

The Spider Fauna of DMZ of Chulwon Areas in Kangwon-do, Korea

Kim, Joo-Pil

(Department of Biology, College of Natural Science, Dongguk University · The Arachnological Institute of Korea)

강원도 철원지역 DMZ의 거미상

김 주 필

(동국대학교 이과대학 생물학과 · 한국거미연구소)

ABSTRACT

The spider fauna of DMZ (Demilitarized Zone) of Chulwon in Kangwon-do, Korea was investigated. As a result, the authors present a list of 54 species of 54 genera in 14 families (2 unidentified species newly known to Korea; *Evarch* sp (C)., *Helicius* sp. (A)) and revise *Asianellus festivus* of the unrecorded genus to be transferred from the genus *Phlegra* from Korea.

Key words : Spider fauna, *Evarch* sp (C)., *Helicius* sp. (A), Unrecorded genus, DMZ, Korea.

INTRODUCTION

After Namkung & Yoon (1975) investigating the spider fauna of Mt. Gamak, Paju-gun, near DMZ, only Namkung et al., (1988) were reported the spider fauna only in eastern DMZ, Kwangwon-do. The present study was carried out to clarify the additional spider fauna of western DMZ, Kangwon-do, Korea. The spiders collected by hand sorting, sweeping, beating and pitfall-trapping in DMZ, Kangwon-do, from Oct. 3 to Oct. 5, 1997 were preserved in 80% ethylalcohol and observed under stereoscopic microscope (SZH 10, 140X) in steeping condition. Changes of the scientific names and identification used in this paper were performed according to Kim (1998) and Platnick (1997), and all the descriptions of the genus *Asianellus* were described by the method of Proszynski (1998). All specimens were deposited in the Arachnological Institute of Korea. The abbreviations used in this paper are as follows:

C., China; J., Japan; T., Taiwan; Ts., Tsushima Island; Cos., Cosmopolitan; Hol., Holarctic region; Or., Oriental region; Pal., Palaearctic region

SYSTEMATIC ACCOUNTS

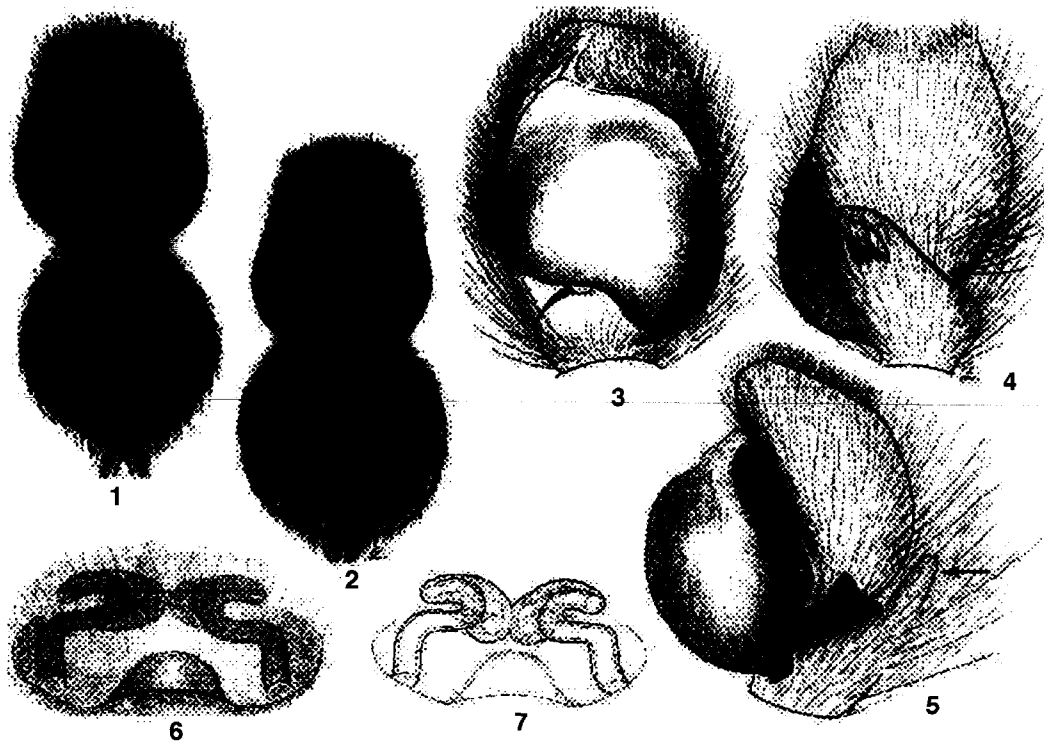
Family Dictynidae O. P. -Cambridge, 1871

- Genus *Dictyna* Sundevall, 1833
Dictyna sp.
 Family Uloboridae Thorell, 1869
 Genus *Miagrammopes* O.P.-Cambridge, 1870
Miagrammopes sp.
 Genus *Uloborus* Latreille, 1806
Uloborus sp.
 Family Pholcidae C. L. Koch, 1851
 Genus *Pholcus* Walckenaer, 1805
P. opilionoides (Schrank, 1781) K. J. C. (Hol.)
 Family Theridiidae (Sundevall, 1833)
 Genus *Achaearanea* Strand, 1929
A. culicivora (Boesenberg et Strand, 1906) K. J. Ts. C. Ku.
A. tepidariorum (C. L. Koch, 1841)
 K. J. Ts. Am. To. T.C. Ku. Sk. (Cos.)
 Genus *Chryso* O. P. -Cambridge, 1882
C. rapulum (Yaginuma, 1960) K. J. Ts. Am. Pk. C. Sk.
 Genus *Dipoena* Thorell, 1869
D. mustelina (Simon, 1888) K. J. Ts. Rk. T. C. Sk.
Dipoena sp.
 Genus *Episinus* Walckenaer.
Episinus sp.
 Genus *Theridion* Walckenaer, 1805
T. pinastri L. Koch, 1872 K. J. Am. C. (Pal.)
T. sterninotatum Boesenberg et Strand, 1906 K. J. C.

- Family Linyphiidae Blackwall, 1859
 Genus *Floronia* Simon, 1887
F. bucculenta (Clerck, 1758) K. J. C. Sk. Eur. (Pal.)
 Genus *Neriene* Blackwell, 1833
N. japonica (Oi, 1960) K. J. C. Ku.
 Genus *Erigone* Audouin, 1826
E. prominens Boesenberg et Strand, 1906 K. J. T. C.
 Cammeroon, New Zealand
 Genus *Gonatium* Menge, 1868
G. japonicum Simon, 1894 K. J. C.
 Family Araneidae Dahl, 1912
 Genus *Araneus* Clerck, 1758
A. cornutus (Clerck, 1758) K. J. C. Sk. (Hol.)
A. tsuno Yaginuma, 1972 K. J. C. USSR.
A. ventricosus (L. Koch, 1878) K. J. Ts. Am. Rk. To. T. C. Sk. USSR.
 Genus *Araniella* Chamberin et Ivie, 1942
A. hexamaculata Kim et Kim, 1997 K.
 Genus *Argiope* Audouin, 1827
A. bruennichii (Scopoli, 1772) K. J. Ts. Am Rk. To. C. Sk. (Pal.)
 Genus *Chorizopes* O. P. -Cambridge, 1870
C. nipponicus Yaginuma, 1963 K. J. Rk. C.
 Genus *Cyclosa* Menge, 1866
C. laticauda Boesenberg et Strand, 1906 K. J. Ts. T. C.
C. octotuberculata Karsch, 1879 K. J. Ts. Rk. T. C.
C. sedeculata Karsch, 1879 K. J. Am. T. C.
 Genus *Larinia* Simon, 1874
L. argiopiformis Boesenberg et Strand, 1906 K. J. Ts. Rk. To. T. C. USSR.
 Genus *Neoscona* Simon, 1864
N. adianta (Walckenaer, 1802) K. J. Rk. C. Mon. Sk. Ku.(Pal.)
N. nautica (L. Koch, 1875) K. J. Ts. Am. Rk. To. T. C. (Cos.)
N. scylla (Karsch, 1879) K. J. Ts. Am. Rk. To. T. C.
 Genus *Singa* C. L. Koch, 1836
S. hamata (Clerck, 1758) K. J. C. Mon. Sk. Eur. (Pal.)
 Family Tetragnathidae Menge, 1866
 Genus *Dyschiriognatha* Simon, 1893
D. tenera (Karsch, 1879) K. J. C. Mon.
 Genus *Leucauge* White, 1841
Leucauge sp.
 Genus *Nephila* Leach, 1815
N. clavata L. Koch, 1878 K. J. Ts. Am. Rk. T. C. (Or.)
 Genus *Tetragnatha* Latreille, 1804
T. extensa (Linnaeus, 1758) K. J. C. Sk. Ku. Sib. (Hol.)
T. maxillosa Thorell, 1895 K. J. Ts. Am. Rk. Og. T.
- Genus *Zilla* C. L. Koch, 1834
Zilla sp.
 Family Urocteidae (Thorell, 1869)
 Genus *Uroctea* Dufour, 1820
U. lesserti Schenkel, 1937 K. C.
 Family Agelenidae C. L. Koch, 1937
 Genus *Agelena* Walckenaer, 1805
A. limbata Thorell, 1897 K. J. Ts. T. C. Burma to Japan
A. opulenta L. Koch, 1878 K. J. Ts. To. T. C. Mon.
 Genus *Coelotes* Blackwal, 1841
Coelotes sp.
 Genus *Paracoelotes* Brignoli, 1982
Paracoelotes spinivulva (Simon, 1880)
 Family Pisauridae Simon, 1980
 Genus *Dolomedes* Latreille, 1804
D. sulfureus L. Koch K. J. Ts. C. Ku.
 Genus *Pisaura* Simon, 1885
P. lama Boesenberg et Strand, 1906 K. J. Ts. C. Ku. USSR.
 Family Lycosidae Sundevall, 1833
 Genus 1. *Alopecosa* Simon, 1885
Alopecosa sp.
 Genus *Lycosa* Latreille, 1804
Lycosa sp.
 Genus *Pardosa* C. L. Koch, 1848
P. ástrigera L. Koch, 1878 K. J. Ts. Rk. T. C. Sk. Ku.
P. laura Karsch, 1879 K. J. Ts. To. T. C.
P. lugubris (Walckenaer, 1802) K. J. Sk. Ku. (Pal.)
 Genus *Pirata* Sundevall, 1833
P. clercki (Boesenberg et Strand, 1906) K. J. Ts. T. C.
P. piratoides Boesenberg et Strand, 1906 K. J. C.
 Family Oxypidae Thorell, 1869
 Genus *Oxyopes* Latreille, 1804
Oxyopes sp.
 Family Clubioidae Wanger, 1888
 Genus *Cheiracanthium* C. L. Koch, 1839
Cheiracanthium sp.
 Genus *Ciubiona* Latreille, 1804
Clubiona sp.
 Family Thomisidae Sundevall, 1833
 Genus *Misumenops* F. O. P. -Cambridge, 1900
Misumenops sp.
 Genus *Oxyptila* L. Koch, 1878
Oxyptila sp.
 Genus *Synema* Simon, 1864
S. globosum (Fabricius, 1775) K. J. C. Sib. (Pal.)
 Genus *Xysticus* C. L. Koch, 1835
Xysticus sp.

Ecological Evolution of the Spiders

- Family Philodromidae O. P. -Cambridge, 1871
 Genus *Philodromus* Walckenaer, 1826
Philodromus sp.
 Genus *Thanatus* C. L. Koch, 1837
T. coreanus Paik, 1979 K. C.
 Family Salticidae Blackwall, 1841
 Genus *Asianellus* Logunov et Heciak, 1996 (신칭)
A. festivus (C. L. Koch, 1834)
 Genus *Helicius* Zabka, 1981
Helicius sp. (A)
 Genus *Heliophanus* C. L. Koch, 1833
H. ussuricus Kulczynski, 1895 K. J. C. Mon. Sib. Sk. Ku.
 Genus *Marpissa* C. L. Koch, 1846
M. elongata (Karsch, 1879) K. J. Ts. Am. Rk. T. C. Ku.
 Genus *Myrmarachne* Macleay, 1839
Myrmarachne sp.
 Genus *Phintella* Strand, 1906
Phintella sp.
 Genus *Rhene* Thorell, 1869
Rhene sp.
 Genus *Sitticus* Simon, 1901
S. albolineatus (Kulczynsky, 1985) K. C. Sib.
S. avocator (O. P. -Cambridge, 1885) K. J. C. Sib.
S. fasciger (Simon, 1880) K. J. C. Sib. USA. (Hol.)
 Genus *Synagelides* Strand, 1906
Synagelides sp.
- Family Salticidae Blackwall, 1841
 Genus *Asianellus* Logunov et Heciak, 1996
 Type species: *Euophrys festivus*
Euophrys festivus C. L. Koch, 1834, Herrich-Schaeffer, *Deutschl. Ins.*, p. 123, ff. 5, 6.
Euophrys striata C. L. Koch, 1848, *Die Arachniden*, **14**: 1, ff. 1272-1273.
Pandora striata : C.L. Koch, 1850, *Uebers, Arachn. Syst.*, **5**: 64.
Salticus melanotarsus Grube, 1861, *Bull. Ac. Sci. St. Petersbg.*, 4: 177.
Attus litteratus Simon, 1868, *Ann. Soc. Ent. France*, **8**(4): 68, 532.
Yllenus festivus : Thorell, 1873, *Rem. Syn. Europ. Spid.*, p. 379.
Ictidops festivus : Kulczynski, 1884, *Conspect. Attid. Galic.*, p. 50.
Aelurops festivus: Simon, 1876, *Arachn. de France*, **3**: 137, pl. 11, f. 6.
Aelurillus festivus: Yaginuma, 1970, p. 670.; Proszynski, 1971a, pp. 209-210, ff. 7-9 (s. *Attus gilvus, melanotarsus*).; Proszynski, 1971b, pp. 233-236, ff. 2-7.; Proszynski, 1979, p. 302.; Proszynski, 1982, p. 274-275, ff. 1-3, 7, 9 (D MF).; Yaginuma, 1986, p. 222, f. 123.4 (D MF).; Chikuni, 1989, p. 157, f. 48 (F).; Wesolowska, 1991, p. 2 (N).; Logunov, 1992, p. 48-50 (from Tuva).
Phlegra festivus: Harm, 1977, pp. 69-72, ff. 2a-b, 10-12, 14a-b (MF, T from *Aelurillus*).; Wesolowska, 1981, p. 46, ff. 2-4.; Paik, 1985, p. 47, f. 17-27 (D MF).; Zhou, & Song, 1988, p. 7, ff. 9a-e (MF).; Proszynski, 1991, p. 514, ff. 1374. 2-4, [page 1374 is *Philaeus chrysops*, printing error !]; Peng, Xie, & Xiao, 1993, pp. 168-169, ff. 590-597 (MF).
Asianellus festivus: Logunov et Heciak, 1996, *Entomologica Scandinavica*, **27**: 106-108, ff. 1-5, 8, 10, 17-19, 23-28, 35, 39 (comb. n. - MF T from *Aelurillus*).; Zabka, 1997, pp. 38-39, ff. 47-53 (MF).
- MEASUREMENT (mm.)**
 Female: body length, 9.27; carapace length/width, 3.75/2.78; abdomen length/width, 5.31/4.54; sternum length/width, 1.48/0.89; cheliceral length/width, 1.11/0.74; labium length/width, 0.49/0.45; endite length/width, 0.82/0.49; length of 1st eye row, 2.00; length of 2nd eye row, 2.00; length of 3rd eye row, 2.00; height of ocular quadrangle, 1.51.
 Leg I 5.28 (1.76, 1.02, 1.02, 0.67, 0.82), II 5.56 (1.88, 1.06, 1.06, 0.75, 0.86), III 8.08 (2.67, 1.45, 1.37, 1.61, 1.06), IV 8.23 (2.55, 1.18, 1.76, 1.88, 1.06); palp 2.86 (0.94, 0.59, 0.47, 0.86).
 Male: body length, 6.59; carapace length/width, 3.37/2.43; abdomen length/width, 3.06/2.39; sternum length/width, 1.31/0.82; cheliceral length/width, 0.94/0.59; labium length/width, 0.35/0.40; endite length/width, 0.72/0.45; length of 1st eye row, 1.76; length of 2nd eye row, 1.76; length of 3rd eye row, 1.80; height of ocular quadrangle, 1.37.
 Leg I 5.15 (1.61, 1.06, 0.91, 0.74, 0.87), II 5.09 (1.68, 1.04, 0.87, 0.77, 0.89), III 7.01 (2.22, 1.16, 1.33, 1.48, 1.04), IV 7.10 (2.17, 1.01, 1.33, 1.70, 1.01); palp 2.84 (0.94, 0.42, 0.59).
- Description**
 ♀: Caprapace index is 74, longer than width. Eye areas and thoracic margin darkish, the rest part brownish. Clypeus height two third of the diameter of anterior median eyes. Posterior median eyes. Posterior eyes set precisely half-way along carapace. Ocular quadrangle broader than long, equal behind to in front. Endites and labiums with thin brown except edge part brwnish white. Endite index 60, and labium index 92.
 Chelicera brown armed with 1 retromarginal and 2 promar-



Figs. 1-7. *Asianellus festivus* (C. L. Koch, 1834).

1. Male, dorsal view. 2. Female, dorsal view. 3. Palpal organ, ventral view. 4. Ditto, dorsal view.
 5. Ditto, lateral view. 6. Epigynum, ventral view. 7. Ditto, dorsal view

Table 1. Synopsis of the spider fauna of DMZ in Kangwon-do, Korea

Family	Gen.	Sp.	Family	Gen.	Sp.
1 Dictynidae	1	1	9 Agelenidae	3	4
2 Uloboridae	2	2	10 Pisauridae	2	2
3 Pholcidae	1	1	11 Lycosidae	4	7
4 Theridiidae	5	8	12 Oxyopidae	1	1
5 Linyphiidae	4	4	13 Clubionidae	2	2
6 Araneidae	8	14	14 Thomisidae	4	4
7 Tetragnathidae	5	6	15 Philodromidae	2	2
8 Urocteidae	1	1	16 Salticidae	9	11

Total 14 Families, 54 Genera, 70 Species

ginal teeth. Sternum oval, light yellowish brown, and its margin no project the margin of 4th legs.

Leg formula 4 · 3 · 2 · 1. Leg formular index, 100: 105: 153: 156.

The abdominal dorsum pale yellow with 4 black bands and complex patterns.

Epigynum and genitalia as illustrated in the figures 6-7.

♂: General aspects and coloration essentially similar to female. Carapace dark and both thoracic sides with white hair.

Ocular quadrangle smaller than length behind and in front (0.41; 0.98; 0.78). Labium index 114, endite index 63. Chelicera armed with 1 retromarginal and 2 promarginal teeth and index 63.

Leg formula 4 ≅ 3, 2 ≅ 1, formular index, 100: 99: 136: 138. Leg/c 1.53, fem. I/c 0.48, fem. I //d 2.18.

The abdominal venter yellowish brown and dorsum dark with faint yellowish brown chevrons posteriorly.

Palpal organ as illustrated in the figures 3-5.

적 요

강원도 철원일대 비무장지대의 거미상을 조사한 결과 14과, 54속, 70종이었다. 이중 처음으로 한국에서 발견된 미동정종, *Evarch* sp (C)., *Helicius* sp. (A)과 屬을 전환시킨 *Asianellus festivus*을 재기재한다.
 검색어: 비무장지대, 거미상, *Evarch* sp (C)., *Helicius* sp. (A), 미기록속, 한국.

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