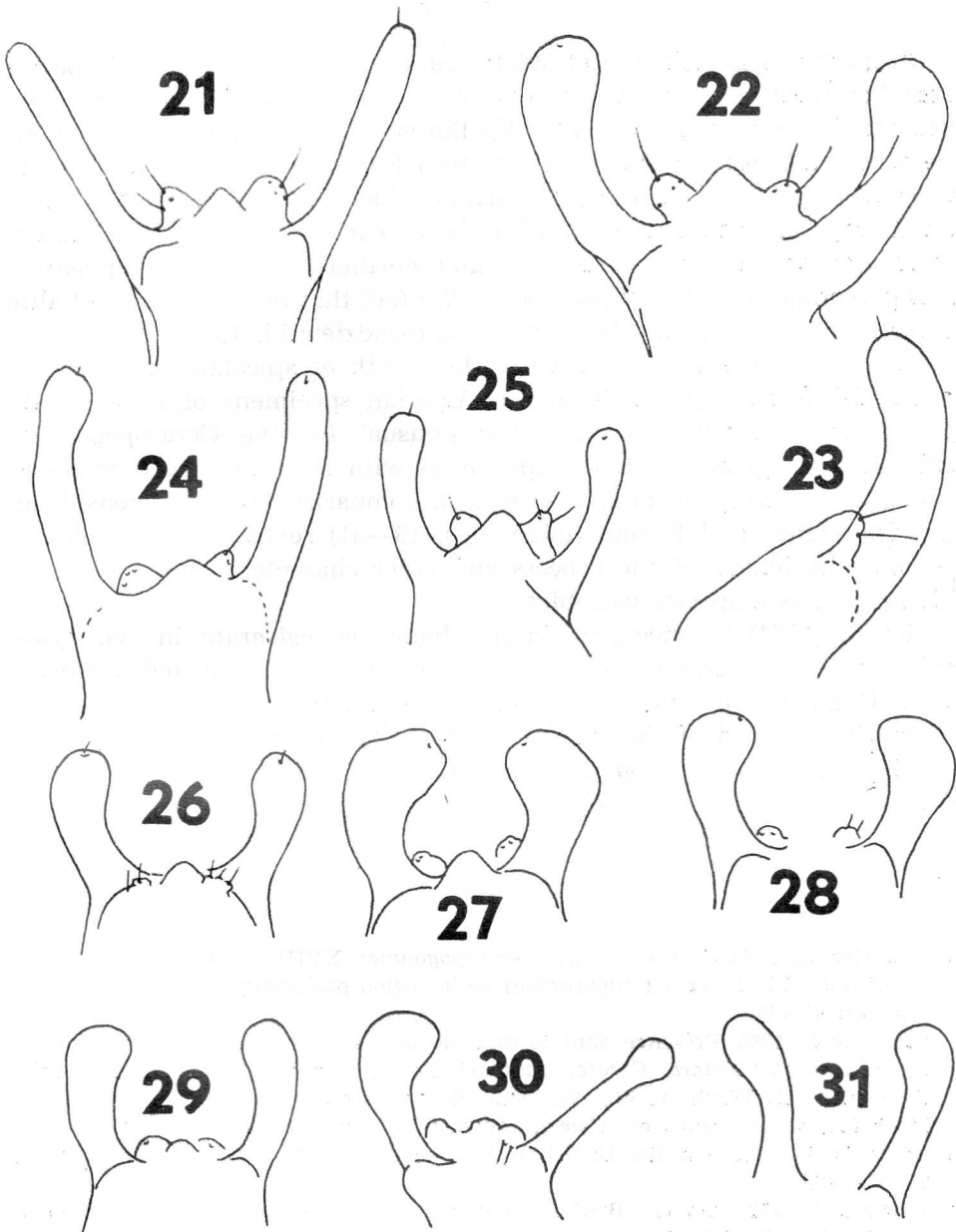
Figs. 17—20. *Kolenohoelea calcarata*, male

17 — genitalia, 18 — parameres, 19 — apicolateral processes of tergite IX of *Monohoelea calcarata*, holotype, Genva, 20 — apicolateral processes of tergite IX of *Monohoelea calcarata*, paratype, Genva

Poland: Gdańsk-Dolina Radości, 5 Aug. 1980, 1 ♀; Gdańsk-Dolina Abrahama, 11 June 1983, 1 ♂; Brzyno at Żarnowieckie Lake, 1 ♂, 1 ♀; Szadziewski leg.

DISTRIBUTION

North Africa (Algeria) and West Europe (northern France, Belgium, West Germany, Great Britain and the Baltic Sea coast in Poland). This is the first record of the species from North Africa and Poland.



Figs. 21—31. Apicolateral processes of tergite IX of *Kolenohalea calcarata* male
 21 — Souk El Tenine, 22, 23 — Souk El Tenine, ventral and lateral views, 24 — Tichi near
 Béjaia, 25 — Tichi near Béjaia, 26—28 — France, 29, 30 — Gdańsk, 31 — Brzyno

DISCUSSION

Kolenohelea De Meillon et Wirth, 1981 includes 12 described species from South Africa (8 spp.), the Republic of Guinea (3 spp.) and from the western Palaearctic (1 sp.). Probably the genus is distributed throughout the whole African continent and western Europe. It seems that *Kolenohelea* is a group of Afrotropical origin which entered to North Africa and Europe later than the late Miocene or early Pliocene (10—5 million years ago) when southern Europe and northern Africa had appeared. This presumption is also supported by the fact that in older Eocene Baltic amber this genus has not been recorded (Szadziewski, 1988).

There is a striking difference in the length of apicolateral process of tergite IX in male genitalia of the Algerian specimens of *K. calcarata* (table). Such a variation is rather unusual for the *Ceratopogonidae* and I have suspected that the specimens with long and short processes belong to different species. However, a comparison of specimens from Algeria, France and Poland (table, figs. 19—31) revealed no correlation between the length of the process and other characters, thus I consider this feature as a species variability.

Remm (1974) erroneously placed *Monohelea calcarata* in synonymy with *Ceratopogon crassinervis* Goetghebuer and repeated this error in the Catalogue of *Palaearctic Diptera* (Remm, 1988).

Previous record of the species from Ustka in Poland by Karl (1940) actually concern *Ceratopogon niveipennis* Meigen (present examination of specimens from Karl's collection).

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