

Ceratopogonidae (Diptera) from Algeria. III. New species
and new data on the genera *Brachypogon* KIEFF. and
Alluaudomyia KIEFF.

Ceratopogonidae (Diptera) Algerii. III. Nowe gatunki i nowe dane dotyczące
rodzajów *Brachypogon* KIEFF. i *Alluaudomyia* KIEFF

RYSZARD SZADZIEWSKI

Katedra Zoologii Bezkręgowców, Uniwersytet Gdański,
ul. Czołgistów 46, 81-378 Gdynia

ABSTRACT. Six *Brachypogon* species and five *Alluaudomyia* species were collected in northern Algeria. New species are described: *Brachypogon* (*Isohelea*) *clastrieri* sp. n., *B. (I.) jaroslavi* sp. n., *B. (s. s.) kokocinskii* sp. n., and *Alluaudomyia remmi* sp. n. Descriptions of the hitherto unknown female of *Brachypogon* (*Isohelea*) *sahariensis* and of the female of an unknown *Alluaudomyia* species are given. *Ceratopogon ajjerensis* CLASTRIER, 1961, is a junior synonym of *Brachypogon* (*Isohelea*) *vallanti* (MAYER, 1955).

INTRODUCTION

On the Fifth International Symposium on *Ceratopogonidae*, Strasbourg, 1982, Dr. William GROGAN presented his new concept of relations between the genera *Ceratopogon* MEIG., *Isohelea* KIEFF., and *Brachypogon* KIEFF. According to him *Isohelea* should be treated as a subgenus of the genus *Brachypogon*.

In the papers of VAILLANT (1954), MAYER (1955) and CLASTRIER (1961) four *Brachypogon* species and four *Alluaudomyia* species were recorded from Algeria (see the table). *Ceratopogon bourioni* described

Species of the *Brachypogon* and *Alluaudomyia* genera recorded from North Africa and Algeria

North Africa	Algeria	
	Previous records	Present record
1. <i>Brachypogon (Isohelea) clastrieri</i> sp. n.	—	+
2. <i>B. (I.) jaroslavi</i> sp. n.	—	+
3. <i>B. (I.) pasquieri</i> (CLASTRIER, 1961)	CLASTRIER, 1961	+
4. <i>B. (I.) sahariensis</i> (CLASTRIER, 1961)	CLASTRIER, 1961	+
5. <i>B. (I.) saxatilis</i> (CLASTRIER, 1961), comb. n.	CLASTRIER, 1961	—
6. <i>B. (I.) vaillanti</i> (MAYER, 1955)	MAYER, 1955; CLASTRIER, 1961	+
7. <i>B. (s. str.) kokocinskii</i> sp. n.	—	+
8. <i>Alluaudomyia fimbriatinervis</i> CLASTRIER, 1958	CLASTRIER, 1961	—
9. <i>A. hygropetrica</i> VAILLANT, 1954	VAILLANT, 1954; MAYER, 1955; CLASTRIER, 1961	+
10. <i>A. marmorata</i> (C., I., M., 1921)	CLASTRIER, 1961	+
11. <i>A. melanosticta</i> (INGR. et MACFIE, 1922)	—	—
12. <i>A. meridiana</i> CLASTRIER, 1978	—	+
13. <i>A. nilogenes</i> (KIEFFER, 1925)	—	—
14. <i>A. remmi</i> sp. n.	—	+
15. <i>A. sp. indet.</i>	—	+

by CLASTRIER (1961) from Algeria now is placed in the genus *Nannohelea* GROGAN et WIRTH, 1980.

For this study 191 specimens of the genus *Brachypogon* and 6 specimens of the genus *Alluaudomyia* were used. General notes on the *Ceratopogonidae* collection from Algeria are given in my older paper (SZADZIEWSKI, 1983).

I am much indebted to Dr. J. CLASTRIER (Museum National d'Histoire Naturelle, Paris) for his reading the manuscript and his valuable suggestions.

REVIEW OF THE SPECIES RECORDED

1. *Brachypogon (Isohelea) clastrieri* sp. n.

(Figs 1-5)

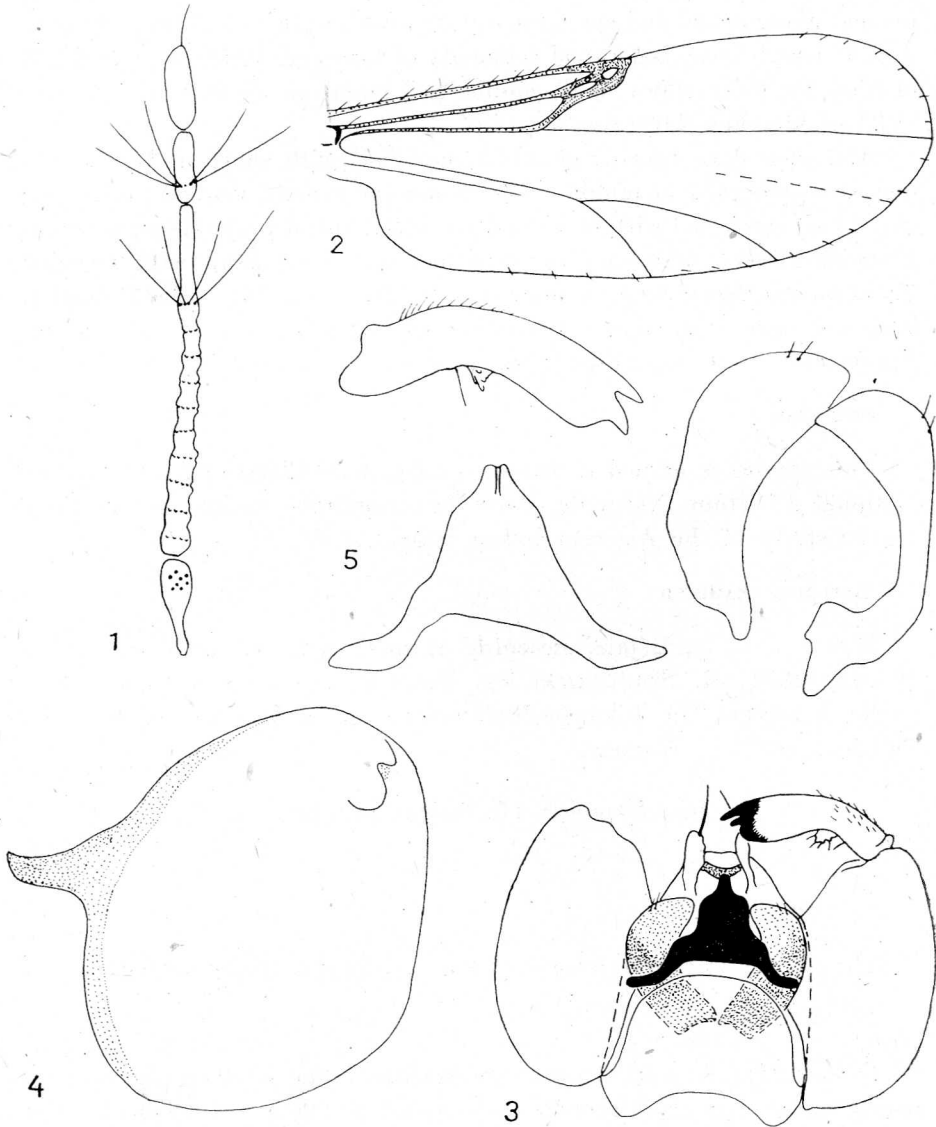
DIAGNOSIS

Male is characterized by long gonostyles with one ventral and two apical projections.

DESCRIPTION

Female unknown.

Male. Head dark brown; antenna dark brown with flagellomeres II-XI fused (fig. 1); flagellomeres lengths as follows (in μm): I = 78



1-5. *Brachypogon (Isohelea) clastrieri* sp. n., male, 1 — flagellum, 2 — wing, 3-5 — genitalia

(74-80), II-XI = 299 (288-308), XII = 60 (58-62), XIII = 75 (70-80), $n = 3$; palpus brown, eyes densely pubescent.

Thorax dark brown, mesonotum shining black; halteres pale; wing (fig. 2) somewhat grayish, veins well visible; second radial cell shorter than first; vein M_2 weakly visible distally; sparse and small macrotrichia present along apical and caudal margins; wing length 1.05 (1.00-1.09) mm, $n = 5$; legs brown, 1-4 tarsal segments of fore and middle legs and 2-4 of hind leg pale; claws small, simple and equal on all legs; tarsal ratio (TR) of hind leg 2.00, $n = 5$.

Abdomen dark brown; genitalia (figs 3-5) with short and stout gonocoxite; gonostyle at middle with triangular setosed ventral projection; distal half expanded with two slender pointed apical projections; sternum IX with distal margin convex; tergum IX rather narrow with rounded distal margin; cerci large; aedeagus stout, basal arms long, distal portion long and stout with smaller somewhat bilobed apical portion; parameres simple and stout, somewhat bent, near tip two setae.

ETYMOLOGY

This species is named in honour of Dr. Jean Clastrier from Museum National d'Histoire Naturelle, Paris, in recognition of his contributions to the study of the Algerian biting midges.

MATERIAL EXAMINED

Holotype — ♂, Béjaia, sweeping at rocks splashed with sea water, 10 May 1981, R. Szadziewski leg. Paratypes — 8 ♂, the same data as the holotype. The holotype is deposited in the Institute of Zoology, Polish Acad. Sci., Warsaw.

2. *Brachypogon (Isohelea) jaroslavi* sp. n.

(Figs 6-15)

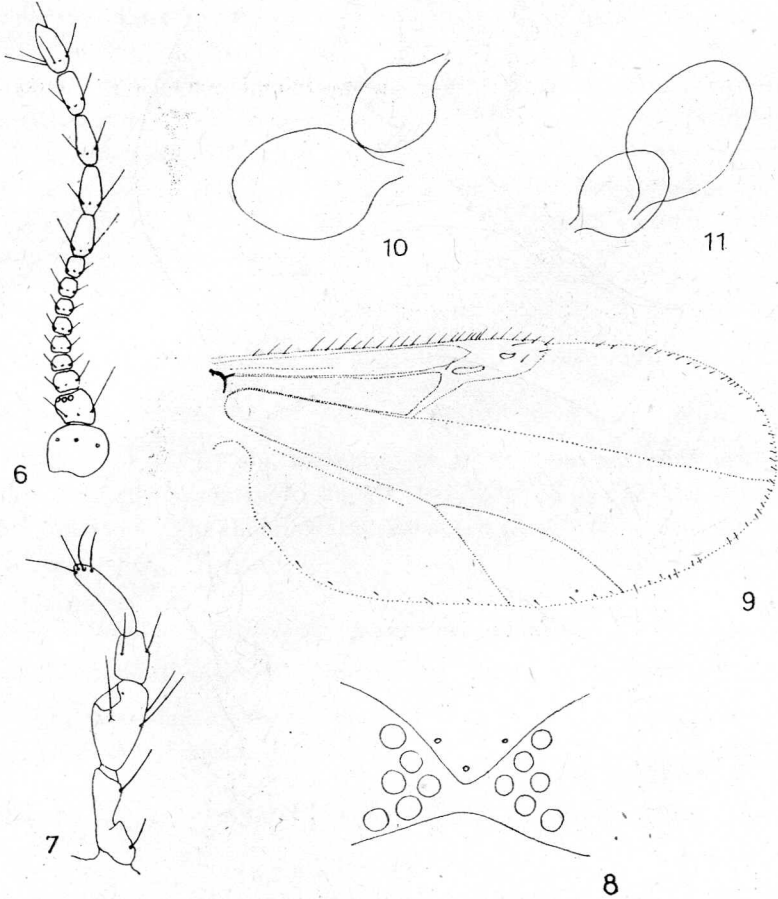
DIAGNOSIS

The species is characterized by a stout, almost triangular gonostyle.

DESCRIPTION

Female. Head brown; antenna brown with 13 flagellomeres (fig. 6), first flagellomere with three sensilla coeloconica; flagellomeres mean lengths as follows (in μm): 26-16-14-14-16-16-17-18-38-43-45-38-43, $n = 3$; palpus brown (fig. 7); eyes densely pubescent, contiguous (fig. 8).

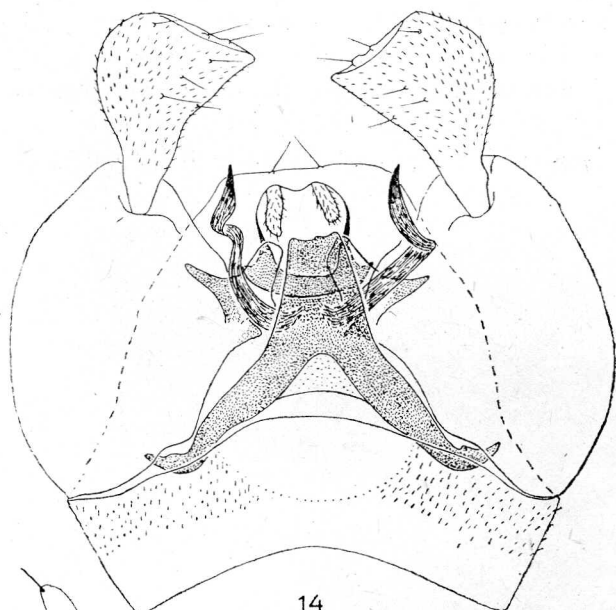
Thorax black, mesonotum shining black; halteres pale; wing transparent (fig. 9); second radial cell smaller than first; vein M_2 absent; membrane along distal and caudal margins with sparse macrotrichia; wing length 0.94 (0.93–0.95) mm, $n = 3$; legs blackish brown, 1–4 tarsal segments of fore and middle legs and 2–4 of hind leg paler; distal part



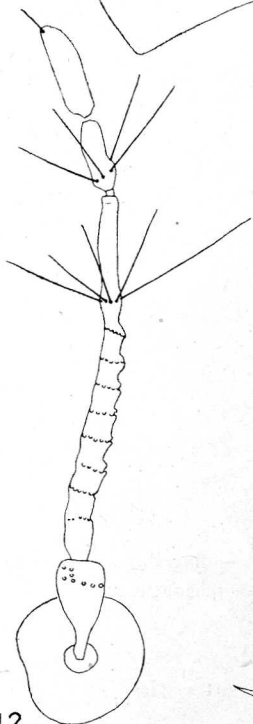
6–11. *Brachypogon (Isohelea) jaroslavi* sp. n., female, 6 – flagellum, 7 – palpus, 8 – eye separation, 9 – wing, 10, 11 – spermathecae

of femur and proximal and distal part of tibia of fore leg paler; claws long and unequal with inner basal teeth; tarsal ratio (TR) 2.21 (2.05–2.35), $n = 3$.

Abdomen dark brown, two unequal spermathecae (figs 10–11): 76–82 × 44–48 μm and 52–58 × 32–34 μm , $n = 3$.



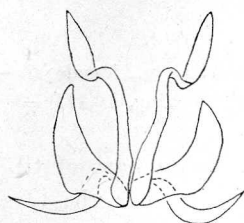
14



12



13



15

12-15. *Brachypogon (Isohelea) jaroslavi* sp. n., male, 12 — flagellum, 13 — palpus,
14 — genitalia, 15 — parameres

Male. Similar to female with the usual sexual differences.

Antenna with flagellomeres II–XI fused (fig. 12), flagellomeres lengths as follows (in μm): I–XI = 352 (328–380), XII = 50 (46–58), XIII = 74 (68–82), $n = 5$; third palp segment with small sensory pit (fig. 13).

Wing length 0.94 (0.88–1.00) mm, $n = 4$; macrotrichia as in female, but scarcer; claws small, simple and equal on all legs; TR of hind leg 1.81 (1.77–1.86), $n = 5$.

Genitalia (fig. 14); gonocoxite stout with triangular ventral expansion; gonostyle stout, short and almost triangular, about 1.5 times longer than wide; sternum IX with distal margin weakly convex; tergum IX broad and simple; aedeagus stout with large blunted distal projection; parameres (fig. 15) composed of three projections, ventral projection longest, with twisted distal portion.

ETYMOLOGY

This species is named in honour of Dr. Jarosław Buszko.

MATERIAL EXAMINED

Holotype — ♂, Béjaia, sweeping at rocks splashed with sea water, 10 May 1981, R. Szadziewski leg. Paratypes — 5 ♂, 5 ♀, the same data as the holotype. The holotype is deposited in the Institute of Zoology, Polish Acad. Sci., Warsaw.

3. *Brachypogon (Isohelea) pasquieri* (Clastrier, 1961), comb. n.

Ceratopogon (Isohelea) pasquieri CLASTRIER, 1961: 402 (♂, ♀, Algeria).

Béjaia, sweeping at rocks splashed with sea water, 23 ♂, 18 ♀.

Distribution: Algeria.

4. *Brachypogon (Isohelea) sahariensis* (Clastrier, 1961), comb. n.

(Figs 16–19)

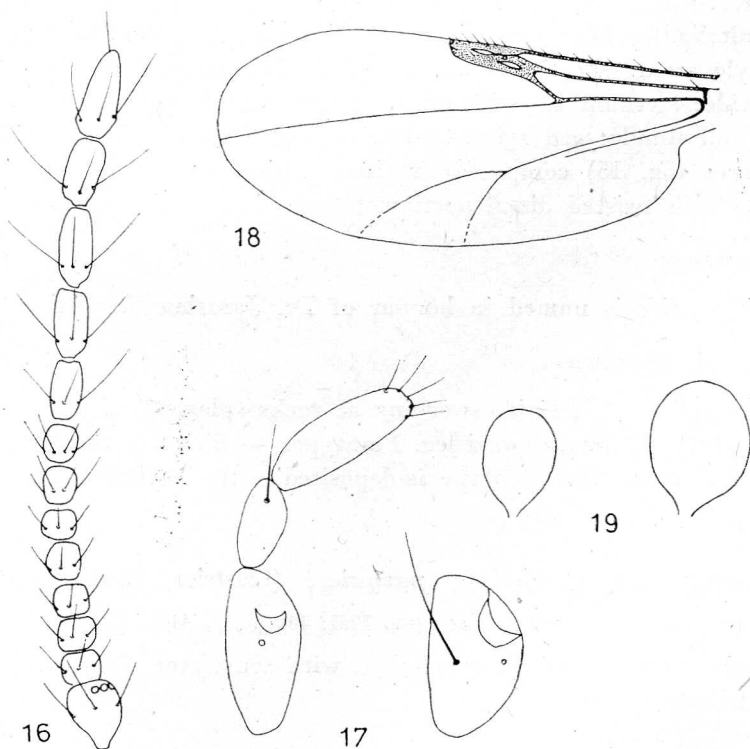
Ceratopogon (Isohelea) sahariensis CLASTRIER, 1961: 722 (♂, Algeria).

DESCRIPTION OF HITHERTO UNKNOWN FEMALE

Head dark brown; antenna brown with 13 flagellomeres (fig. 16), first flagellomere with three sensilla coeloconica; flagellomeres mean lengths as follows (in μm): 34.0–13.8–13.8–15.3–15.8–16.0–17.3–18.0–28.4–31.2–33.2–30.8–38.0, $n = 5$; palpus (fig. 17) brown, sensory pit usual; eyes densely pubescent, contiguous.

Thorax dark brown, mesonotum shining black; halteres grayish;

wing (fig. 18) uniformly grayish, veins somewhat darkened, well visible, first and second radial cells small and equal, vein M_2 absent, wing membrane without macrotrichia; wing length 0.77 (0.76–0.81) mm, $n = 10$; legs dark brown, 1–4 tarsal segments of fore and middle legs and 2–4 of hind leg pale; claws unequal on all legs with inner basal teeth; tarsal ratio (TR) of hind leg 2.06 (2.00–2.11), $n = 7$.



16–19. *Brachypogon (Isohelea) sahariensis*, female, 16 — flagellum, 17 — palpus, 18 — wing, 19 — spermathecae

Abdomen uniformly dark brown; two unequal spermathecae (fig. 19) with necks: $40\text{--}42 \times 60\text{--}66$ and $30\text{--}34 \times 50\text{--}52$ μm , $n = 8$.

Material examined: 30 km north of Biskra, Garem near Constantine — on *Umbelliferae* flowers, Akbou, 14 ♂, 27 ♀.

Distribution: Algeria — Sahara, Petite Kabylie.

5. *Brachypogon (Isohelea) vaillanti* (Mayer, [1955]), comb. n.

Helea vaillanti MAYER, 1955: 111 (♂, Algeria).

Ceratopogon (Isohelea) ajjerensis CLASTRIER, 1961: 408 (♂♀, Algeria), n. syn.

C. (I.) ajjerensis: REMM and ŽOCOLEV, 1968: 841 (Crimea).

C. (I.) ajjerensis: REMM, 1974: 55 (♂, ♀, Crimea, Caucasus).

Barika — on *Umbelliferae* flowers, Akbou, 8 ♂.

Mediterranean species known from Algeria, Crimea and Caucasus.

The synonymy is established by comparison of the original descriptions and figures with the specimens now collected.

6. *Brachypogon* (s. str.) *kokocinskii* sp. n.

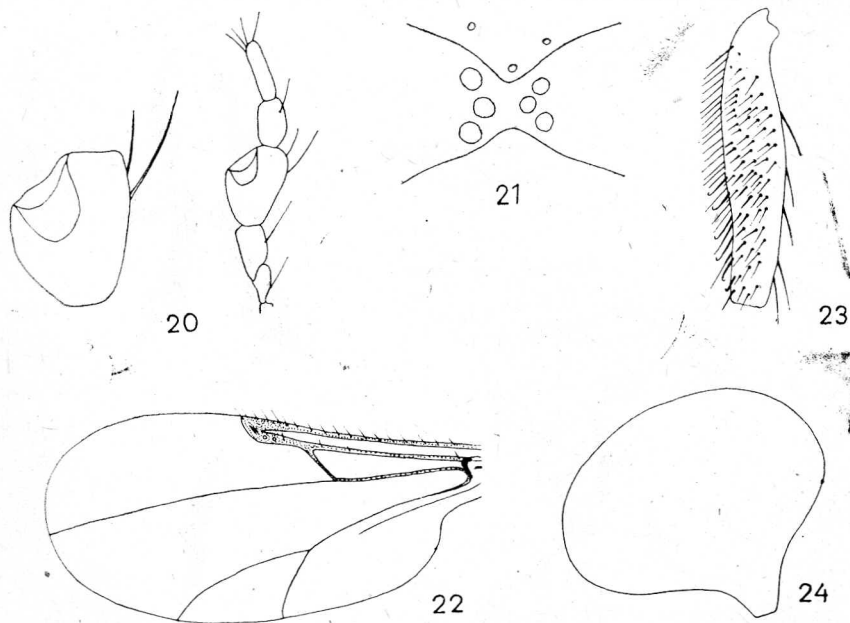
(Figs 20–28)

DIAGNOSIS

Male genitalia with simple S-shaped parameres, female with one asymmetrical spermatheca.

DESCRIPTION

Female. Head dark brown; antenna dark brown with 13 flagellomeres; flagellomeres mean lengths as follows (in μm): 40.0–16.5–16.0–16.0–16.0–16.0–16.7–18.0–20.7–20.7–30.0–27.3–31.3, $n = 3$; palpus



20–24. *Brachypogon* (s. str.) *kokocinskii* sp. n., female, 20 — palpus, 21 — eye separation, 22 — wing, 23 — hind basitarsus, 24 — spermatheca

(fig. 20) brown, sensory pit deep; eyes pubescent, contiguous (fig. 21).

Thorax dark brown; halteres dark; wing (fig. 22) grayish, veins well visible, first and second radial cells absent, vein M_2 absent, wing membrane without macrotrichia; wing length 0.72 (0.68–0.78) mm, $n = 7$; legs brown, somewhat paler than thorax, femora somewhat enlarged; distal half of hind basitarsus with 5–10 hooked setae (fig. 23); tarsal ratio (TR) of hind leg 1.87 (1.72–2.00), $n = 4$; claws rather long, somewhat unequal, inner basal teeth present.

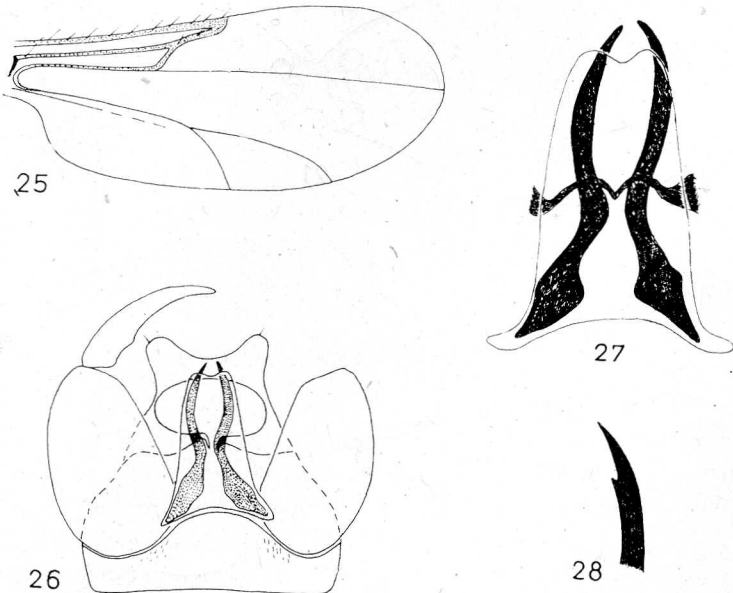
Abdomen uniformly dark brown; one asymmetrical spermatheca (fig. 24): 61.3 (58–64) \times 56.0 (50–58) μm , $n = 3$.

Male. Similar to female with the usual sexual differences.

Antenna with flagellomeres II–XI fused; flagellomeres lengths as follows (in μm): I = 71.0 (70–72), II–XI = 253.3 (232–276), XII = 49.0 (48–52), XIII = 53.2 (50–64), $n = 6$.

Wing (fig. 25) 0.76 (0.67–0.90) mm long, $n = 8$; TR of hind leg 1.82 (1.63–2.00), $n = 8$.

Genitalia (fig. 26): parameres long, separated, somewhat S-shaped, at apical portion small tooth (figs 27, 28); aedeagus almost rectangular, distally slender, basal arms short, apical margin concave.



25–28. *Brachypogon* (s. str.) *kokocinskii* sp. n., male, 25 — wing, 26 — genitalia, 27 — aedeagus and parameres, 28 — tip of paramere

ETYMOLOGY

This species is named in honour of Dr. Wiesław Kokociński from Nicholas Copernicus University, Toruń, in recognition of his help during my trip to Algeria.

MATERIAL EXAMINED

Holotype — ♂, Les Falaises near Jijel, 15 April 1981, R. Szadziewski leg. Paratypes — Les Falaises near Jijel, 15 April 1981, 1 ♂; Tichi near Béjaia, 8 May 1981, 4 ♂, 3 ♀; Grarem near Constantine, 19 April 1981, 51 ♂, 15 ♀; Ras Isly near Sala Bey, 24 April 1981, 37 ♂, 10 ♀. The holotype is deposited in the Institute of Zoology, Polish Acad. Sci., Warsaw.

7. *Alluaudomyia hygropetrica* Vaillant, 1954

A. hygropetrica VAILLANT, 1954: 228 (♂, ♀, France, Corsica, Algeria).

A. hygropetrica: MAYER, 1955: 111 (♀, Algeria).

A. hygropetrica: CLASTRIER, 1961: 429 (♀, Algeria).

Tichi near Béjaia, 1 ♀.

Mediterranean species known from France, Corsica and Algeria.

8. *Alluaudomyia marmorata* (C., I., M., 1921)

Prionognathus marmoratus CARTER, INGR. et MACFIE, 1921: 312 (♂, ♀ Ghana).

A. marmorata: CLASTRIER, 1961: 428 (♂, ♀, Algeria).

Chegga near Biskra, mineral spring area, 1 ♂ 1 ♀.

Afrotropical species. In Palaearctic Region recorded from Algerian Sahara only.

9. *Alluaudomyia meridiana* Clastrier, 1978

A. meridiana CLASTRIER, 1978: 25 (♂, ♀, France).

Grarem near Constantine, 1 ♂.

Mediterranean species described from southern France. From North Africa and Algeria recorded for the first time.

10. *Alluaudomyia remmi* sp. n.

(Figs 29–34)

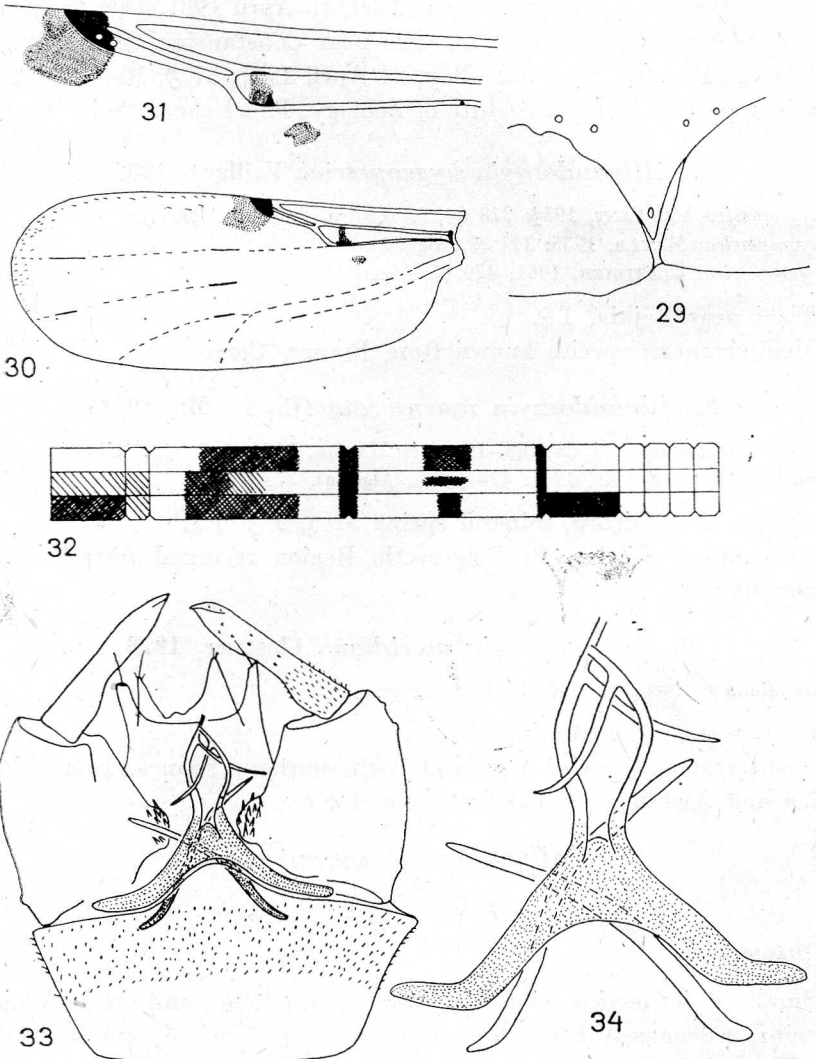
DIAGNOSIS

Small species having wing with three dark patches and six darkenings on veins, aedeagus with two long and forked processes, parameres rodlike and X-crossed.

DESCRIPTION

Female unknown.

Male. Head pale; antenna yellow, three last flagellomeres somewhat darkened; plume yellow, flagellomeres II-X fused; flagellomeres lengths as follows (in μm): I = 74, II-X = 240, XI = 60, XII = 46, XIII = 64; palpus yellow, five segmented, sensory pit absent; eyes bare, narrowly contiguous (fig. 29).



29-34. *Alluaudomyia remmi* sp. n., male, 29 - eye separation, 30, 31 - wing, 32 - colour pattern of legs, 33 - genitalia, 34 - aedeagus and parameres

Thorax yellow, proximal part of mesonotum, triangular patch before scutellum and middle of scutellum brownish, scutellum with two setae; halteres very pale; wing (figs 30–31) pale with three dark patches — at tip of radial veins, in distal part of basal cell, and somewhat below and proximally to the latter one; additionally six parts of veins darkened; wing membrane with macrotrichia in 1–3 rows along margin in cell r_5 and m_1 ; wing length 0.76 mm; legs yellow with brownish rings (fig. 32); tarsal ratio (TR) 2.00.

Abdomen pale, with darkened proximal portions of tergites; genitalia (fig. 33) dark; gonocoxite rather stout, ventral expansion with spines; gonostyle short and straight, at middle slender; aedeagus with long basal arms, aedeagal arch low, two very long and forked distal processes (fig. 34); parameres rodlike, X-crossed.

ETYMOLOGY

This species is named in honour of Dr. Hans Remm, Tartu University, Estonia, in recognition of his contributions to the study of the Palaearctic *Ceratopogonidae*.

MATERIAL EXAMINED

Holotype — ♂, Chegga near Biskra, 2 May 1981, mineral spring area, R. Szadziewski leg. The holotype is in the author's collection.

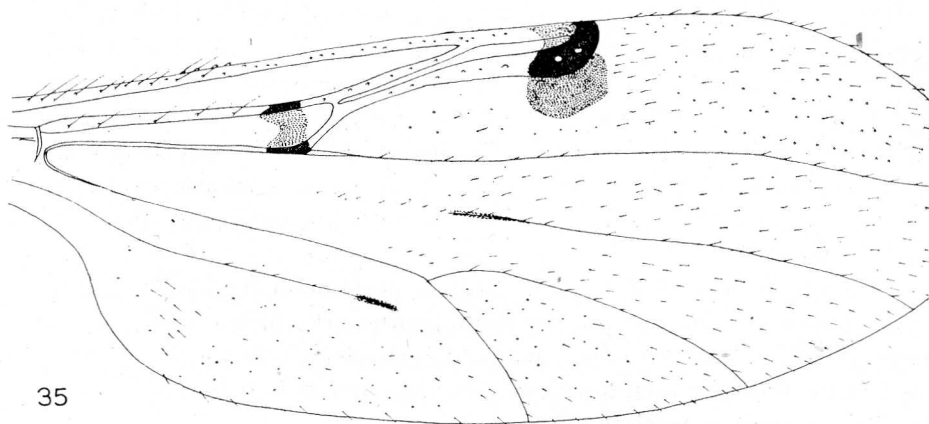
II. *Alluaudomyia* sp. indet.

(Figs 35–37)

DESCRIPTION

Female. Head brownish, palpus yellow with two last segments brownish, sensory pit small; eyes bare, contiguous; basal portions of proximal flagellomeres pale, distal brownish; distal flagellomeres almost whole brownish.

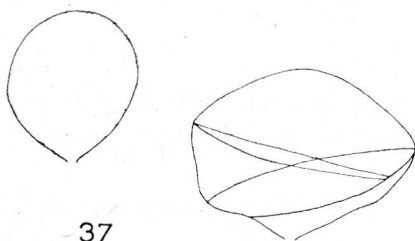
Thorax pale brown; mesonotum spotted, lower part of pleura, post-scutellum and middle of scutellum dark; halteres pale; wing (fig. 35) with two large dark patches — in distal part of basal cell, and at tip of first radial cell; additionally darkened proximal part of vein M_2 and distal part of vein Cu_2 ; wing length 1.6 mm; colour pattern of legs as on fig. 36; each leg with one forked claw, long branch two times longer than short one.



35



36



37

35-37. *Alluaudomyia* sp. indet., female, 35 — wing, 36 — colour pattern of legs, 37 — spermathecae

Abdomen pale; two unequal spermathecae without necks (fig. 37).
Material examined: Ras Isly near Sala Bey, 24 April 1981, 1 ♀.

REFERENCES

- CARTER, H. F., A. INGRAM, J. W. S. MACFIE, 1921, Observations on the Ceratopogonid midges of the Gold Coast, with descriptions of new species. Part III, Ann. Trop. Med. Parasitol., 14: 309-331.
- CLASTRIER, J., 1961, Notes sur les Cératopogonidés XV. — *Ceratopogon* et *Alluaudomyia* de la région paléarctique, Archs. Inst. Past. Alg., 39: 401-437.
- , 1978, Deux nouveaux *Alluaudomyia* de la faune française (Dipt. Ceratopogonida). Entomologiste, 34: 25-31.

- GROGAN, W. L., W. W. WIRTH, 1980, *Nannohelea*, a new genus of biting midges of the tribe *Ceratopogonini*, related to *Baeohelea* WIRTH and BLANTON (Diptera, *Ceratopogonidae*), J. Kans. Ent. Soc., **53**: 373-385.
- MAYER, K., 1955, Beitrag zur Ökologie und Morphologie afrikanischer Heleiden (Dipt.), Arch. Hydrobiol., **51**: 98-117.
- REMM, Ch., 1974, Sistematičeskij obzor vidov roda *Ceratopogon* MEIGEN (Diptera) fauny SSSR, Tartu Riikl. Ülik. Toimet., 327: 23-58.
- REMM, Ch., D. T. ŽOGOLEV, 1968, K faune mokrecov (Diptera, *Ceratopogonidae*) Kryma, Ent. Obozr., **47**: 826-842.
- SZADZIEWSKI, R., 1983, *Ceratopogonidae* (Diptera) from Algeria. II. New species, new records and new synonymy in the genus *Forcipomyia* MEIG., Pol. Pismo Ent., **53**: 363-384.
- VAILLANT, F., 1954, Deux *Ceratopogonides* nouveaux à larves madicoles, Rev. Fr. Ent., **21**: 227-231.

*Accepted for publication
on December 27th, 1982*