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Chironomus kiknadzeae sp. n. from the Ob Sea (USSR)

(Diptera, Chironomidae)

With 5 Plates

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Abstract. Imago (♂♂, ♀♀), larva and karyotype of *Chironomus kiknadzeae* sp. n. from the Ob Sea (USSR) are described. The salivary chromosome map of this species is worked out. The species belongs to the *Chironomus thummi* complex having the arm combinations: AB, CD, EF, G.

Imago, male.

Colour Thorax light green, with lateral parts brown. Abdomen and legs yellow green.

Thorax Antepronotal and dorsocentral lobes well formed, light brown. Acrostichale consisting of short normal setae medially on scutum. Postnotum dark brown. Scutellum with setae in few rows.

Abdomen Yellow green with brownish middle spots.

Legs 1, 2, 3 tibia each with two spurs, tibial comb of each leg conspicuously long, but not sharp.

Hypopygium (Plate I, Fig. 1). Gonostylus (Plate I, Fig. 2) in the middle part wide, at the end elongate with almost parallel sides. Gonocoxite (Plate II, Fig. 1) in the middle part concave. Coxapodeme (Plate II, Fig. 1) well developed. Phallapodeme (Plate II, Fig. 1) rod-like, with blunt end. Claspette (Plate II, Fig. 2) long, dorsal part oval. Anal tergite (Plate I, Fig. 3) cone-shaped, rounded. Anal point well developed, without bristles. Anal field (Plate I, Fig. 4) with long bristles.

Imago, female

Colour brown.

Genitalia (Plate II, Fig. 3). Cercus rounded with long setae. Gonocoxite well developed. Gonapophysis VIII consists of two small lobes with short setae. Gonosternite VIII dark brown, consists of two oval lobes, with long setae and dark edge. Seminal capsules ovoid, dark sclerotied.

Larva

Red colour, up to 12–17 mm long, consists of 13 segments, with long tubules on 10th segment and short tubules on 11th segment. The capsula of the head light yellow. Frontal sclerite light

Submentum (Plate III, Fig. 1) with dark teeth, the middle tooth tree-sectioned, lateral teeth of this tooth small. Lateral teeth of submentum 6. Guliar sclerite with dark brown spot.

Premandible with 2 teeth.

Mandible (Plate III, Fig. 2) with 4 dark teeth. Seta subdentalis sharp. Seta interna-dendriform.

Epipharynx (Plate III, Fig. 5) with 12 sharp chaetulae.

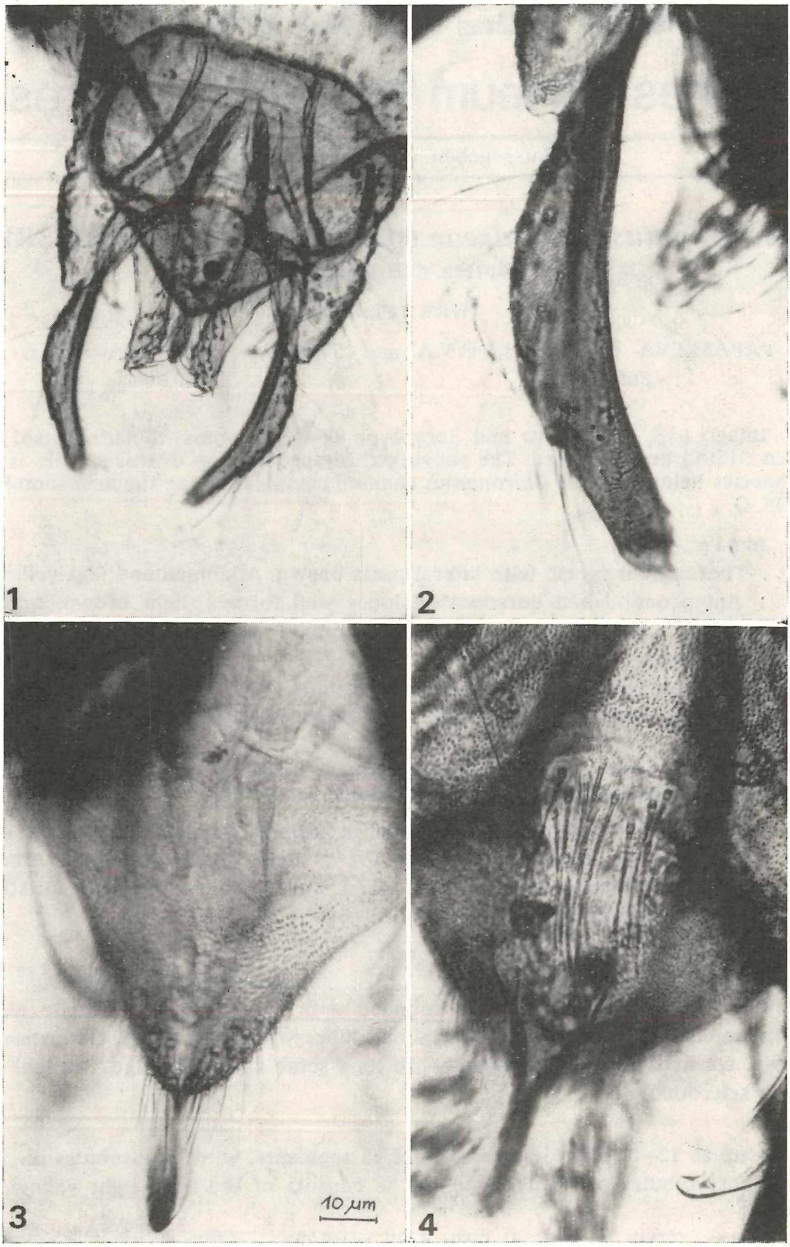
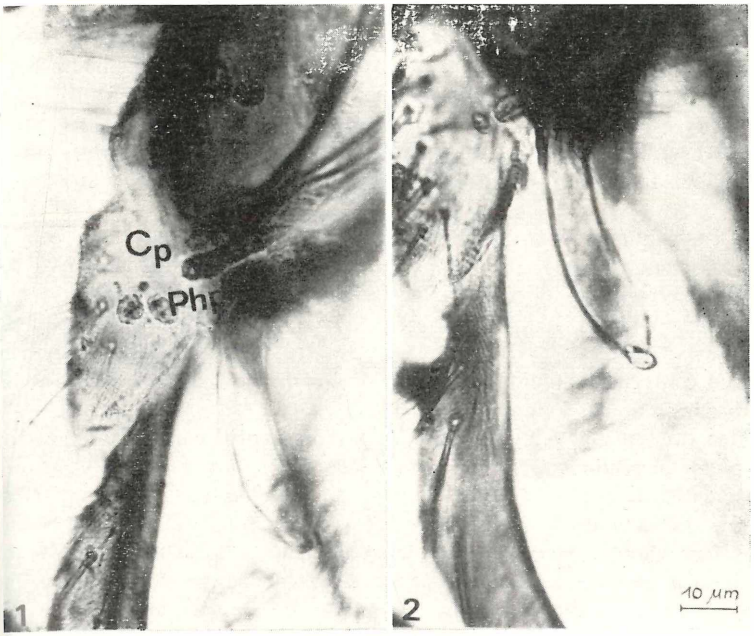


Plate I. *Chironomus kiknadzeae* sp. n.
Fig 1: Hypopygium – Fig. 2: Gonostylus – Fig. 3: Anal tergite – Fig. 4: Anal field.



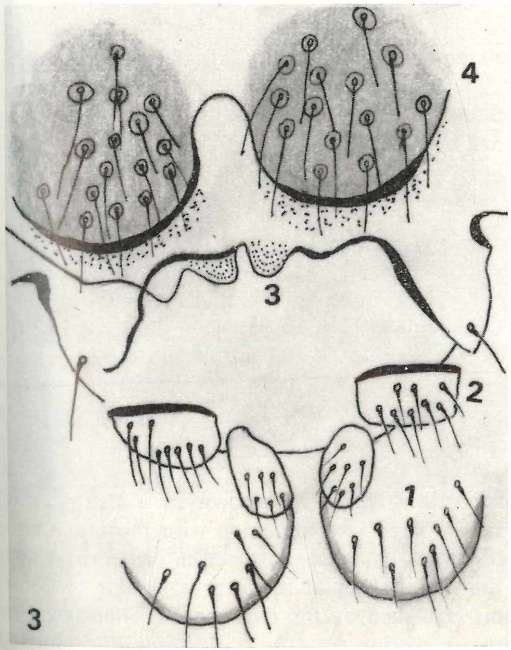


Plate II. *Chironomus kiknadzeae* sp. n. Fig. 1: Gonocoxite; Coxapodeme (Cp); Phallapodeme (Php) — Fig. 2: Claspette — Fig. 3: Female genitalia (1: Cercus, 2: Gonocoxite, 3: Gonapophysis, 4: Gonosternite).

Maxilla (Plate III, Fig. 3). Anterior lacinial chaeta long. Palpus maxillaris well developed.

Antenna (Plate III, Fig. 4) 5 segmented. Lauterborn organs large. Ring organ in middle third of basal segment. Flagellum bipartite, with circular outline.

Karyotype

2n = 8. The species belongs to the *Chironomus thummi* complex, having the arm combinations: AB, CD, EF, G. The centromere of each of the chromosomes is distinctly heterochromatic. The first, second, and third chromosomes are metacentric, the fourth acrocentric. The structure of homokaryotype was used for making a standard salivary gland chromosome map (Plate V). The photos of the salivary gland chromosomes of this species was given at first by BELYANINA (1967) under the name of *Chironomus plumosus*, second karyotype.

The first chromosome (AB) (Plate IV, V): 189,25 ± 6,24. It is divided conditionally into 15 sections. The dark bands in sections 1/2, 5/6, 6/7, 8/9 are typical for the chromosome. Typical marker is the narrowing in section 2/3. The Balbiani Ring in section 11/12–12/13 limited at both sides by dark bands, is typical.

The second chromosome (CD) (Plate IV, V): 161,43 ± 5.73. It is divided conditionally into 12 sections. The band patterns in sections 2/3–3/4; 7/8–9/10 are characteristic for this chromosome. This chromosome has a nucleolus.

The third chromosome (EF) (Plate IV, V): 141,43 ± 5,35. It is divided conditionally into 12 sections. The dark bands in sections 1/2, 4/5, 6/7–7 8, 8/9–9/10 being most typical.

The fourth chromosome (G) (Plate IV, V): 80,37 ± 1.36. It is divided into 8 sections. It has one nucleolus and one Balbiani Ring. This chromosome possess some features of common cytogenetic interest "dark knob" connected with nucleolus. In some cases this "dark knob" is heterozygous. The dark bands in sections 3/4–4/5 are typical for the chromosome. The narrowing in section 4/5 is also a typical feature. Very often the homologues are unpaired in section 4/5–6/7.

Material examined

Egg masses and larvae were collected from the river Inja near Novosibirsk (VIII. 1965), from Berdsk, district of Novosibirsk (VII. 1981) and from the Ob Sea (VII. 1982). Larvae were found on the sand; egg masses on different water plants. Imagines (♂♂, ♀♀) reared from one and the same egg mass and hatched in laboratory conditions by a method described earlier (FISCHER, 1969).

Comments.

Male *Chironomus kiknadzeae* sp. n. is similar to *Chironomus plumosus* L. in the shape of anal point an to *Chironomus lacunarius* WÜLKER & KLÖTZLI in the shape of the anal field. *Chironomus kiknadzeae* sp. n. differs from the both species and other members of this genus by the shape of male genitalia: in having a concave in the middle of the gonocoxite, in the shape of the gonostylus and long claspette with oval end. The larva differs from all members of this genus in having an antenna with flagellum with circular outline. The karyotype is similar to those of *Chironomus plumosus* from populations of Omsk (USSR) (MAXIMOVA, 1979) and from populations of Issyk-Kul and of Volgograd (USSR) (BELYANINA, 1979). The karyotype is similar to those of *Chironomus lacunarius* WÜLKER & KLÖTZLI and to *Chironomus aberratus* KEYL. The karyotype is distinguished by arm C: the bands in sections 2/3–4/5 are inverted in comparison with those of *Chironomus lacunarius*; arm D: the bands in sections 6/7–10/11 are inverted in comparison with those of *Chironomus lacunarius*; arm G: the morphology of this arm is similar to *Chironomus aberratus*. From this species it is distinguished by the dark knob, connected with nucleolus and Balbiani Ring after narrowing in section 4/5. The dark knob differentiates this species from all karyotypes of *Chironomus plumosus*.

Holotype Larva, reared from the egg mass (204) and karyotype preparation of this larva; paratypes (2 ♂♂, 2 ♀♀, 10 larvae and 28 karyotype preparations) are preserved in the author's collection in the Institute of Zoology, Bulgarian Academy of Sciences.

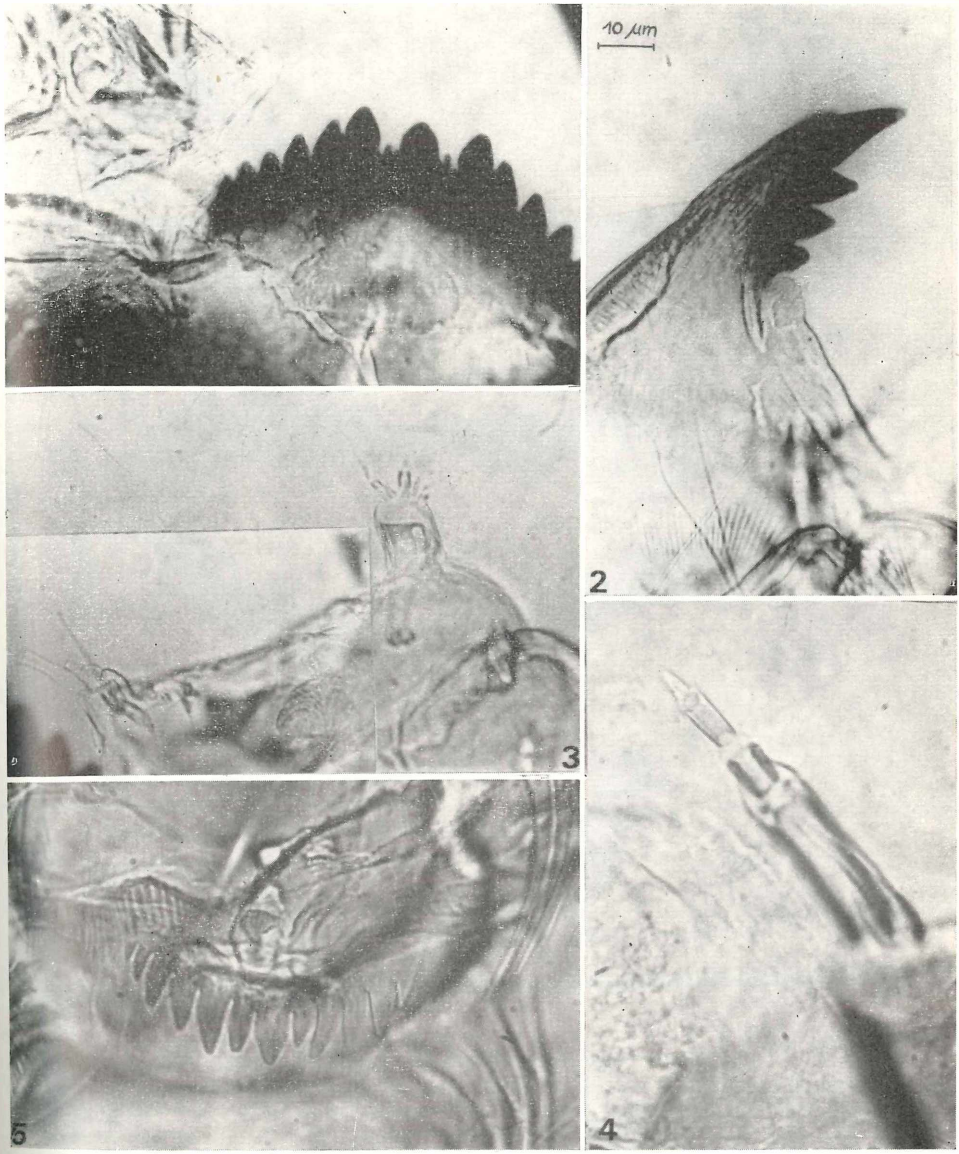


Plate III. *Chironomus kiknadzeae* sp. n.
Fig. 1: Submentum – Fig. 2: Mandible – Fig. 3: Maxilla – Fig. 4: Antenna – Fig. 5: Epipharynx.

Etymology: Named in honour of the famous Professor I. I. KIKNADZE from the Institute of Genetics and Cytology (Novosibirsk, USSR).

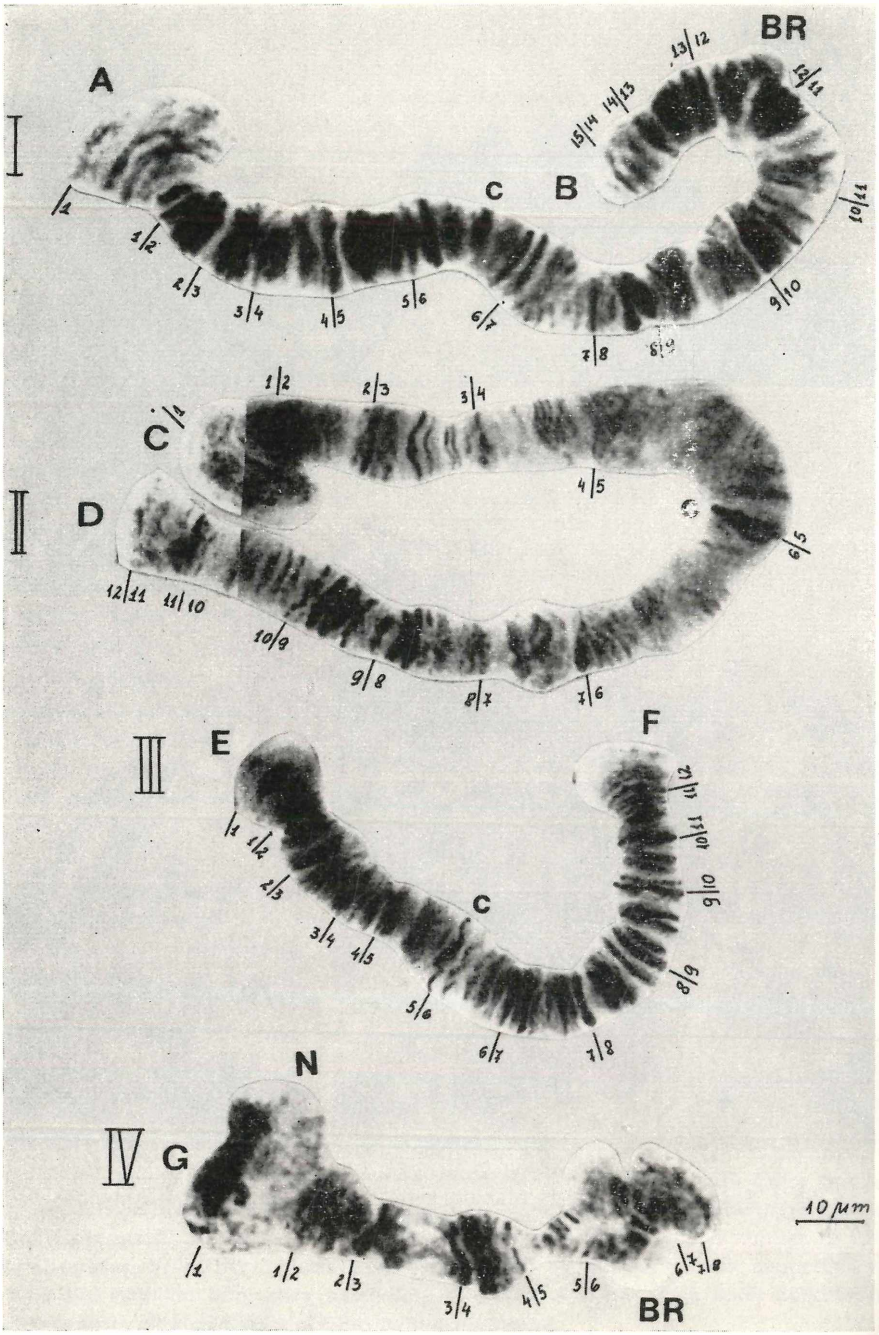


Plate IV. I, II, III, IV: Chromosomes of *Chironomus kiknadzeae* sp. n.

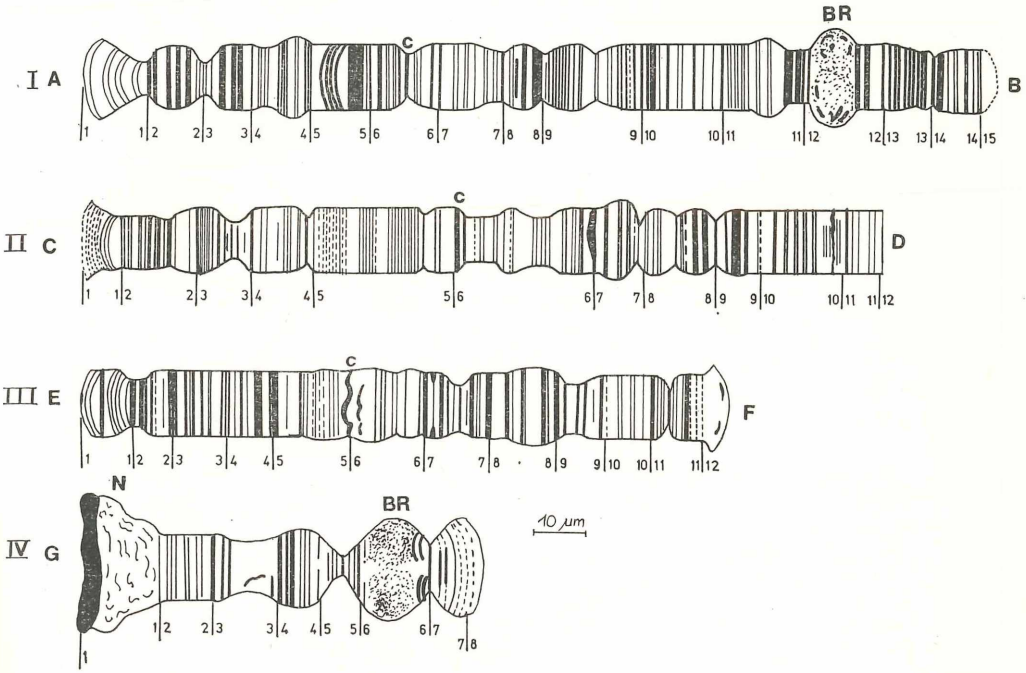


Plate V: Chromosome map of *Chironomus kiknadzeae* sp. n.

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