

A REVISION OF GENUS POTAMANTHODES WITH A DESCRIPTION OF TWO
NEW SPECIES (EPHEMEROPTERA. POTAMANTHIDAE)

You Da-Shou

Department of Biology, Nanjing Teacher's College, 122 Ning Hai
Road, Nanjing, The People's Republic of China

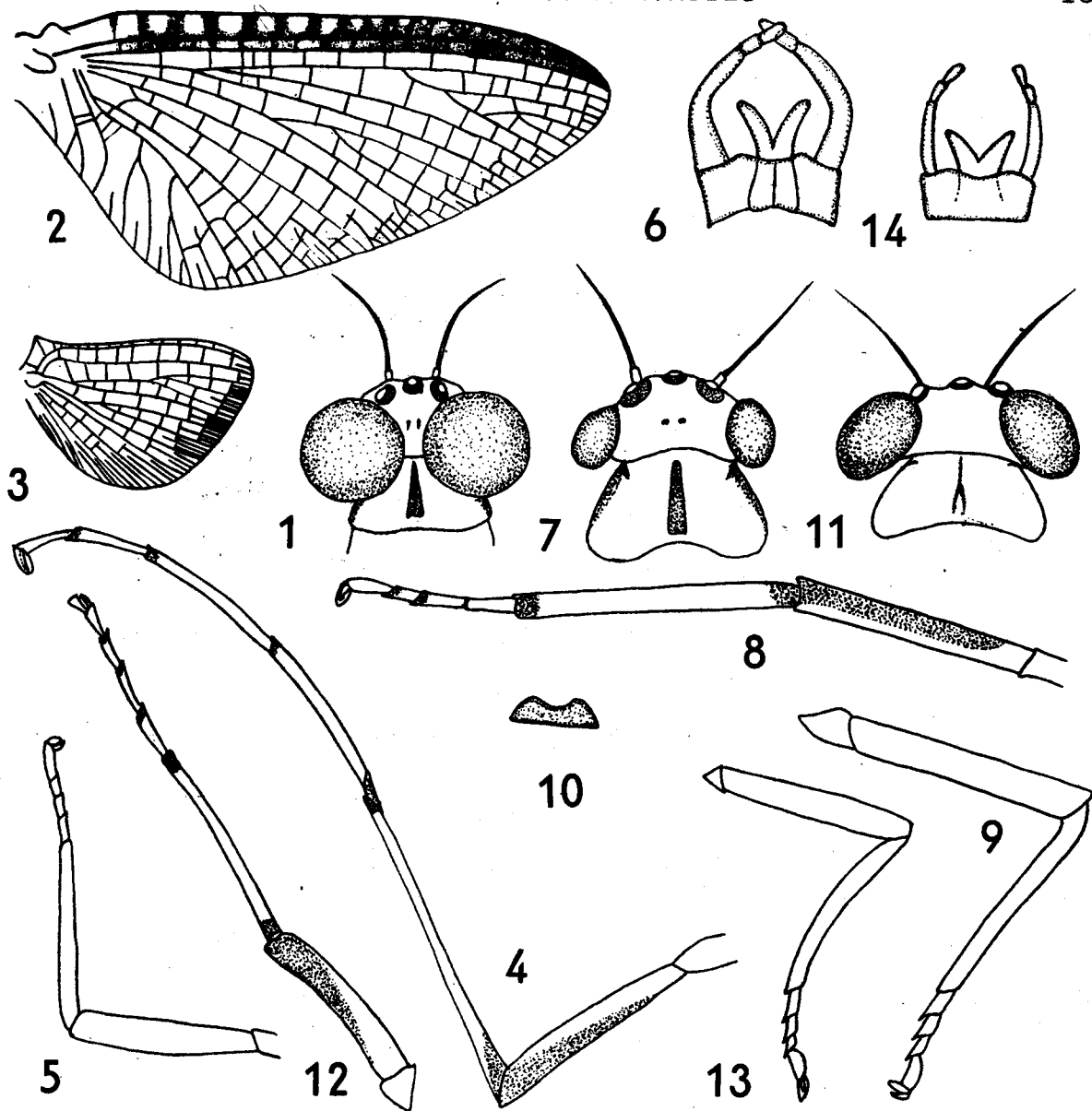
Abstract. The seven species of the Oriental genus Potamantodes are studied. Of these, two new species, P. macrophthalmus /adult male and female, subimago/ and P. sangangensis /adult male and female/ are described and illustrated. P. kamonis /Imanishi/ is transferred from the genus Potamantodes. A key to males is presented.

Taxonomy, adults, Oriental, key

Genus Potamantodes was first set up by Dr. Ulmer in 1919. Its chief characteristics are as follows: Fore wing transparent, triangular in shape, veins C, Sc and R₁ robust, cross vein deep brownish colour. Costal area tinted with ochraceous markings, MP₂ (M₂) not connected with MP₁ (M₁) at base, but with CuA (Cu₁), thus MP₂ (M₂ and CuA (Cu₁) have the same stem. In the hind wing, costal projection very sharp, R₁ strongly bent against Sc and then parallel to it. Forceps 3-segmented, its basal segment about twice or thrice the length of two terminal segments together, penial lobes mostly Y-shaped or V-shaped. As far as we know, there are seven species, namely Potamantodes formosus Eaton, P. kamonis (Imanishi), P. kwangsiensis Hsu, P. fujianensis, P. yunnanensis You et al., P. macrophthalmus sp.n. and P. sangangensis sp.n.

KEY TO THE SPECIES OF GENUS POTAMANTHODES

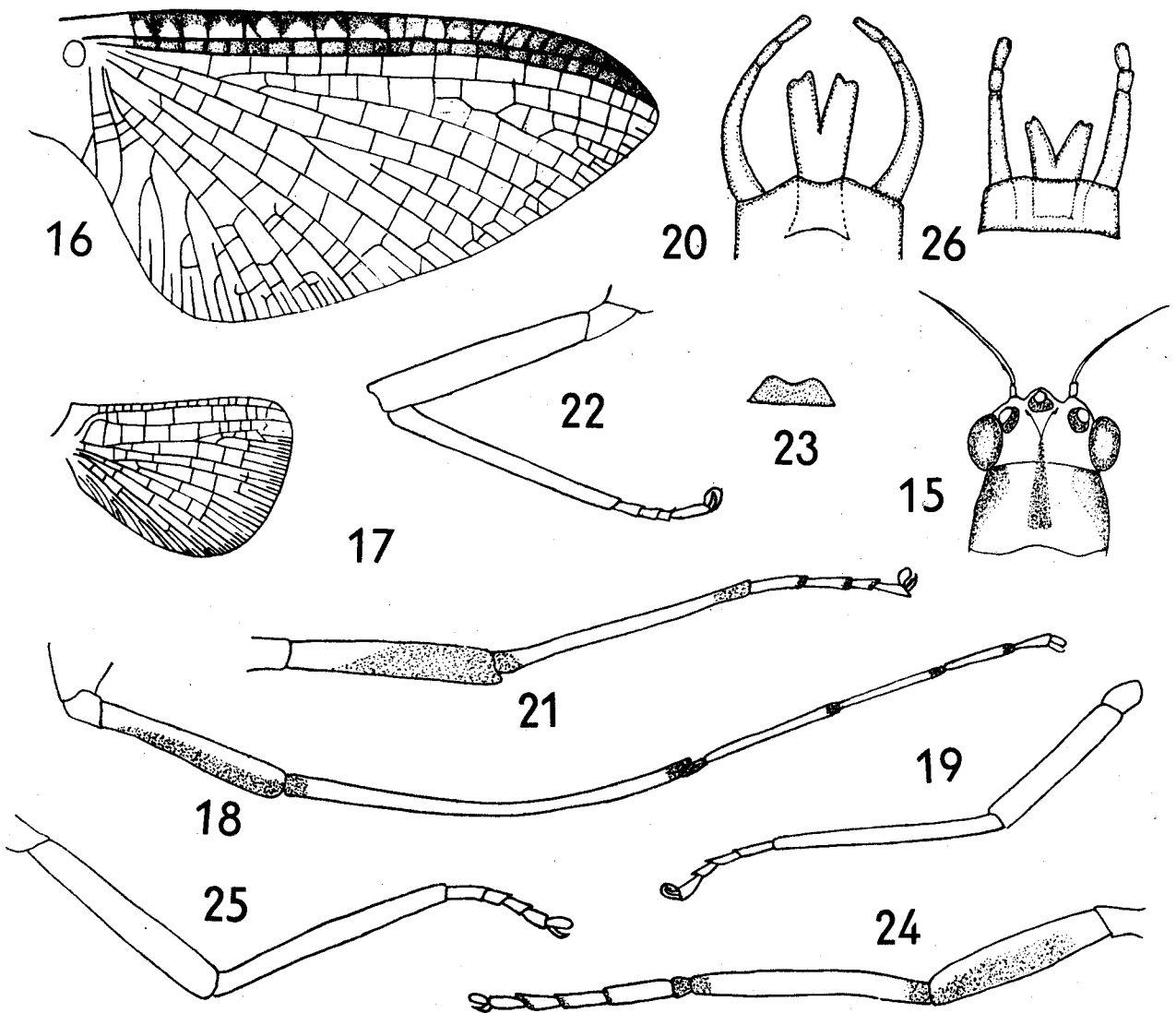
1. Male imago with large compound eyes
..... P. macrophthalmus You, sp. n.
Male imago with ordinary compound eyes 2
2. Penial lobes Y-shaped 3
Penial lobes V-shaped 5



Figs. 1 - 14: Potamantodes macrophthalmus sp.n. 1 - head, dorsal view. 2 - fore wing. 3 - hind wing. 4 - fore leg. 5 - hind leg. 6 - genitalia, ventral view. 7 - head, dorsal view. 8 - fore leg. 9 - hind leg. 10 - abdominal sternite 10. 11 - head, dorsal view. 12 - fore leg. 13 - hind leg. 14 - male genitalia, ventral view. Figs. 1 - 6 - imago male. Figs. 7 - 10 imago female. Figs. 11 - 14 subimago male.

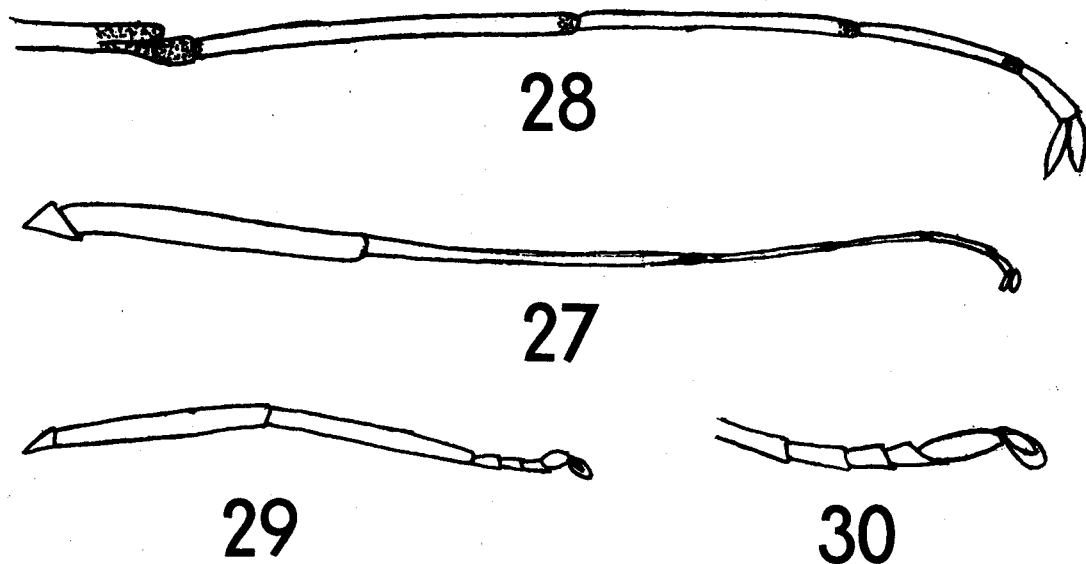
ment shorter, 20 mm long. Male genitalia light yellow in colour, forceps 3-segmented, the 1st segment longest, about thrice the sum of 2 terminal segments. The third segment longer than the 2nd, genitalia rather long, Y-shaped, 2 penial lobes separating out of 9th segment, the distal end being round without tip (Fig. 6).

Female imago (in alcohol): Length of body and coloration similar to male imago, length of body 10 - 11.5 mm, ratio dis-



Figs. 15 - 26: Potamanthodes sangangensis sp.n. 15- head, dorsal view. 16 - fore wing. 17 - hind wing. 18 - fore leg. 19 - hind leg. 20 - genitalia, ventral view. 21 - fore wing. 22 - hind wing. 23 - abdominal sternite 10. 24 - fore leg. 25 - hind leg. 26 - male genitalia, ventral view. Figs. 15 - 20 - imago male. Figs. 21 - 23 imago female. Figs. 24 - 26 - sub-imago male.

tance between eyes: breadth of head 30 : 63. Caudal filaments rather short (Fig. 7). Fore wing 12 mm, hind wing 4 mm long. Fore leg shorter than that of male, tibia slightly longer than femur, tarsus shorter than tibia, fore tarsus 4-segmented, distal end of first, segments 2 and 3 with dark patches, the black marking of first tarsus smallest, segment 4 without markings; femur longer than tibia in hind leg, tarsus about half of tibia, tarsus 4-segmented, ratio of tarsal segments 2.0:1.5:0.8:1.5



Figs. 27 - 30: Potamanthodes formosus Eaton, imago male.
 27 - fore leg. 28 - fore tarsus, detail. 29 - hind leg.
 30 - hind tarsus, detail

in fore leg and 1.0:0.7:0.5:1.3 in hind leg, tarsal joints rank 1, 2 = 4, 3 and 4, 1, 2, 3 respectively. Claws dissimilar (Figs. 8, 9). Posterior border of abdominal sternite 10 deeply emarginated (Fig. 10), other characters similar to the male.

Male subimago (in alcohol): Length of body 11 - 12 mm (male), 12 - 13.5 mm (female), ratio distance between compound eyes : breadth of head 12 : 48 (Fig. 11), the middle lining of prothorax having a divergent marking. Fore leg yellow in colour and with markings (Fig. 12), tibia > tarsus = femur. Hind leg without marking (Fig. 13), tibia = femur > tarsus; ratio of tarsal joints 0.3:1.8:1.6:0.8:1.0 in fore leg and 1.0:0.75:0.5:1.2 in hind leg, the tarsal joints rank 2, 3, 5, 4, 1 and 4, 1, 2, 3 respectively; claws dissimilar. Three caudal filaments about 8 - 11 mm long, genitalia similar to the adult (Fig. 14).

Holotype (male), allotype (female), paratypes (4 males, 26 females and many subimagoes) all collected on July 23-29, 1982 South of the Qinling mountains, Shaanxi Province, China.

2. Potamanthodes sangangensis You, sp. n.

Male imago (in alcohol): Length of body 11 - 12 mm, mostly 11 mm, general colour light yellow, head rectangular in shape; compound eyes deep grey, elliptical and projected laterally; ratio distance between eyes : breadth of head 22 : 46. Ocelli margined with deep brown. Reddish Y-shaped marking on the mid-dorsal line of the head (Fig. 15).

Thorax light yellow in colour, prothorax deeper, meso- and metathorax lighter. Between compound eyes a reddish brown marking extending from dorsal surface of prothorax to the posterior end of mesothorax, its anterior end slender, posterior end broader. At the lateral side of the body, there is a reddish brown marking of considerable width extending from the posterior border of compound eyes to the base of metathoracic legs. Fore wing 10.4 mm in length, triangular, transparent, glistering, besides vein C reddish brown, Sc and R₁ yellowish, other longitudinal veins white; besides cross veins along C and Sc membranes reddish brown, other cross veins yellowish brown in colour (Fig. 16). Hind wing 4 mm long, colourless and transparent (Fig. 17). Fore legs slender, about 8/10 as long as the length of body, femur < tibia < tarsus, tarsus 5-segmented, ratio of tarsal joints 0.8 : 5 : 3.8 : 2.4 : 1.3 in fore leg and 1 : 0.8 : 0.5 : 1 in hind leg, tarsal joints rank 2, 3, 4, 5, 1 and 1 = 4, 2, 3, respectively. Claws similar in fore leg and dissimilar in hind leg (Figs. 18, 19).

Abdomen light yellow in colour, the dorsolateral surface of six abdominal segments with moderately breadth of reddish brown marking, the first 4 segments deep, the segments 5 and 6 light, segment 7 very light. Three caudal filaments 25 - 33 mm long, segmented, caudal end with hairs, terminal filament shorter. Male genitalia light yellow in colour, forceps 3-segmented, basal segment longest, segment 2 shortest, ratio of forceps segments 4.0 : 0.8 : 1.2, the sum of two terminal segments equal to 1/2 of basal segment length. Penial lobes long and narrow, separated out of abdominal segment 9, basal fused halves shorter than the distal diverging halves, the distal end of each half with 2 pointed tips, inner one longer (Fig. 20).

Female imago (In alcohol): Length of body 12 - 13 mm, fore leg 6.3 mm, about half of the body length, tibia > femur > tarsus. Hind legs 5.5 mm, femur > tibia > tarsus, tarsus 4-segmented, ratio of tarsal joints 2 : 1.5 : 0.7 : 1.2 in fore leg and 1 : 0.6 : 0.4 : 1.2 in hind leg, the tarsal joints rank 1, 2, 4, 3 and 4, 1, 2, 3, respectively, claws dissimilar (Figs. 21, 22). Three caudal filaments of the same length, about 10.5 to 16 mm long, the posterior border of abdominal sternite 10 having a deeper emargination (Fig. 23).

Male subimago (In alcohol): Length of body 11 - 13 mm, fore leg yellow in colour, having markings, tibia > tarsus = femur. Hind leg yellow too, without markings, tibia > femur > tarsus. Tarsus 5-segmented in fore leg and 4-segmented in hind leg; ratio of tarsal joints 0.5 : 2.2 : 1.5 : 1 : 1 and 1 : 0.7 : 0.3 : 1.2 respectively; tarsal joints rank 2, 3, 4 = 5, 1, and 4, 1, 2, 3, respectively (Figs. 24, 25). All claws dissimilar, genitalia similar to the male (Fig. 26). Three caudal filaments, about 9 - 15 mm long.

Holotype male, allotype female, paratypes 15 males, 31 females, June, 1982, Wuyi Shan, Fujian Province and July, 1981, Jinggang Shan, Kiangsi Province, China.

3. Potamantodes formosus Eaton

This species is widely distributed in the Far East, but the arrangement of fore and hind legs has not yet been described. Fore leg longer, its length equal to 8.6/10 of the body length; ratio femur : tibia 6.5 : 10. Hind leg about 4.2 mm long. Fore tarsus 5-segmented, hind tarsus 4-segmented; ratio of tarsal joints 0.5:4.1:3.0:1.8:1.0 in fore leg and 0.7:0.5:0.3:1.0 in hind leg, tarsal joints rank 2, 3, 4, 5, 1, and 4, 1, 2, 3, respectively (Figs. 27-30).

Distribution: We collected 44 males, 50 females, June, 1982, Wuyi Shan, Fujian Province; July, 1981 Jinggang Shan, Kiangsi Province and 18 males, 28 females on August 8, 1981 Huo Shan, Anhui Province, China.

4. Potamantodes kamonis (Imanishi) stat. nov.

According to the structure of male genitalia it should be placed into genus Potamantodes instead of Potamantus. This species is widely distributed in Japan.

5. Potamantodes yunnanensis You et al.

Five males, 1 female from May 1980, Jinghong, Xishuangbanna of Yunnan Province, China.

6. Potamantodes kwangsiensis Hsu

Several subimagos from Kiangsi Province collected in 1930 and Kwangsi Province collected in 1934.

7. Potamantodes fujianensis You et al.

Besides Fujian Province, we collected many living specimens in July, 1981, Jinggang Shan, Kiangsi Province.

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