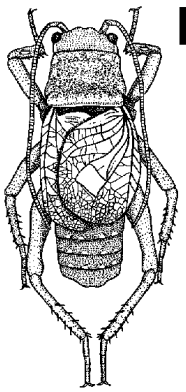

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THE FIRST RECORD OF *POTAMANTHUS FORMOSUS* EATON, 1892 (EPHEMEROPTERA: POTAMANTHIDAE) TO THE RUSSIAN FAUNA, WITH ITS REDESCRIPTION

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Potamanthus formosus is newly recorded for the Russian Far East mayfly fauna. The male, female (reared from larvae) and nymph are redescribed.

KEY WORDS. Insecta, Ephemeroptera, *Potamanthus*, Asia.

Т. М. Тиунова. Первая находка *Potamanthus formosus* Eaton, 1892 (Ephemeroptera: Potamanthidae) для фауны России с его переописанием. // Дальневосточный энтомолог. 1999. N 72. С. 1-7.

На юге Дальнего Востока найден новый представитель фауны поденок России - *Potamanthus formosus*. Приводятся переописание личинки и выведенных из личинок самца и самки.

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INTRODUCTION

Genus *Potamanthus* Linnaeus, 1767 consists of three subgenera: *Potamanthus* Linnaeus, 1767, *Stygifloris* Bae, McCafferty et Edmunds, 1990 and *Potamanthodes*

Ulmer, 1920 (Bae & McCafferty, 1991). This genus was known from Russia by one species from nominative subgenus with two subspecies: *P.* (*Potamanthus*) *luteus luteus* (Linnaeus, 1764) from European part and *P.* (*P.*) *luteus oriens* Bae et McCafferty, 1991 from Far East (Tshernoava et all., 1986; Bae & McCafferty, 1991; Kluge, 1997). In Russia I found second species from subgenus *Potamanthodes*. All eight species of this subgenus distributed in Eastern Palearctic (Korea, Japan, China) and Oriental region (southern China, Taiwan, Vietnam, Laos, Cambodia, Thailand, Myanmar [=Burma], Malaysia) (Bae & McCafferty, 1991).

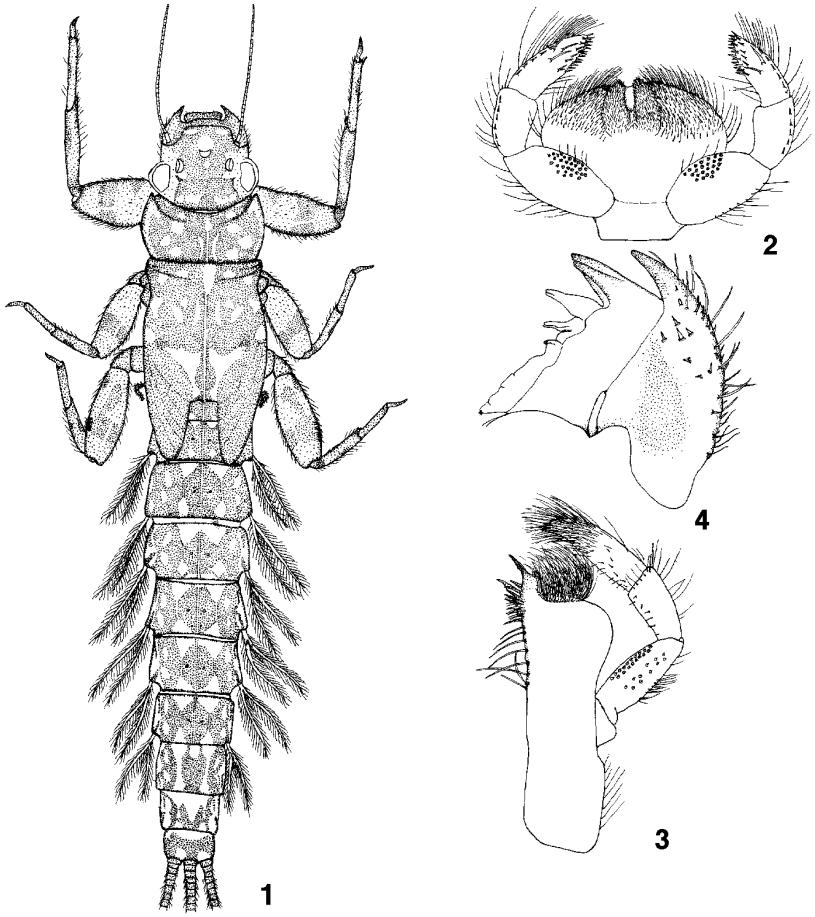
Based on rearing material *P. formosus* is redescribed here. Redescription includes much more details of larvae, legs, fore wings, genitalia and thorax. The necessity of such extending of description is related with difficulties in identification of the Far Eastern material using the monograph of Bae and McCafferty (1991).

***Potamanthus* (*Potamanthodes*) *formosus* Eaton, 1892**
Figs 1-13

Potamanthus formosus Eaton, 1892: 186.
Potamanthodes formosus (Eaton): Ulmer, 1920: 11.
Potamanthus iyonis Matsumura, 1931: 1469 (synonymized by Bae & McCafferty, 1991: 61).
Potamanthus (*Potamanthodes*) *kamonis* Imanishi, 1940: 178, figs. 1, 2.
Potamanthodes kamonis (Imanishi): You, Wu, Gui & Hsu, 1982: 410.
Potamanthus (*Potamanthus*) *formosus* Eaton: Bae and McCafferty, 1991: 61, figs. 17, 25, 37, 43, 61, 99, 117, 131.

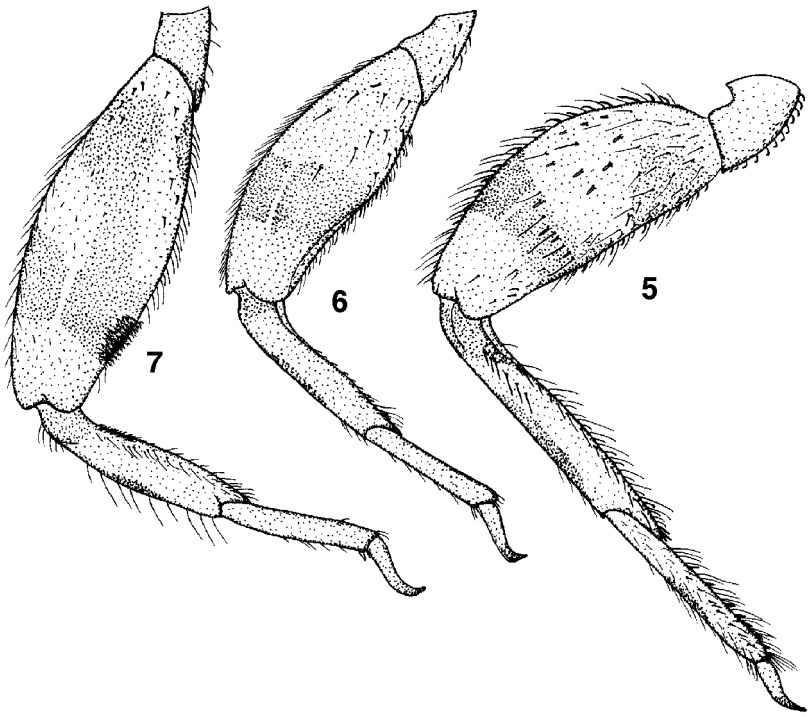
MATERIAL. Russia: Primorskii krai, Ussuri River Basin, Kabarga River, about 6 km below mouth, 28-30.VII 1998, 2♂, 6♀, 4♀ subim., 1♂ subim. (all reared from larvae); 2♀, 1♂ subim. (light trap), 26 larvae (T. Tiunova).

MATURE LARVAE (in alcohol). Length : 8.0-9.6 mm; caudal filaments 4.0-4.7 mm. Head brown or light brown, with light markings; a big light rounded spot in front and small light spot behind of the median ocelli; two small lateral oval light spots near posterior margin of clypeus; compound eyes with wide light band at base. Occiput with a pair of big rounded pale spots, often combined. Antennae brownish, with light base. Mandibles (Fig. 4) short, brown, with white middle area near lateral margins; body of mandibles with 25-30 stout setae and hairlike setae along external margins. The third segment of maxillary palpi twice longer than the second one; apex with long thick hair (Fig. 3) and with short stout setae along inner margin. The third and the second segments of labial palpi subequal in length (Fig. 2); the first segment distinctly longer than other ones; inner margin of segment 3 with numerous short stout setae; outer margins of segment 2 and 3 with a row of short stout setae and long hair. Thorax and terga brown with light markings (Fig. 1). Pronotum brown, with light narrow longitudinal stripe and diffuser light spot in front; posterior margin dark brown, deeply notched middle part and with pair of pale spots; lateral margins pale; three pairs of nearly round pale spots and paired,



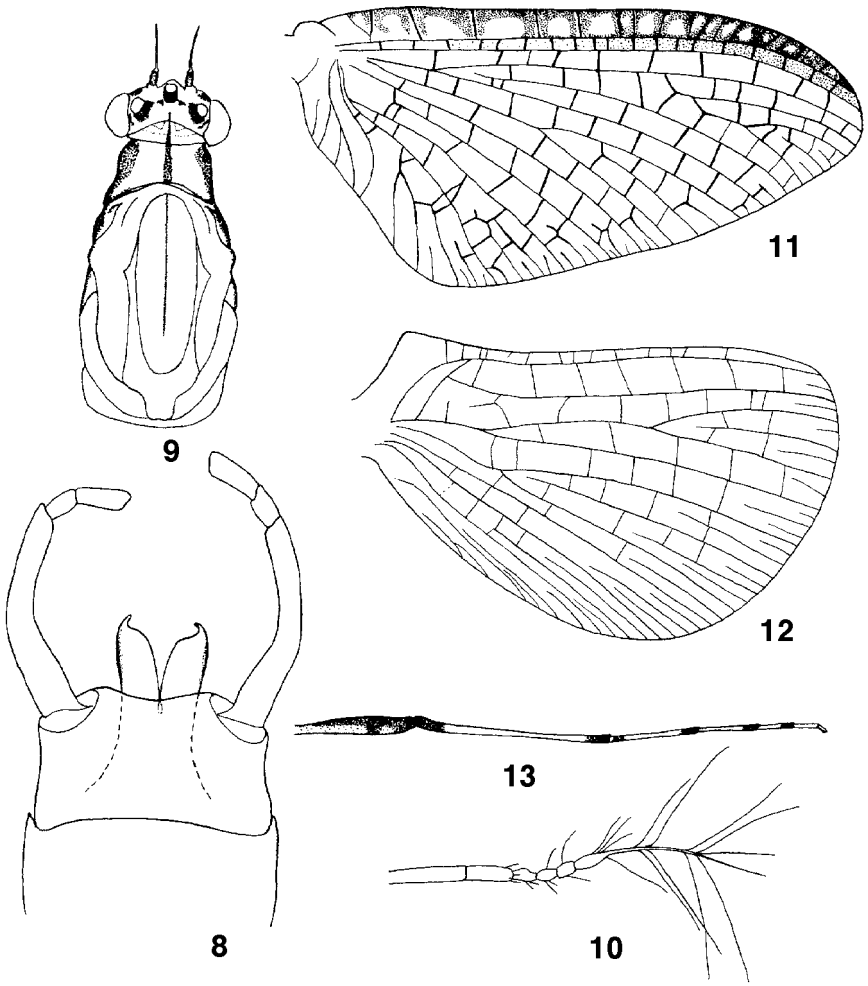
Figs 1-4. *Potamanthus formosus* 1) mature larva; 2) labium of larvae, dorsal view; 3) right maxilla of larvae, dorsal view; 4) right mandible of larvae, dorsal view.

C-shaped spots in medioposterior area, often combined. Mesonotum brown with triangular pale spots in front of the middorsal line and a pair of irregular light spots in posterior margin; 4 or 5 irregular pale spots and paired, C-shaped spots in medioposterior area; broad transverse band of white markings through base of wing pads. Legs white or pale yellow, with brown to darkish markings; femora of fore (Fig. 5) and middle legs (Fig. 6) with wide brown or darkish transverse band in subapical area and diffuser brownish markings in subbasal area, often anclear; tibiae of all legs with dark brown base and broad spot in external margin at mid-length; tarsi of fore legs brown, base lighter, external margin darker; middle and



Figs 5-7. *Potamanthus formosus,* legs of mature larva, dorsal view: 5) fore; 6) mid; 7) hind.

hind legs pale, with small dark spot in external margin at subbasal area; claws brown, apex dark brown. Dorsal fore femora with 4-5 stout setae and 4-5 hairlike setae in transverse row at midlength; with few scattered stout setae and hairlike setae at subbasal area. Fore tibiae 0.82x length of fore femora, 1.48x length of fore tarsi. Hind femora (Fig. 7) with broad brown band at subapical area, which narrow to base of femora and broaden at subbasal area again; with dense area of branched hair in inner margin at subapical region; hind tibiae with dense rows of short hair in inner margin at base. Terga dark brown. Terga I-VIII (Fig. 1) with yellowish or whitish middorsal longitudinal stripe; terga I-IX with white lateral margins; tergum I with a pair of triangular whitish spots in posterior margin; terga II-VII with a pair of whitish triangular spots in anterior and posterior margins and a pair of oval spots in each side, often apexes of triagular spots united narrow whitish stripe; tergum IX with dark brown, V-shaped spot at middle part, C-shaped spots at each side middorsal line and narrow dark brown stripe near anterolateral corners; terga II-IX with few pairs very small white points located from each side of middorsal line; tergum X dark brown, with white anterior margin and a pair of small round



Figs 8-13. *Potamanthus formosus*, male imago: 8) genitalia, dorsal view; 9) head and thorax, dorsal view;10) tips of cerci, lateral view; 11) fore wing; 12) hind wing; 13) fore leg, dorsal view.

spots in posterior margin, often spots united with white anterior stripe. Inner marginal fibrillae pale, external one purplish. Caudal filaments dark brown at base to brownish at apex.

MALE IMAGO (in alcohol). Length: body 7.8-8.4 mm; fore wings 7.7-8.4 mm; cerci 17.2-20.6 mm, median terminal filament 14.0-16.1 mm. Head (Fig. 9) yellow with short middorsal stripe at posterior margin. Compound eyes black, very small.

Ocelli prominent, white, with black ring at base; between lateral ocelli and compound eyes brown or purplish short stripe; a pair of triangular brown spots at base of middle ocelli. Antennae brown to purplish; between antennae and compound eyes brown stripe. Thorax (Fig. 9) yellowish to white, with brown or purplish middorsal stripe. Pronotum yellowish, with purplish lateral margins and wide middorsal stripe. Mesonotum yellowish to whitish, with narrow middorsal stripe and brown to purplish lateral margins and anterolateral corners. Fore legs (Fig. 13) yellow, with brown to darkish bands along external margin in distal half of femora, at base and apex of tibiae, and at first tarsal segment; the second and the third tarsal segments with darkish apex; the last one pale; fore tibiae 1.78x length of fore femora, 0.93x length of fore tarsi; segment 2 of fore tarsi 1.90x length of segment 3. Middle and hind legs white. Fore wings (Fig. 11) with greenish tint, hyaline. Longitudinal veins *C* purplish, *Sc* and *R* yellow to brownish; other veins pale. Costal area and pterostigma purplish, with hyaline spots between crossveins; subcostal area yellow to light brown at distal part, translucent. Crossveins pigmented, brown, nonfuscated. Hind wings (Fig. 12) colorless, veins not pigmented. Terga I-VII white, with light brown or slightly purplish lateral margins; other terga and abdominal sterna white, without markings. Caudal filaments pale yellow at base to brownish at distal part, with slightly dark band at each suture; tips of cerci (Fig. 10) with pale hairs; median terminal filament 0.78-0.8x length of cerci. Genitalia (Fig. 8). Subgenital plate, penes and forceps segment white. Terminal segment of forceps slightly expanded and rounded apically, 1.33-1.42x length of segment 2; segment 2 and 3 together 0.36-0.38x length of basal segments. Apical lobes of penis long, tapered and curved like hook.

FEMALE IMAGO (in alcohol). Length: body 7.2-8.2 mm; fore wings 7.6-8.4 mm; cerci 9.3-11.0 mm, median terminal filament 9.3-11.0 mm. Heard color and marking similar to male; compound eyes black. Thorax: color pattern of body, wings and cerci similar to male. Fore legs yellow, with purplish brown band in external margins at distal half of femora; tibiae yellow, with dark brown base and apex; the first and the second tarsal segment with dark brown apex; the third tarsal segment brown; the last one yellowish or whitish. Middle and hind legs white. Caudal filaments yellowish, with slightly dark band at each suture; tips of cerci without pale hairs; median terminal filament 1.0x length of cerci.

MALE AND FEMALE SUBIMAGO (in alcohol). Length: body 8.3-9.0 mm; fore wings 8.0-8.3 mm; caudal filaments 7.2-8.3 mm. Color and marking head and thorax similar to imago. Fore wings more intensive green than ones. Crossveins pigmented, brownish, infuscated. Hind wings greenish, translucent. Caudal filaments yellowish to whitish, without darkish annulation.

BIOLOGY. The larvae of this species were found in river with sandy bottom and an abundance of flooded fallen wood pieces. As a rule the larvae occurred under rind or rifts.

DISTRIBUTION. Russia (new record): Primorskii krai. - China, Japan (southwest of Japan), Malaysia, Thailand, Vietnam.

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