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## A Taxonomic Study of Korean Tetrigidae (Orthoptera: Caelifera: Tetrigoidea)

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A taxonomic study of Korean Tetrigidae species are recognized including two new species for the first time in Korea.

*Tetrigidae, Korea, New Record, Orthoptera*

A taxonomic study of Korean Tetrigidae species are recognized including two new species for the first time in Korea. Some species are new records for Korea. New Record, Orthoptera.

A species of Tetrigidae distributed in Korea (Kwon and Kim, 1995) and in North Korean fauna. We have knowledge for Korean Tetrigidae. We have knowledge for Korean Tetrigidae.

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dorsal carinae  
without a dorsal carinae  
The specimens were deposited in Songshin Women's University.

## A Taxonomic Study of Korean Tetrigidae (Orthoptera: Caelifera: Tetrigoidea)

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**ABSTRACT** A Taxonomic study of Korean Tetrigidae (Orthoptera: Caelifera: Tetrigoidea) is revised. Twelve species are recognized including two species (*Tetrix silvicultrix* Ichikawa and *T. minor* Ichikawa) recorded for the first time in Korea. Keys and photographs of habitus for species are provided.

**Key words** : Caelifera, Korea, New Record, Orthoptera, Tetrigidae, Tetrigoidea

### Introduction

The family Tetrigidae is a easily recognized group among Orthopterans based on the characters such as smaller body with relatively longer pronotum which dorsally covers all abdominal parts and 2-2-3 tarsal formula. Members of the family have a primitive feeding habit, i.e., they graze substance such as algae on mud-banks or debris on litters as well as molds, lichens and mosses (Blackith, 1992). Some species are semi-aquatic species, e.g. *Criotettix japonicus* (De Haan) is always found near wet habitats. In temperate region, they hibernate in the state of adults or nymphs of middle stage.

There are about 1,195 species of Tetrigid distributed all over the world (Otte, 1997). Since the previous reports on the Korean Orthoptera by Doi (1932, 1933), Cho (1959, 1969) and Kostia (1993), four species of the Tetrigidae were listed in Korea (Kwon and Huh, 1994). Subsequently, one species is more recorded from the Isle of Jeju (Huh and Kwon, 1995) and two species are added to the North Korean fauna (Kostia, 1995). However, the knowledge for Korean Tetrigidae is not fully clarified. We have the opportunity to review newly on the Korean twelve tetrigids including two species (*Tetrix silvicultrix* Ichikawa and *T. minor* Ichikawa), which are reported in this paper for the first time in Korea.

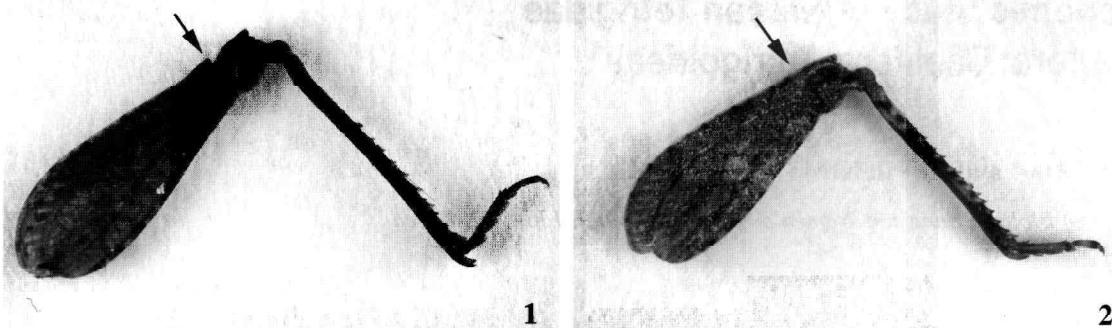
A critical consideration in this group is to discriminate the developmental stages between adults and juveniles, as already pointed out by Kim and Kim (2002). Especially, the genus *Formosatettix* Tinkham is defined for similar characters linked to the genus *Tetrix* Latreille, i.e., nymphal form's pronotum (Tinkham, 1937; Bey-Bienko and Mishchenko, 1951). Accordingly more careful observations are need to study them. Such of their confusions are often presented particularly in Korea species, e.g. a synonymy of *Formosatettix slivae* Kostia with the nymphal stage of *Tetrix subulata* (Linnaeus) by Paik and Storozhenko (2000). Probably, the generic peculiarity of *Formosatettix* can be suggested as an example of paedogenesis on the developmental biology.

As a general phenomenon, nymphs of Orthoptera are smaller than full grown adults and the bodies are more soft and less sclerotized as well as genitalia by uncomplete development. In addition to the former views, the morphology of Tetrigids is characterized by: adults- 1) with scale-like small tegmina and membranous hind wings (except *Formosatettix* with vestigial wings), 2) female with strong serrations of ovipositor, 3) with a remarkable dorsal antegenicular denticle of hind femora (Fig. 1); nymphs- 1) wings are similar to small buds with only longitudinal veins (or absent in *Formosatettix*), 2) female with weak and undistinguishable serrations of ovipositor, 3) their dorsal carinae of hind femora continuous to the knee without a antegenicular denticle (Fig. 2).

The specimens used in this study are mostly deposited in Sungshin Women's University, Korea Univer-

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Figs. 1–2. Comparison on hind legs of Tetrigidae. (1. Adult, 2. Nymph. See the arrows to parts of antegenicular denticle.)

sity, and NIAST (National Institute of Agricultural Science and Technology, Suwon) in Korea. The abbreviations are as follows: [!]: misspelling; BL: Body length; CB: Chungcheongbuk-do; CN: Chungcheongnam-do; GB: Gyeongsangbuk-do; GG: Gyeonggi-do; GN: Gyeongsangnam-do; GW: Gangwon-do; HFL: Hind femoral length; HT: Holotype; JB: Jeollabuk-do; JJ: Jeju-do; JN: Jeollanam-do; LS: Linnean Society, London, UK; LT: Lectotype; NMW: Naturhistorisches Museum Wien, AUSTRIA; OMNH: Osaka Museum of Natural History, JAPAN; PAS: Institute of Systematics and Evolution of Animals, Polish Academy of Sciences, Krakow, POLAND; PL: Pronotal length; RMNH: Nationaal Natuurhistorische Museum, Leiden, NETHERLANDS; ST: Syntype; ZIN: Zoological Institute of the Russian Academy of Sciences, St. Petersburg, RUSSIA.

## Systematic Account

Superfamily Tetrigoidea Rambur

Family Tetrigidae Burmeister

### Key to Subfamilies of Korean Tetrigidae

1. Posterior angles of lateral lobes of pronotum acutely produced outwards forming spines. .... Scelimeninae (*Criotettix japonicus*)
- Posterior angles of lateral lobes of pronotum turned downwards forming smooth behind. .... Tetriginae

Subfamily Scelimeninae Bey–Bienko and Mishchenko

### Genus *Criotettix* Bolívar, 1887

Ann. Soc. Ent. Belg. 31: 184. Type species: *Acrydium bispinosum* Dalman, 1818.

### *Criotettix japonicus* (De Haan, 1842)

가시모메뚜기 (Fig. 3)

*Acridium (Tetrix) bispinosum* var. *japonicum* De Haan, 1842. Bijdrag. Kennis Orthop.: 169. (Japan). ST in RMNH.

**Korean records.** *Acanthalobus japonicus*: Doi, 1932: 34; *Acanthalobus* [!] *japonicus*: Cho, 1959: 169, fig. 47; Cho, 1969: 746, pl. 49; Ju, 1969: 21; *Criotettix japonicus*: Kwon and Huh, 1994: 50; Moon and Yoon, 1996: 51; Kwon et al., 1996: 104.

**Specimens examined.** GG– 1 ♀, Mt. Surisan Sanbon Gunpo, 22 viii 2002, Kim TW; 1 ♀, Mt. Cheonggyesan Bundang, 17 v 1977, Lee JH; 1 ♀, Mt. Cheonggyesan Seoul, 31 v 1992, Sohn HR; 1 ♂, Mt. Cheonggyesan Seoul, 15 ix 1997, Park JE; CB– 1 ♀, Sojeong-ri Gunbuk-myeon Okcheon, 23 x 1990, Kim JI; 1 ♀, Suam-ri Sari-myeon Geosan, 12 x 2000, Lee YB; CN– 1 ♂, Sindu-ri Wonbuk Taean, 18 vii 2002, Kim TW; GN– 1 ♂, Geumsan Namhae, 5 v 2001, Ok HY; JB– 1 ♂, Mt. Soyosan Seonun-ri Buan Gochang, 23 v 2001, Kim MA; 1 ♂, Bongeun-ri Buan Gochang, 10 x 1981, Jang GS; JN– 2 ♂ 12 ♀, Mt. Guksabong Yeongam, 15 v 2000, Kim TW & Kim MA; 6 ♂ 4 ♀, Dongsan-ri Jangseong, 30 iii 1974, Kim JH; 1 ♀, Is. Soando Wando, 3 viii 1995, Yoon MR; 1 ♀, Mt. Jogyesan Seungju Suncheon, 24 v 1988, Lee GM; JJ– 1 ♀, Seonheul-ri, 28 ix 2000, Kim MA.

### Subfamily Tetriginae Hancock

### Key to Genera of Korean Tetriginae

1. Eyes greatly protruding, obviously above level of vertex and pronotum. Prozona short and oblong, its width two times of the length. .... *Euparatettix* (*E. insularis*)
- Eyes slightly protruding, above level of vertex and

- pronotum. Prozona squared or moderately oblong, its width less than two times of the length. .... 2
2. Posterior margin of lateral lobes of pronotum with only one (inferior) sinus. Tegmina and wings invisible or vestigial. .... *Formosatettix*
- Posterior margin of lateral lobes of pronotum with two (superior and inferior) sinuses. Tegmina and wings well developed or rather shortened. .... 3
3. Vertex largely protruding between eyes. Frontal ridge strongly inclined forming an acute angle with vertex. .... *Clinotettix* (*C. ussuriensis*)
- Vertex moderately protruding between eyes. Frontal ridge slightly inclined below antennae, straight or slightly concave above antennae. .... *Tettix*

#### Genus *Euparatettix* Hancock, 1904

*Spolia* Zeylan, 2: 145. Type species: *Paratettix personata* Bolívar, 1887.

#### *Euparatettix insularis* Bey-Bienko, 1951

##### 장삼모메뚜기 (Fig. 4)

*Euparatettix insularis* Bey-Bienko in Bey-Bienko and Mishchenko, 1951. Keys Fauna USSR. 38: 106, fig. 61. (Japan). HT ♂ in ZIN.

**Korean records.** *Euparatettix insularis*: Kwon and Huh, 1994: 50; Huh and Kwon, 1995: 8; Moon and Yoon, 1996: 51; Kwon et al., 1996: 104.

**Specimens examined.** GG- 1 ♀, Mt. Myeongjisan Gapyeong, 4 v 2000, Kim YJ; 2 ♀, Sangjeok-dong Seongnam, 6 x 1994, Kim YJ; 1 ♀, Mt. Gwanggyosan Sangkwanggyo Suwon, 30 vii 1999, Park HC; 3 ♂ 2 ♀, Eco-garden NIAST Seodun-dong Suwon, 8 xi 1999, Kim TW; 1 ♂, Mt. Yongmunsan Yangpyeong, 28 vii 2000, Kim TW; 2 ♀, Is. Yeongheung-do Incheon, 15 vii 1999, Kim TW et al. (Light trap); 1 ♂, Gwangneung Pocheon, 30 viii 1999, Sohn JC; CB- 1 ♂ 3 ♀, Suryuji Nohyeon Boeun, 23 x 1990, Park HC & Kim JI; 2 ♀, Sojeong-ri Gunbuk Okcheon, 23 x 1990, Park HC; 1 ♀, Mt. Wolaksan Jecheon, 29 viii 1994, Kim JH; 1 ♀, Nohyeon-ri Munei Cheongwon, 28 v 1991, Kim JI; CN- 1 ♂, Seondong-myeon Nonsan, 7 xii 2000, Lee HS; GN- 2 ♀, Halimjeong Gimhae, 18 ix 1983, Kim MR; JB- 2 ♀, Yongdeok-cup Wanju, 26 vii 1996, Jang SY; JN- 1 ♀, Is. Sinjido Wando, 6 viii 1987, Lee OJ; 1 ♂ 3 ♀, Dongsan Jangseong, 30 iii 1974, Kim JH; JJ- 1 ♀, Andeokgyegok Gamsan-ri Andeok Namjeju, 13 vi 2004, Kim JK & Kim TW; 2 ♀, Jungmun, 11-12 viii 1984, Lee SM.

**Remarks.** Previous Korean records of *Euparatettix histricus* (Stål, 1861) (= *Paratettix histricus*: Doi,

1933: 88; Kamijo, 1933: 48; Cho, 1959: 170, fig. 48; Cho, 1969: 746, pl. 49; Ju, 1969: 22.) are referable to this species. For the comparisons between the species, see Bey-Bienko and Mishchenko (1951), Miyatake and Kanô (1992), Ichikawa (1997).

#### Genus *Formosatettix* Tinkham, 1937

Trans. Nat. Hist. Soc. Formosa, 27: 237. Type species: *Formosatettix arisanensis* Tinkham, 1937.

#### Key to Species of Korean *Formosatettix*

1. Median carina of pronotum more highly elevated from lateral view, anterior margin distinctly triangular from dorsal view. Upper valves of ovipositor longer and narrower, 3.8-4.2 times as long as broad. .... *F. robustus*
- Median carina of pronotum relatively less elevated from lateral view, anterior margin slightly triangular from dorsal view. Upper valves of ovipositor shorter and thicker, 2.9-3.2 times as long as broad. .... *F. larvatus*

#### *Formosatettix robustus* Storozhenko, 1981

##### 참블록모메뚜기 (개칭) (Fig. 5)

*Formosatettix robustus* Storozhenko, 1981. Far East Sci. Cent. USSR Acad: p. 6, figs. 1-6. (Russia). HT ♂ in ZIN.

**Korean records.** *Formosatettix robustus*: Kostia, 1995: 264, figs. 4, 8, 11; Kwon et al., 1996: 104. (새블록모메뚜기).

**Specimens examined.** More than 320 specimens from all areas in South Korea (except Is. Jeju).

#### *Formosatettix larvatus* Bey-Bienko, 1951

##### 블록모메뚜기

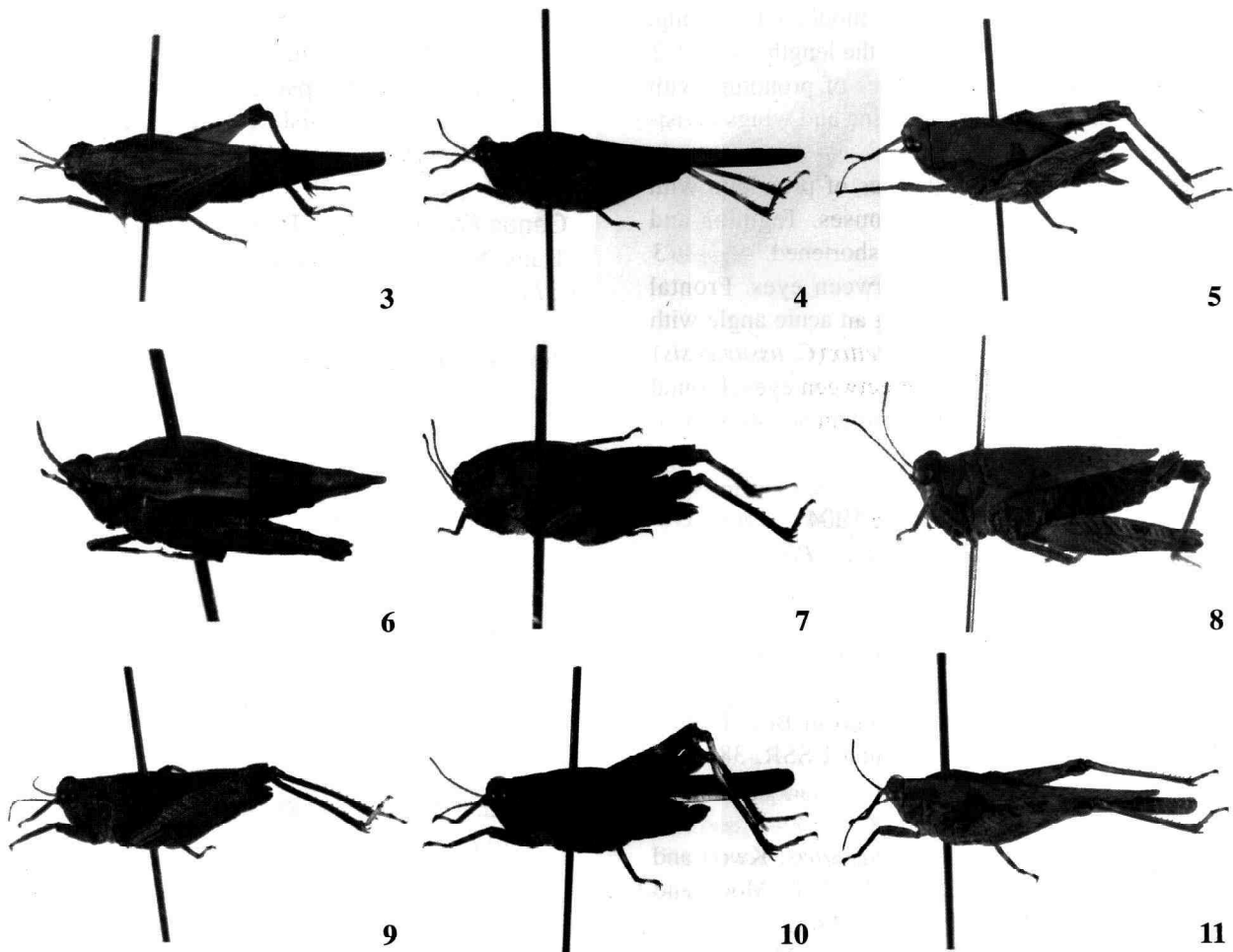
*Formosatettix larvatus* Bey-Bienko in Bey-Bienko and Mishchenko, 1951. Keys Fauna USSR. 38: 102, fig. 60. (Japan). HT ♀ in ZIN.

**Korean records.** *Formosatettix larvatus*: Huh and Kwon, 1995: 8; Kwon et al., 1996: 104.

**Remarks.** Huh and Kwon (1995) were firstly recorded this species from the Is. Jeju in Korea, however, the specimen was unavailable in this study.

#### Genus *Clinotettix* Bey-Bienko, 1933

Bol. Soc. Espan. Hist. Nat. 33: 327. Type species: *Clinotettix ussuriensis* Bey-Bienko, 1933.



Figs. 3–11. Female habitus of Tetrigidae from Korea. (3. *Criotettix japonicus*, 4. *Euparatettix insularis*, 5. *Formosatettix robustus*, 6. *Clinotettix ussuriensis*, 7. *Tetrix simulans*, 8. *Tetrix silvicultrix*, 9. *Tetrix japonica*, 10. *Tetrix japonica* (macropterous form), 11. *Tetrix minor*.)

***Clinotettix ussuriensis* Bey–Bienko, 1933**

뿔모메뚜기 (신칭) (Fig. 6)

*Clinotettix ussuriensis* Bey–Bienko, 1933. Bol. Soc. Espan. Hist. Nat. 33: 329, figs. 9–10. (Russia). HT ♀ in ZIN.

**Korean records.** *Clinotettix ussuriensis*: Kostia, 1995: 264, figs. 9–10.

**Specimens examined.** GW– 1 ♀, Jangneung Yeongweol, 17 iv 2004, Kim TW; GG– 1 ♂, Munsan, 9 x 1972, Kim JI.

**Remarks.** This species was firstly known from North Korea, but is also found in the northern part (GW, GG) of South Korea.

**Genus *Tetrix* Latreille, 1802**

Hist. Nat. Crust. Ins. 3: 284. Type species: *Gryllus*

(*Bulla*) *subulatus* Linnaeus, 1758.

**Key to Species of Korean *Tetrix***

1. Pronotum more tectiform, anterior margin from dorsal view strongly triangular. .... 2
- Pronotum rather platform, anterior margin from dorsal view straight or very slightly triangular. .... 3
2. Antennae shorter, 1.3–1.6 times longer than fore femur. Its median segments 1.8–2.2 times as long as broad. Median carina of pronotum less elevated from lateral view. .... *T. bipunctata*
- Antennae longer, 1.8–2.0 times longer than fore femur. Its median segments 3.0–5.0 times as long as broad. Median carina of pronotum highly elevated from lateral view, arch-form. .... *T. simulans*
3. Obtuse-angulate or triangular fastigium, its median carina weak and not projecting. Antennae shorter,

- its median segments 1.5–1.8 times as long as broad. Oblique carinae of pronotum reaching to the humeral angles. Hind femora slender, 3.5–4.0 times as long as broad. .... *T. subulata*
- Truncated fastigium, its median carina well developed, projecting beyond the anterior margin of fastigium. Antennae longer, its median segments 3.5–5.5 times as long as broad. Oblique carinae of pronotum not reaching to the humeral angles. Hind femora thicker, 2.5–3.2 times as long as broad. .... 4
4. Frontal ridge with distinct emargination between eyes from lateral view. Hind wings strongly abbreviated, its inner margin straight. .... *T. silvicultrix*
- Frontal ridge with weak or without emargination between eyes from lateral view. Hind wings reaching or slightly surpassing the tip of pronotum, its inner margin scalloped. .... 5
5. Body robust. Interocular distance 1.4–2.0 times wider than an eye from dorsal view. Hind femora more thicker, 2.5–3.0 times as long as broad. Upper valves of ovipositor wider and thicker, 2.3–2.6 times as long as broad. .... *T. japonica*
- Body slender. Interocular distance equal to or narrower than an eye from dorsal view. Hind femora rather slender, 3.0–3.2 times as long as broad. Upper valves of ovipositor slender and narrower, 2.7–3.0 times as long as broad. .... 6
6. Pronotum wider, its width ♂ 3.4–3.9, ♀ 4.0–4.4 mm. Median carina of pronotum slightly undulate, lateral carinae of pronotum moderately pronounced from lateral view. .... *T. macilentata*
- Pronotum narrower, its width ♂ 3.0–3.5, ♀ 3.3–3.9 mm. Median carina of pronotum almost straight, lateral carinae of pronotum well marked from lateral view. .... *T. minor*

***Tetrix bipunctata* (Linnaeus, 1758)**

쌍점모메뚜기 (신칭)

*Gryllus (Bulla) bipunctatus* Linnaeus, 1758. Syst. Nat. Ed. 10: 427. No. 17. (Europe). LT ♀ in LS.

**Korean records.** *Tetrix bipunctata*: Kostia, 1995: 261, figs. 2, 6, 13.

**Remarks.** This species was recorded from North Korea, but was not confirmed in this study.

***Tetrix simulans* (Bey-Bienko, 1929)**

광대모메뚜기 (신칭) (Fig. 7)

*Acrydium simulans* Bey-Bienko, 1929. EOS, 5: 367. (Russia). HT ♀ in ZIN.

**Korean records.** *Tetrix simulans*: Kostia, 1995: 262, figs. 1, 5, 12.

**Specimens examined.** GW– 2♂, Samhwasa Bukpyeong, 27 vi 1984, Kim YS & Chang GS; 1♀, Haesanryeong Hwacheon, ? viii 2002, Paik YH.

**Remarks.** This species was recorded from North Korea, but is also found in the northeast part (GW) of South Korea.

***Tetrix subulata* (Linnaeus, 1758) 각진모메뚜기**

*Gryllus (Bulla) subulatus* Linnaeus, 1758. Syst. Nat. Ed. 10: 428, No. 18. (Sweden). LT ♀ in LS. = *Formosatettix slivae* Kostia, 1993. Acta. Zool. Cracov. 34(3): 423, pl. 1, fig. 1. (North Korea: Ohomultong). HT ♀ in PAS.

**Korean records.** *Formosatettix slivae* [!]: Kwon and Huh, 1994: 50; *Formosatettix slivae*: Kostia, 1995: 264, figs. 15–24; Moon and Yoon, 1996: 52; Kwon et al., 1996: 104; Otte, 1997: 102; *Tetrix subulata*: Paik and Storozhenko, 2000: 23.

**Remarks.** This species is recorded only in North Korea yet. Perhaps, its distributional boundary is seemed to be delimited to North Korean area from the boreal distribution in Far-Eastern Asia.

***Tetrix silvicultrix* Ichikawa, 1993**

야산모메뚜기 (신칭) (Fig. 8)

*Tetrix silvicultrix* Ichikawa, 1993. Akitu, 135: 4. figs. II–K. (Japan). HT ♀ in ONHM.

**Description.** Body robust. Anterior margin of fastigium truncate, its median carina well developed. Interocular distance 1.4–1.8 times as wide as an eye from dorsal view. Frontal ridge well developed with distinct emargination between eyes from lateral view. Antennae 1.8–2.0 times longer than fore femur. Anterior margin of pronotum slightly triangular from dorsal view. Hind wings strongly abbreviated, its anterior margin roundly visible from lateral view and inner margin straight. Upper valves of ovipositor rather slender, 2.5–3.0 times as long as broad. Measurements (mm): BL: ♂ 8.5–9.5, ♀ 9.5–10.5. PL: ♂ 7.2–8.2, ♀ 8.2–9.0. HFL: ♂ 6.0–6.3, ♀ 6.8–7.2.

**Specimens examined.** GW– 1♀, Guryongsa Mt. Chiaksan Wonju, 15 vi 1999, Kim TW; GG– 1♂, Mt. Gwanaksan Gwacheon, 26 v 1989, Park JH; 1♂1♀, Gwangneungnae, 18 vi 1983, Kim GA & Lim MW; 1♀, Mt. Munjusan Wolgot Gimpo, 1 vii 1987, Kim JI; 1♀, Bogwangsa Gwangtan Goyang, 11 vi 1977, Kim

YS; 1♂1♀, Mt. Guryongsan Seoul, 9 vi 1996, Paik SJ; 2♂, Mt. Daemosan Seoul, 1 vi 1996, Kim HS; 3♂1♀, Mt. Cheonggyesan Wonji-dong Seoul, 1 vi 1985, Kim HJ et al.; 1♂, Mt. Ahasan Seoul, 29 v 1999, Cho YJ; 3♂1♀, Mt. Suraksan Seoul, 10-28 v 1997, Kim MH et al.; 2♂, Mt. Dobongsan Seoul, 23 v 1990, Sohn SY; 1♀, Mt. Umyeonsan Seoul, 4 ix 1993, Eom MY; 1♀, Mt. Bukhansan Seoul, 28 v 1998, Kim TW; 3♀, Namhansanseong Seongnam, 7 vi 1986, Kim SH et al.; 1♀, Mt. Gwanggyosan Suwon, 13 vii 1991, Lee YJ; 1♂, Seopo-ri Is. Deokjeok-do Ongjin, 6 vii 1981, Kim JI; 1♂1♀, Mt. Cheonmasan Pyeongnae, 4-8 vi 1983, Gwak HS & Park SH; 1♀, Hanam, 31 v 1998, Song SJ; CB- 1♀, Songmyeon-ri Cheongcheon, 22 vi 1987, Lee HS; 1♀, Mt. Wolaksan Chungju, 31 v 1995, Kim JH; CN- 1♀, Hanseo Univ. campus Haemi Seosan, 22 vi 2001, Lee HY; GB- 1♂3♀, Temple Jikjisa Mt. Hwanghaksan, 2-4 vi 1978 Kim MK et al.; 1♀, Bulyeonggyegok Uljin, 27 vi 1990, Kim MY; 2♂, Mt. Sudosan, 12-15 vi 1977, Yamagishi K; 1♀, Mt. Sobaeksan Punggi, 6 vi 1981, Jin DW; 1♀, Mt. Palgongsan Daegu, 12 vi 2000, Kim MA; GN- 1♀, Mt. Jirisan Samchang, 9 viii 1994, Lee GI; JN- 1♀, Mt. Durunsan Haenam, 23 vi 1993, Yang GG.

**Distributions.** Korea (new record), Japan.

#### *Tetrix japonica* (Bolívar, 1887)

##### 모메뚜기 (Figs. 9, 10)

*Tetrix japonicus* Bolivar, 1887. Ann. Soc. Ent. Belgique, 31: 263. (Japan). HT ♀ in NMW.

**Korean records.** *Tetrix japonicus*: Doi, 1932: 34; *Acrydium japonicus*: Doi, 1933: 88; Cho, 1963: 162; Ju, 1969: 22; *Acrydium japonicum*: Furukawa, 1939: 109, 176; Cho, 1959: 169, fig. 46; Cho, 1969: 745, pl. 49; *Tetrix japonica*: Kwon and Huh, 1994: 50; Storozhenko et al., 1994: 13, figs. 32-44; Huh and Kwon, 1995: 8; Kostia, 1995: 260, figs. 3, 7, 14; Moon and Yoon, 1996: 52; Kwon et al., 1996: 104.

**Specimens examined.** Through checking more than 1,200 specimens investigated from all areas of South Korea, fifteen of macropterous form (Fig. 10) are observed.

#### *Tetrix macilenta* Ichikawa, 1993

##### 가는모메뚜기 (신칭)

*Tetrix macilenta* Ichikawa, 1993. Akitu, 135: 5, figs. 1E, 2A-C. (Japan). HT ♀ in ONHM.

**Korean records.** *Tetrix macilenta*: Storozhenko et

al., 1994: 16, figs. 45-55. (Korea: 1♂, Shonei-Keinan, 3 vii 1941, Baron Kawasaki)

**Remarks.** A specimen was unavailable in this study.

#### *Tetrix minor* Ichikawa, 1993

##### 꼬마모메뚜기 (신칭) (Fig. 11)

*Tetrix minor* Ichikawa, 1993. Akitu, 135: 6, figs. 2D-F. (Japan). HT ♀ in ONHM.

**Description.** Body small and slender. Interocular distance equal to or slightly narrower than an eye from dorsal view. Anterior margin of pronotum truncate, width of pronotum slightly narrower than *Tetrix macilenta* from dorsal view. Median carina of pronotum almost straight, lateral carinae of pronotum well marked from lateral view. Tip of pronotum surpassing the abdominal end or ovipositor as variable degree (mostly macropterous form). Hind femora rather slender, 3.0-3.2 times as long as broad. Ovipositor slender and narrower, its upper valves 2.7-3.0 times as long as broad. Measurements (mm): BL: ♂ 8.0-12.5, ♀ 8.0-13.0. PL: ♂ 6.0-10.0, ♀ 6.0-10.5. HFL: ♂ 4.5-5.5, ♀ 5.0-6.0.

**Specimens examined.** GG- 1♀, Ganghwa, 18 iii 1990, Oh SJ; 1♂1♀, Gangseo Eco-park Banghwa-dong Seoul, 24 vii 2004, Kim TW; 1♀, Sudongmyeon, 29 iii 1980, Kim JS; 2♂, Yeonggyeong Pocheon, 18 viii 1996, ?; 1♂, Mt. Daemosan Seoul, 19 viii 1996, Kim JE; 1♀, Mt. Bukhansan Seoul, 28 v 1998, Kim TW; 1♀, Suyuo-dong Seoul, 10 x 1997, Cho GH; CB- 1♀, Mt. Cheongdeungsan Sancheok Chungju, 6 viii 2002, Kim TW; 1♀, Mt. Gyemyeongsan Chungju, 24 viii 2000, Kim TW; 1♂, Songmyeon-ri Cheongcheon, 22 vi 1989, Lee HS; 1♀, Deokgok-ri Jecheon, 15 ix 1996, Jeon YS; 1♂, Sojeong-ri Gunbuk Okcheon, 23 x 1990, Park HC; 1♀, Gosa-ri Yeonpung, 22 vi 1989, Yang JO; 1♂, Suryuji Nohyeon Boeun, 23 x 1990, Park HC; GB- 1♀, Mt. Hwanghaksan, 4 vi 1978, Ko MK; JN- 1♀, Mt. Sanghwangbong Wando, 15 vii 2003, Kim TW; JJ- 1♂, Gwaneumsa Temple, 30 vii 1998, Park HC; 1♂, Andeokgyegok Gamsan-ri Andeok Namjeju, 21 iv 2004, Kim JK & Kim TW; 1♀, Seongpanak, 5 v 1990, Park HC; 1♂5♀, Nohyeong-dong Jeju, 11 viii 2004, Seung JB & Jeong BH; 1♀, Temple Cheonwangsang Jeju, 10 vii 2002, Kim TW; 3♀, Jungmun, 11-12 viii 1984, Lee SM.

**Distributions.** Korea (new record), Japan.

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