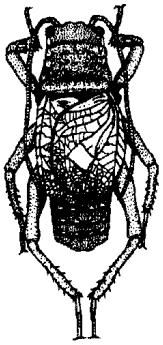
# Far Eastern Entomologist



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# Review of Orthoptera of Eastern Palearctica: Genus *Tettigonia* Linnaeus (Tettigoniidae, Tettigoniinae)


**S. Storozhenko**

*Institute of Biology and Pedology, Vladivostok-22, 690022, Russia*



Review of the genus *Tettigonia* of the Eastern Palearctica is made. Key to species and subspecies are given. New synonymy is established: *T. orientalis orientalis* Uvarov, 1923 = *T. orientalis yama* Furukawa, 1938, syn. n. New subspecies, *T. dolichoptera maritima* ssp. n., is described from Russian Far East.



KEY WORDS: Orthoptera, Tettigoniidae, taxonomy.

С.Ю.Стороженко. Обзор прямокрылых (Orthoptera) Восточной Палеарктики: род *Tettigonia* Linnaeus (Tettigoniidae, Tettigoniinae) // Дальневосточный энтомолог. 1994. N 3. С. 1-20.



Дан обзор кузнечиковых рода *Tettigonia* Восточной Палеарктики. Установлена новая синонимия: *T. orientalis orientalis* Uvarov, 1923 = *T. orientalis yama* Furukawa, 1938, syn. n. С юга Дальнего Востока описан *T. dolichoptera maritima* ssp. n.

Биолого-почвенный институт, Дальневосточное отделение
Российской Академии Наук, Владивосток-22, 690022, Россия.

## INTRODUCTION

The collections of Zoological Institute (St. Petersburg) and Institute of Biology and Pedology (Vladivostok) of Russian Academy of Sciences, Zoological Museum of Moscow University, Osaka Museum of Natural History, National Science Museum (Tokyo) and Academy of Natural Sciences of Philadelphia are studied for the purpose of clarify systematic status of the East Palearctic species of genus *Tettigonia* ; a revised generic and species diagnosis and a key to species and subspecies are given.

## Tribe Tettigoniini Stoll, 1878

This tribe includes three Palearctic genera *Tettigonia* L., 1758, *Amphiestris* Fieber, 1853 and *Kansua* Uvarov, 1933 and characterized by follow: Head relatively short; vertex vertical. Fastigium of vertex distinct, narrow, equal or 1.1-1.6 times narrower than first antennal segment. Eyes small. Pronotum medium-sized, its posterior margin broadly raunded, smooth; disc of pronotum narrowed anteriorly, flat in prozona and very slightly impressed in metazona; median carina obsolete in prozona, faintly indi-cated in metazona; lateral carinae indicate in metazona. Prosternum with two very long processes. Mesosternal lobes long and narrow. Metasternal lobes longer than broad. Legs slender. Fore femora with 2-6 teeth on inner ventral margin, outer ventral margin without or with 1-5 teeth. Fore tibia dorsally with 3 spines in outer margin, inner margin unarmed; ventrally with 6 large spines on both margins. Tibial auditory structure closed, slit-like. Middle femora with 2-12 teeth on outer ventral margin, inner ventral margin without or with 1-8 teeth. Hind femora slender, ventral margin with 4-19 outer and 6-13 inner teeth. Hind tibia bearing two pairs spurs on posterior margin of ventral surface. Plantula of hind tarsus small, length of plantula 2.8-3.7 times less than length of basitarsus. Tegmen and hind wing short or well developed. Ovipositor long, straight. Male genitalia with one pair of well sclerotized titillators, basal portion of titillator large. Phallic membrane with 2 dorsal and 3 ventral membraneous lophi. Genus *Tettigonia* well distinguished from all other genera of Tettigoniini by well developed tegmen and wings.

## Genus *Tettigonia* Linnaeus, 1758

*Tettigonia* (pro subgenus *Gryllus*) Linnaeus, 1758 : 429.

*Tettigonia*: Shrank, 1781, Enum. Ins. Austr. : 244; Leach, 1815 : 120; Karny, 1908, Zool. Ann., 2 : 104; Uvarov, 1923 : 493; Miram, 1933, Orth. Jakut. : 11; Chang, 1935 : 60; Tarbinsky, 1940 : 13, 74; 1948 : 90; Furukawa, 1948, Shin-Konchu, 1 : 265; Bey-Bienko, 1964 : 225; Harz, 1969 : 193; Sergeev, 1986 : 178; Storozhenko, 1986 : 248, 252.

*Phasgonura* Stephens, 1835, Ill. Brit. Ent., Mand., 4 : 15.

*Phasgonura*: Westwood, 1840, Mod. Class. Ins., Syn. Gen., 2 : 45; Kirby, 1906 : 216; Caudell, 1912, Gen. Ins., 138 : 15; Roberts, 1941 : 13.

*Eumenymus* Pictet, 1888, Mem. Soc. Genove, 30(6) : 58.

*Locusta* (nec Linnaeus): Brunner-Wattenwyl, 1882, Prodr. Europ. Orth. : 306; Jacobson, 1905 : 326, 340, 392; Matsumura, Shiraki, 1908 : 69.

Type species: *Gryllus (Tettigonia) viridissimus* Linnaeus, 1758, by subsequent designation (Laech, 1815 : 120).

DIAGNOSIS. Body large, green or light brown. Fastigium of vertex 1.05-1.6 times narrower than first antennal segment. Tegmen well developed, with rounded apex, 3.1-7.0 times longer than pronotum. Male cercus long, with large inner tooth placed shortly before the middle or near the base. Ovipositor straight, 2.7-4.3 times longer than pronotum. Subgenital plate of female with deep emargination on hind margin and with distinct lateral carinae. Tittilator with long, almost straight apical portion bearing 2 teeth.

SPECIES INCLUDED. Besides of the East Palearctic species and subspecies mentioned below, the following representatives of genus *Tettigonia* are known: *T. hispanica hispanica* (I.Bolivar, 1893) and *T. hispanica silana* Capra, 1936 from South Europe, *T. longealata* Chopard, 1936, *T. macroxipha* (I.Bolivar, 1914) and *T. lozanoi* (I.Bolivar, 1914) from Marocco, *T. turcica* Ramme, 1951 and *T. acutipennis* Ebner, 1946 from Minor Asia, *T. caudata armeniaca* Tarbinsky, 1940 from Caucasus (Armenia).

## Key to Eastern Palearctic species and subspecies

1(16) Hind femora with black spines ventrally, which not arise from black spots (fig. 22). Speculum subsquare (figs. 24, 25).

2(9) Tegmina long, 4.5-7.0 times longer than pronotum. Length of RS 1.4-2.2 times more than length of R (from base of R to origin of RS) (figs. 8, 9).

3(6) Tegmina 5.7-7.0 times longer than pronotum, almost parallelside (fig. 8). Lateral carinae of subgenital plate of female not interrupted (figs. 26, 29).

4(5) Length of speculum 2.5-2.6 mm (fig. 24). Ovipositor 3.1-3.4 times longer than pronotum ..... *T. viridissima*

5(4) Length of speculum 3.5 mm (fig. 25). Ovipositor 2.75-2.9 times longer than pronotum ..... *T. chinensis*

6(3). Tegmina 4.5-5.3 times longer than pronotum, at basal 1/3 part more wider than in apical 1/3 (fig. 9). Subgenital plate of female with interrupted lateral carinae near the basal third (fig. 27).

7(8) Tegmina 5.2-5.3 times longer than pronotum. Inner tooth of male cerci with acute apex. Ovipositor 4.1 times longer than pronotum.....*T. dolichoptera dolichoptera*

7(8) Tegmina 4.5-4.6 times longer than pronotum. Inner tooth of male cerci with dentes. Ovipositor 3.2-3.5 times longer than pronotum.....*T. dolichoptera maritima* ssp. n.

9(2) Tegmina relatively short, 3.1-4.3 times longer than pronotum. Length of RS 1.0-1.3 times more than length of R (from base to origin of RS) (figs. 1-3).

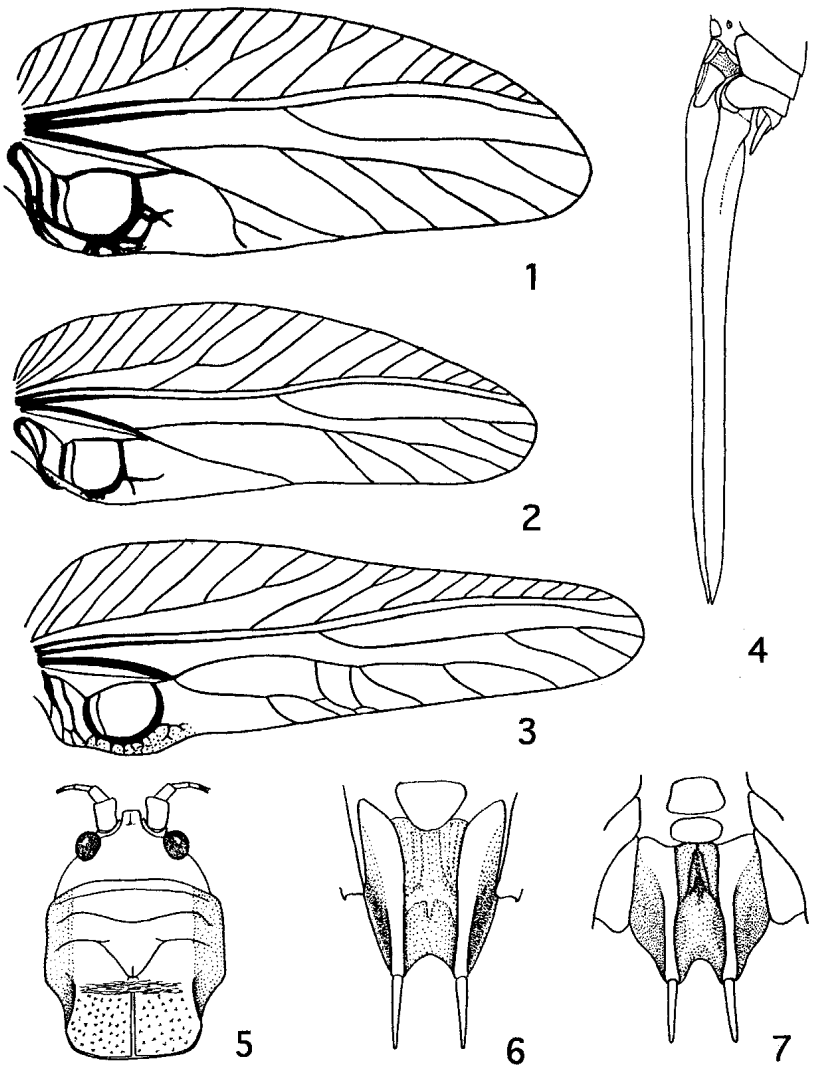
10(11) Fastigium of vertex 1.05-1.1 times narrower than 1st joint of antennae. CuP of left tegmen of male with 54-58 stridulatory teeth. ..... *T. cantans*

11(10) Fastigium of vertex 1.4-1.6 times narrower than 1st joint of antennae. CuP of left tegmen of male with 79-106 stridulatory teeth.

12(15) Tegmina at basal 1/3 part wider than in apical 1/3 (fig. 3). CuP of left tegmen of male with 98-106 stridulatory teeth. Lateral carinae of subgenital plate of female complete (fig. 30).

13(14) Lobes of supra-anal plate of male with acute apex (fig. 15). Apical portion of titillators long and narrow ..... *T. orientalis orientalis*

14(13) Lobes of supra-anal plate of male with rounded apex (fig. 14). Apical portion of titillators short and broad ..... *T. orientalis ibuki*




Figs. 1-7. *Tettigonia.* - 1) *T. cantans,* tegmen of male; 2) do. *T. ussuriana;* 3) do. *T. orientalis orientalis;* 4) *T. ussuriana,* apex of abdomen of female in lateral veiw; 5) *T. dolichoptera maritima* ssp. n., head and pronotum in dorsal veiw; 6) *T. dolichoptera maritima* ssp. n., subgenital plate of male in ventral veiw; 7) do. *T. ussuriana.*

15(12) Tegmina with almost equal width in basal and apical parts (fig. 2). CuP of left tegmen with 79-84 stridulatory teeth. Lateral carinae of subgenital plate of female interrupted (fig. 28) ..... *T. ussuriana*

16(1) Hind femora with black spines ventrally, each of them arising from a black or dark spot (fig. 21). Speculum more or less triangulate (fig. 23).

17(18) Hind femora with black spots near the base of spines ..... ..... *T. caudata caudata*

18(17) Hind femora with dark spots near the base of spines ..... ..... *T. caudata mistshenkoi*

***Tettigonia viridissima*** **(Linnaeus, 1758)**
Figs. 8, 13,19, 24,26

*Gryllus (Tettigonia) viridissimus* Linnaeus, 1758 : 430, No 37 (Types - males and females, Europe).

*Gryllus (Tettigonia) viridissima*: Stoll, 1813, Spect. Saut. : 42, Pl. 23, fig. b, f.

*Conocephalus viridissimus*: Thunberg, 1815, Mem. Acad. St.-Petersb. : 218.

*Locusta viridissima*: Fabricius, 1775, Syst. Ent. : 286; Fischer-Waldheim, 1846 : 148, Pl. 4, fig. 1; Fieber, 1853, Lotus, 3 : 171; Fischer, 1853, Orth. Europ. : 251, Pl. 14, figs. 5a-f; Fieber, 1854, Syn. Europ. Orth. : 47; Brunner-Wattenwyl, 1882, Prodr. Europ. Orth. : 307; Jacobson, 1905 : 340, 392, Pl. 8; Uvarov, 1910 : 381.

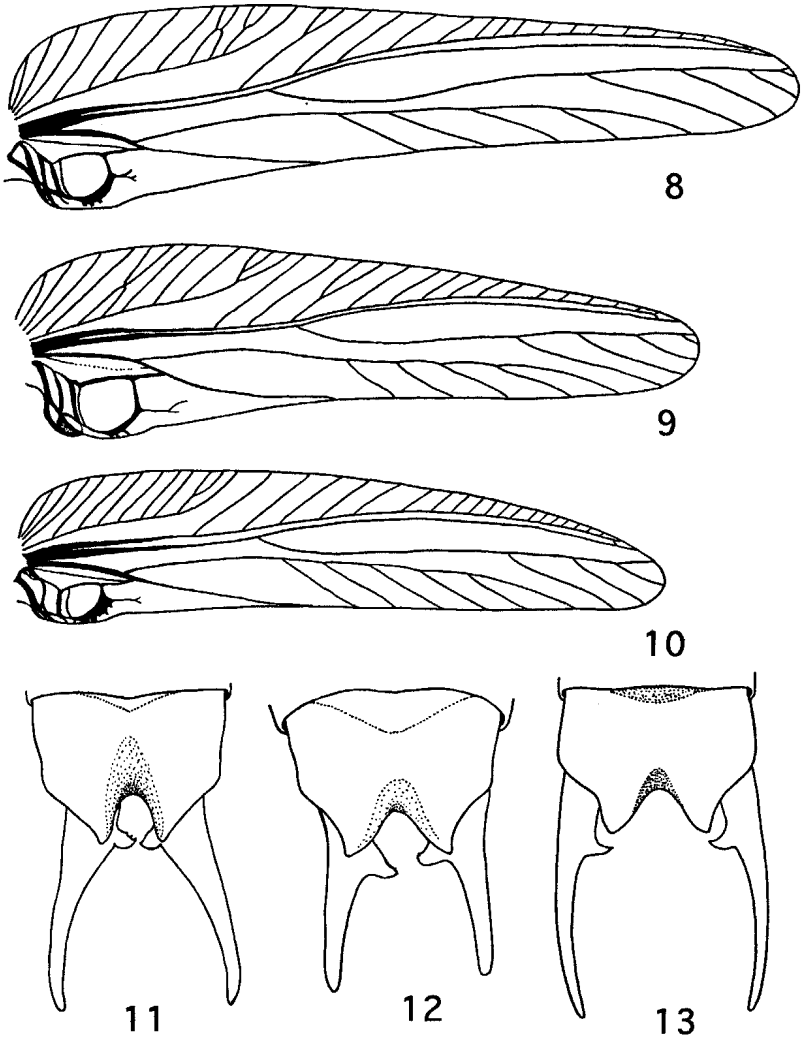
*Locusta viridissima* var. *meridionalis* Shugurov, 1912, Russk. Entomol. Obozr., 12(2) : 222.

*Phasgonura viridissima*: Stephens, Ill. Brit. Ent., Mand., 4 : Pl. 16, No 1; Kirby, 1906 : 217.

*Tettigonia viridissima*: Tarbinsky, 1925 : 178; Bey-Bienko, 1925 : 42; Uvarov, 1933, Ark. Zool., 26(1) : 4; Chang, 1935 : 62 (part.); Furukawa, 1938 : 449; Tarbinsky, 1940 : 13; 77; Tarbinsky, 1948 : 91; Bey-Bienko, 1964 : 225; Harz, 1969 : 196, figs. 9, 18, 21, 613, 618-620; Mistshenko, 1972 : 27 (part.); Pravdin, 1978 : 194; Marshall, 1983 : 394; Sergeev, 1986 : 178 (part.); Storozhenko, 1986 : 252 (part.).

*Locusta viridis cantatrix* De Geer, 1773, Mem. Ins., 3 : 428.

*Tettigonia paolii* Capra, 1936, Boll. Soc. ent. ital., 68 : 162, Figs. 1A, 2; Ebner, 1946 : 24.




Figs. 8-13. *Tettigonia.* - 8) *T. viridissima,* tegmen of male; 9) do. *T. dolichoptera maritima* ssp. n.; 10) do. *T. caudata caudata;* 11) *T. dolichoptera maritima* ssp. n., apex of abdomen of male in dorsal veiw; 12) do. *T. ussuriana;* 13) do. *T. viridissima.*

*Phasgonura paolii paolii*: Jannone, 1937, Boll. Zool. Napoli, 8 : 68.

*Phasgonura paolii intermedia* Jannone, 1937, Boll. Zool. Napoli, 8 : 70, fig. 6, 1.

*Pasgonura trinacriae* Jannone, 1937, Boll. Zool. Napoli, 8 : 72, fig. 1B, 3.

*Tettigonia paolii intermedia*: Ebner, 1946 : 24.

*Tettigonia trinacriae*: Ebner, 1946 : 24.

*Tettigonia viridissima* var. *flava* Nedelkov, 1907, Period. Spis. Bolgarsk. Druzh., 68(5-6) : 430.

MATERIAL. More than 150 specimens from all area are studied.

REDESCRIPTION. Fastigium of vertex 1.15-1.4 times narrower than first antennal segment. Tegmen surpassing far beyond of hind femur, 5.7-6.2 times longer than pronotum, almost parallelside; length of RS 1.7-1.9 times more than length of R (from base of R to origin of RS); CuP of left tegmen of male with 57-66 stridulatory teeth; speculum subsquare; length of speculum 2.5-2.6 mm. Lobes of supra-anal plate of male with acute apex. Inner tooth of male cerci with acute apex. Subgenital plate of male with broadly rounded emargination; lateral carinae of subgenital plate of female complete. Ovipositor 3.1-3.4 times longer than pronotum. Apical portion of titillators smooth. Body green, from above with brown stripe. Hind femora uniform green including the area near the base of ventral black spines.

MEASUREMENTS. Length of body male 28.2-33.5, female 27.5-39.0; pronotum male 7.0-8.5, female 7.2-9.0; tegmen male 40.0-47.5, female 44.0-53.5, hind femur male 22.3-28.0, female 25.3-29.5; ovipositor 23.2-32.5 mm.

NOTES. Two specimens (male and female) without data in Linnaean collection (London) mentioned by Marshall (1983 : 394) probably are syntypes.

DISTRIBUTION. North Africa, Europe, Minor Asia, Caucasus, Afghanistan, North India, Central Asia, Kazakhstan, North-West China (Tian-Shan), West Siberia (from Ural to AltaiMts.). All reference from the more eastern parts of North Asia belongs to another species: *T. orientalis, T. chinensis* and *T. dolichoptera.*

***Tettigonia chinensis* C.Willemse, 1933**

Figs. 16, 25, 29

*Tettigonia chinensis* C.Willemse, 1933 : 17, fig. 3. (Holotype - male, China: Chungking, in Dtsch. Ent. Inst., Germany); Chang, 1935 : 61; Furukawa, 1938 : 449; Tinkham, 1943 : 60; Ebner, 1946 : 24; F.Willemse, 1966, Natuurh. Gen. Limburg, 16 : 33.

MATERIAL. Five specimens are studied.

REDESCRIPTION. Fastigium of vertex 1.3-1.5 times narrower than first antennal segment. Tegmen surpassing far beyond of hind femur, 6.0-6.2 times longer than pronotum, almost parallelside; length of RS 2.0 times more than length of R (from base of R to origin of RS); CuP of left tegmen of male with 81-83 stridulatory teeth; speculum subsquare; length of speculum 3.5 mm. Lobes of supra-anal plate of male with acute apex. Inner tooth of male cerci with strongly acute apex. Subgenital plate of male with broadly rounded emargination; lateral carinae of subgenital plate of female complete. Ovipositor 2.75-2.9 times longer than pronotum. Apical portion of titillators rugate. Body green, from above with indistinct light brown stripe. Hind femora uniform green including the area near the base of ventral black spines.

MEASUREMENTS. Length of body male 31.8-33.0, female 30.5-32.0; pronotum male 7.8-8.0, female 7.5-8.5; tegmen male 47.3-49.0, female 52.5-53.0, hind femur male 27.0-28.0, female 29.0-30.5; ovipositor 22.0-23.5 mm.

DISTRIBUTION. South China: Guangdong, Sichuan, Kiangsi.

### *Tittigonia dolichoptera dolichoptera* Mori, 1933

*Tittigonia dolichoptera* Mori, 1933 : 52, fig. a. (Syntypes - males and females, South Korea; lost); Ebner, 1946 : 24; Rentz , Miller, 1971 : 266.

*Tettigonia viridissima* (nec. Linnaeus): Uvarov, 1923 : 495; Furukawa, 1930 : 104, 105 (part); Mori, 1933 : 51.

MATERIAL. Two males and one female are studied.

REDESCRIPTION. Fastigium of vertex 1.3 times narrower than first antennal segment. Tegmen surpassing far beyond of hind femur, 5.2-5.3 times longer than pronotum, at basal 1/3 part more wider than in apical 1/3; length of RS 1.6-1.7 times more than length of R (from base of R to origin of RS). Lobes of supra-anal plate of male with acute apex. Inner tooth of male cerci with acute apex. Lateral carinae of subgenital plate of female interrupted. Ovipositor 4.1 times longer than pronotum. Body

green, from above sometimes with indistinct brown stripe. Hind femora uniform green including the area near the base of ventral black spines.

MEASUREMENTS. Length of body male 34.0, female 28.0; pronotum male 9.0, female 8.5; tegmen male 47.0, female 45.0, hind femur male 31.0, female 29.0; ovipositor 35.0 mm.

DISTRIBUTION. Known only from South Korea.

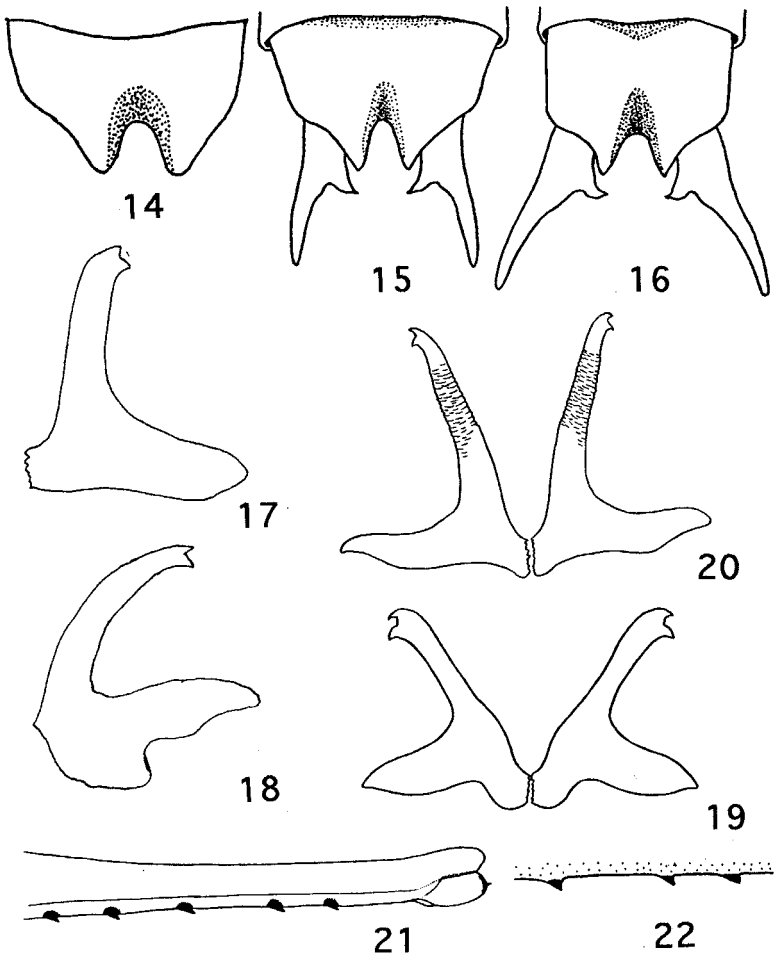
***Tittigonia dolichoptera maritima*** **Storozhenko, ssp. n.**
Figs. 5, 6, 9, 11, 20, 22, 27

*Tettigonia viridissima* (nec. Linnaeus): Storozhenko, 1980 : 13; 1986 : 252 (part.); 1992 : 46.

MATERIAL. Holotype - male, Russia: Amurskaya oblast, 9 km west of Kundur, 16.VIII 1987 (S.Storozhenko). Paratypes - Russia: the same label as holotype, 2 males, 1 female; Khabarovskii krai, Pashko-vo, 19.VIII 1982, 2 males, 1 females (S.Storozhenko); Primorskii krai: Vladivostok, 12.VIII 1975, 5.IX 1986, 28.IX 1986, 5 males (S.Storozhenko); Kedrovaia Pad reservation, 2.VIII 1976, 20.VIII 1986, 1 male, 1 female (S.Storozhenko); Khasan, 11.VIII 1976, 8-12.IX. 1980, 5 males, 3 females (S.Storozhenko); Dmitrievka, 28.VII 1981, 1 male (V.Arefin). Holotype in Zoological Institute, St.Petersburg.

DESCRIPTION. Fastigium of vertex 1.1-1.35 times narrower than first antennal segment. Tegmen surpassing far beyond of hind femur, 4.5-4.9 times longer than pronotum, at basal 1/3 part more wider than in apical 1/3; length of RS 1.4-1.9 times more than length of R (from base of R to origin of RS); CuP of left tegmen of male with 83-96 stridulatory teeth; speculum subsquare; length of speculum 2.8-3.3 mm. Lobes of supra-anal plate of male with acute apex. Inner tooth of male cerci with dentated apex. Subgenital plate of male with broadly rounded emargination; lateral carinae of subgenital plate of female interrupted. Ovipositor 3.2-3.5 times longer than pronotum. Apical portion of titillators rugate. Body green, from above with brown stripe. Hind femora uniform green or light brown including the area near the base of ventral black spines.

MEASUREMENTS. Length of body male 28.0-30.2, female 32.1-37.0; pronotum male 7.9-8.2, female 8.0-9.1; tegmen male 37.5-38.5, female 36.0-43.0, hind femur male 24.0-25.1, female 24.5-29.2; ovipositor 26.0-31.3 mm.




Figs. 14-22. *Tettigonia.* - 14) *T. orientalis ibuki,* supra-anal plate of male in dorsal veiw (after Furukawa, 1938); 15) *T. orientalis orientalis,* apex of abdomen of male in dorsal veiw; 16) do. *T. chinensis;* 17) *T. caudata caudata,* left titillator in dorsal veiw; 18) do. *T. orientalis orientalis;* 19) *T. viridissima,* titillators in dorsal veiw; 20) do. *T. dolichoptera maritima* ssp. n.; 21) *T. caudata caudata,* apex of hind femur in lateral veiw; 22) do. *T. dolichoptera maritima* ssp. n.

DISTRIBUTION. Russia: south part of Far East. Probably will be found in North-East China and North Korea.

***Tettigonia cantans* (Fuessly, 1775)**
Figs. 1, 31

*Gryllus cantans* Fuessly, 1775 : 23, No 439, Pl. 1, fig. 5a, b (Types - Sweeden, depository unknown, probably lost); Gmelin, 1783, Syst. Nat., 4(1) : 2069.

*Locusta cantans*: Charpentier, 1825, Hor. Ent. : 109; Burmeister, 1838, Handb. Ent. : 714; Fischer-Waldheim, 1846 : 151, Pl. 4, figs. 6, 7; Fieber, 1853, Lotos, 3 : 172; Fischer, 1853, Orth. Europ. : 253, Pl. 14, figs. 6a, b; Brunner-Wattenwyl, 1882, Prodr. Europ. Orth. : 309 (part.); Jacobson, 1905 : 393.

*Decticus antans*: Fischer-Waldheim, 1846 : pl. 4, figs. 6, 7.

*Phasgonura cantans*: Kirby, 1906 : 218.

*Tettigonia cantans*: Bey-Bienko, 1925 : 42; Tarbinsky, 1925 : 178; Bey-Bienko, 1930 : 495; Mori, 1933 : 52 (part.); Chang, 1935 : 60; Furukawa, 1938 : 449; Tarbinsky, 1948 : 91; Bey-Bienko, 1964 : 226; Ivanova, 1967 : 130; Harz, 1969 : 196, 197, figs. 616, 624, 625; Mistshenko, 1972 : 26; Sergeev, 1986 : 178.

*Locusta averniensis* Audinet-Serville, 1839, Ins.Orth : 530.

MATERIAL. More than 100 specimens from all area are studied.

REDESCRIPTION. Fastigium of vertex 1.05-1.1 times narrower than first antennal segment. Tegmen extending the apex of hind femora, 3.5-4.4 times longer than pronotum, almost parallelside; length of RS 1.1-1.2 times more than length of R (from base of R to origin of RS); CuP of left tegmen of male with 54-58 stridulatory teeth; speculum subsquare; length of speculum 2.5-3.0 mm. Lobes of supra-anal plate of male with acute apex. Inner tooth of male cerci with acute or sometimes dentated apex. Subgenital plate of male with broadly rounded emargination; lateral carinae of subgenital plate of female complete. Ovipositor 3.2-3.6 times longer than pronotum. Apical portion of titillators smooth. Body green, from above with brown stripe. Hind femora uniform green including the area near the base of ventral black spines.

MEASUREMENTS. Length of body male 21.5-30.8, female 24.0-33.0; pronotum male 6.6-7.8, female 6.2-8.1; tegmen male 23.5-28.9,

female 24.0-29.0, hind femur male 19.5-28.7, female 20.0-25.1; ovipositor 20.5-25.5 mm.

DISTRIBUTION. Europe, Kazakhstan, Siberia (from Ural and Altai Mts. to Baikal Lake). All reference from Russian Far East and North-East China belongs to *T. ussuriana.*

***Tettigonia orientalis orientalis* Uvarov, 1923**
Figs. 3, 15, 18, 30

*Tettigonia orientalis* Uvarov, 1923 : 494. (Holotype - male, Japan, in BMNH, London); Bey-Bienko, 1929 : 545; Furukawa, 1930 : 104; Shiraki, 1932, Iconogr. Insect. Japon.: 2098; Ebner, 1946 : 24; Shiraki, 1950, Iconogr. Insect. Japon. : 39.

*Tettigonia orientalis orientalis*: Furukawa, 1938 : 447, figs. 1a-c.

*Tettigonia viridissima* (nec Linnaeus): Bey-Bienko, 1929 : 545; Furukawa, 1930 : 104, 105 (part.).

*Locusta japonica* Matsumura, 1904, Thous. Ins. Jap., 1 : 125, Pl. 5, fig. 2 (nomen preoccupied, nec Thunberg, 1815).

*Phasgonura japonica*: Furukawa, 1929, Kontyu, 3(4) : 175.

*Tettigonia orientalis yama* Furukawa, 1938 : 447, figs. 1d-e. (Syntypes - males and females, Japan: Nagano, Aomori; in collection of Furukawa; lost), **syn. n.**; Yamasaki, 1967 : 47, figs. 29, 30.

MATERIAL. 21 specimens are studied.

REDESCRIPTION. Fastigium of vertex 1.4-1.6 times narrower than first antennal segment. Tegmen surpassing beyond of hind femur on 7-8 mm, 3.3-4.0 times longer than pronotum, at basal 1/3 part more wider than in apical 1/3; length of RS 1.3-1.5 times more than length of R (from base of R to origin of RS); CuP of left tegmen of male with 98-106 stridulatory teeth; speculum subsquare; length of speculum 2.6-3.0 mm. Lobes of supra-anal plate of male with acute apex. Inner tooth of male cerci with acute apex. Subgenital plate of male with broadly rounded emargination; lateral carinae of subgenital plate of female complete. Ovipositor 3.2-3.5 times longer than pronotum. Apical portion of titillators rugate. Body green, from above with brown stripe. Hind femora uniform green including the area near the base of ventral black spines.

NOTES. *Tettigonia orientalis yama* is a pure synonym of *T. orientalis orientalis.*

MEASUREMENTS. Length of body male 25.0-33.0, female 24.0-

37.0; pronotum male 7.2-8.0, female 7.5-8.5; tegmen male 31.0-35.0, female 30.0-38.0, hind femur male 21.0-29.0, female 24.0-27.0; ovipositor 27.0-33.0 mm.

DISTRIBUTION. Japan: Honshu.

***Tettigonia orientalis ibuki*** **Furukkawa, 1938**
Fig. 14

*Tettigonia orientalis ibuki* Furukawa, 1938 : 448, figs. 1f-h. (Holotype - male, Japan: Ibuki near Biva Lake; in collection of Furukawa; lost); Ebner, 1946 : 24.

NOTES. Probably good small and robust species, but the studies of additional specimens must be made before the taxonomic position of *Tettigonia* from Biva Lake in Central Honshu may be clarify.

MEASUREMENTS. Length of body male 23.0, tegmen 27.0, hind femur 22.0 mm.

DISTRIBUTION. Japan: Honshu.

***Tettigonia ussuriana*** **Uvarov, 1939**
Figs. 2, 4, 7, 12, 28

*Tettigonia ussuriana* Uvarov, 1939 : 614. (Holotype - male, Primorskii krai, Lianchikhe river near Vladivostok (=Okeanskaya), in Zoological Institute, St.Petersburg, studied); Ebner, 1946 : 24; Storozhenko, 1980 : 14; 1981 : 1723; Sergeev, 1986 : 178; Storozhenko, 1986 : 252.

*Tettigonia uvarovi* Ebner, 1946 : 26, figs. 6-8.

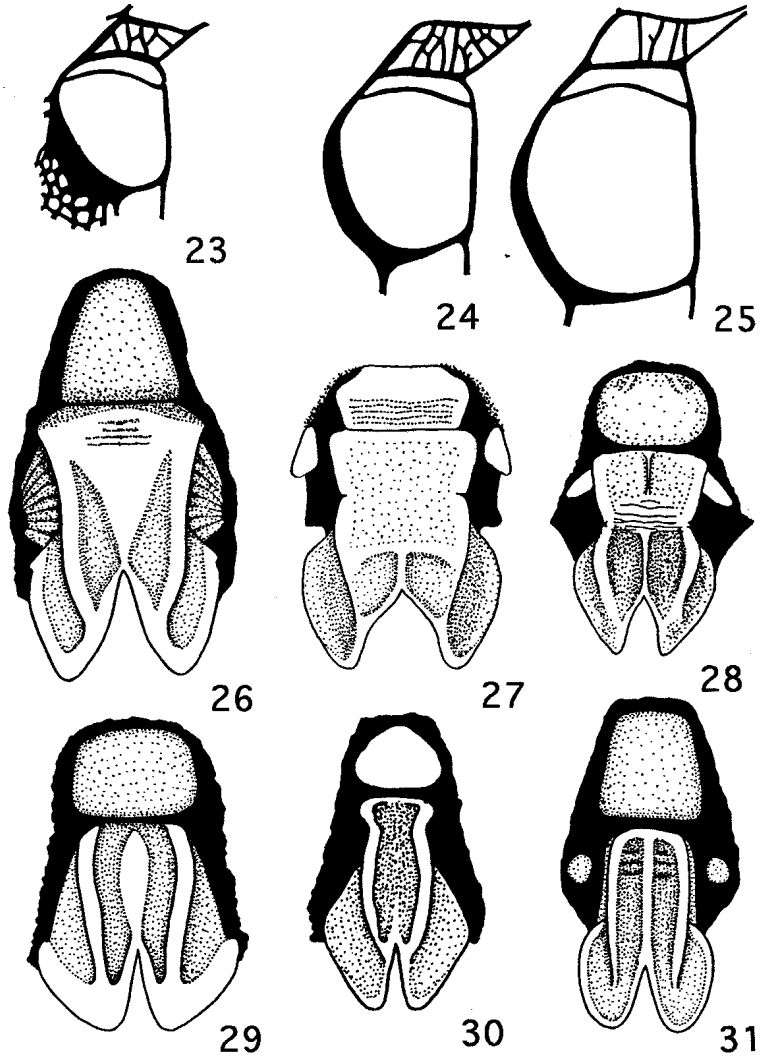
*Locusta cantans*: Brunner-Wattenwyl, 1882, Prodr. Europ. Orth. : 309 (part.).

*Tettigonia cantans* (nec. Fuessly): Bey-Bienko, 1930 : 495; Kurentzov, 1938 : 145.

*Tettigonia orientalis* (nec. Uvarov): Kurentzov, 1938 : 146.

MATERIAL. More than 200 specimens from all area are studied.

REDESCRIPTION. Fastigium of vertex 1.4-1.6 times narrower than first antennal segment. Tegmen extending the apex of hind femora, 3.1-4.2 times longer than pronotum, almost parallelside; length of RS 1.05-1.3 times more than length of R (from base of R to origin of RS); CuP of left tegmen of male with 79-84 stridulatory teeth; speculum subsquare; length




Figs. 23-31. *Tettigonia.* - 23) *T. caudata caudata,* speculum of male; 24) do. *T. viridissima;* 25) do. *T. chinensis;* 26) *T. viridissima,* subgenital plate of female in ventral veiw; 27) do. *T. dolichoptera maritima* ssp. n.; 28) do. *T. ussuriana;* 29) do. *T. chinensis;* 30) do. *T. orientalis orientalis;* 31) do. *T. cantans.*

of speculum 3.1-3.2 mm. Lobes of supra-anal plate of male with acute apex. Inner tooth of male cerci with dentated apex. Subgenital plate of male with broadly rounded emargination; lateral carinae of subgenital plate of female interrupted. Ovipositor 3.1-3.7 times longer than pronotum. Apical portion of titillators rugate. Body green or light brown, from above with dark brown stripe. Hind femora uniform greenish brown including the area near the base of ventral black spines.

MEASUREMENTS. Length of body male 29.0-35.0, female 26.2-34.2; pronotum male 7.0-8.1, female 7.5-8.0; tegmen male 23.5-30.0, female 23.2-27.7, hind femur male 21.0-23.0, female 21.5-25.0; ovipositor 23.0-28.0 mm.

NOTES. *T. uvarovi* is a pure synonym of *T. ussuriana* (Storozhenko, 1981). All records of *T. cantans* and *T. orientalis* from Russian Far East and North-East China belongs to *T. ussuriana*.

DISTRIBUTION. Russia: Primorskii krai and south of Khabarovskii krai. North-East China. Probably also may be found in North Korea.

***Tettigonia caudata caudata* (Charpentier, 1845)**
Figs. 10, 17, 21, 23

*Locusta caudata* Charpentier, 1845 : pl. 33 (Types - Hungary; depository unknown, probably lost); Fieber, Lotos, 3 : 171; Fischer, 1853, Orth. Europ. : 252, Pl. 14, fig. 7; Fieber, 1854, Syn. Europ. Orth. : 47; Brunner-Wattenwyl, 1882, Prodr. Europ. Orth. : 308, Pl. 8, fig. 72; Jacobson, 1905 : 340, 393; Uvarov, 1910 : 381; Uvarov, 1912, Russk. Entomol. Obozr., 12 : 213.

*Pasgonura caudata*: Kirby, 1906 : 218.

*Tettigonia caudata*: Tarbinsky, 1925 : 178; Bey-Bienko, 1925 : 42; Uvarov, 1933, Ark. Zool., 26(1) : 4; Chang, 1935 : 61; Tarbinsky, 1940 : 13, 77; Tarbinsky, 1948 : 91; Bey-Bienko, 1964 : 226; Ivanova, 1967 : 130; Harz, 1969 : 196, 197, figs. 614, 615, 621-623; Mistshenko, 1972 : 26; Pravdin, 1978 : 194; Sergeev, 1986 : 178.

*Tettigonia caudata caudata*: Ozerskij, 1989 : 119.

*Conocephalus kolenatii* Fischer-Waldheim, 1846 : 145, Pl. 29, figs. 1, 2.

*Locusta longicauda* Eversmann, 1848, Addim. Orth. Rossica, Moscou : 8, Pl. A, figs. 2, 2a, b.

*Locusta prasina* Fieber, 1852, Kelch. Grundl. Orth. : 3.

MATERIAL. More than 70 specimens from all area are studied.

REDESCRIPTION. Fastigium of vertex 1.2-1.4 times narrower than first antennal segment. Tegmen surpassing far beyond of hind femur, 4.6-5.9 times longer than pronotum, almost parallelside; length of RS 1.6-2.3 times more than length of R (from base of R to origin of RS); CuP of left tegmen of male with 53-65 stridulatory teeth; speculum triangulate; length of speculum 2.0-2.1 mm. Lobes of supra-anal plate of male with acute apex. Inner tooth of male cerci with acute apex. Subgenital plate of male with triangulate emargination; lateral carinae of subgenital plate of female complete. Ovipositor 3.9-4.3 times longer than pronotum. Apical portion of titillators smooth. Body green, sometimes from above with indistinct brownish stripe. Hind femora with black spines ventrally, each of them arising from a black spot.

MEASUREMENTS. Length of body male 25.0-31.5, female 27.0-35.0; pronotum male 7.0-7.9, female 7.9-8.9; tegmen male 32.5-42.5, female 37.0-49.0, hind femur male 24.0-27.5, female 26.0-32.5; ovipositor 31.0-37.3 mm.

DISTRIBUTION. Europe, Minor Asia, Caucasus, Afghanistan, Central Asia, Kazakhstan, North-West China (Tian-Shan), West Mongolia, South Siberia (from Ural and Altai Mts. to east coast of Baikal Lake).

### *Tettigonia caudata mistshenkoi* Ozerskij, 1989

*Tettigonia caudata mistshenkoi* Ozerskij, 1989 : 117, figs. 1-3 (Holotype - male, Kirghizia: 14 km east Naryn; in Zoological Institute, St.Petersburg; studied).

MATERIAL. Two specimens are studied.

REDESCRIPTION. Closely related to nominative subspecies, but differs by characters mentioned in key and by relatively shorter tegmen.

MEASUREMENTS. Length of body male 25.0-28.0, female 33.0-35.0; pronotum male 6.8-7.4, female 7.8-8.1; tegmen male 34.0-36.0, female 35.0-38.0, hind femur male 24.2-24.5, female 26.2-27.8; ovipositor 28.7-32.5 mm.

DISTRIBUTION. Kirghizia: Inner Tian-Shan.

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Address: Institute of Biology and Pedology, Far East Branch of Russian Academy of Sciences, 690022, Vladivostok-22, Russia.
FAX: (4232) 310 193
E-mail: entomol@stv.iasnet.com