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Han Li

College of Life Science, Hebei University, Baoding 071002, P. R. China

Liu Hao-Yu

Museum, Hebei University, Baoding 071002, P. R. China

Shi Fu-Ming

College of Life Science, Hebei University, Baoding 071002, P. R. China

The investigation of Orthoptera from Huagaoxi Nature Reserve of Sichuan, China

Han Li, Liu Hao-Yu and Shi Fu-Ming

Abstract

We conducted a survey for Orthoptera in the Huagaoxi Nature Reserve of Sichuan for the first time during the summer of 2013. The result deals with 22 genera 35 species of superfamily Tettigonioidae, 10 genera 11 species of superfamily Acridoidea, and 14 genera 20 species of family Gryllidae, 1 genus 1 species of family Gryllotalpidae. In addition, *Gampsocleis sinensis* (Walker, 1871) is one newly recorded species of Sichuan.

Keywords: Orthoptera, Huagaoxi Nature Reserve, Sichuan, China

1. Introduction

The Huagaoxi Nature Reserve is located in Xuyong County, Sichuan, China, with the total area of 238.27 km², and its altitude range from 332 m to 1787.3 m. It belongs to the transitional zone of the Yunnan-Guizhou Plateau and the middle of Sichuan Basin. It is also famous for the beautiful waterfalls and sufficient streams which provide a good habitat for the lives here. The collecting field are some typical ones of Xuyong County, and the main habitat is covered with herbage and bamboo.

Huagaoxi Nature Reserve are admitted in 2003. Several surveys were also held before, but it is the first time to investigate insect. Thus, during 2013, a more comprehensive surveys are held to complete the study. This article mainly reports the results of Orthoptera survey in Huagaoxi Nature Reserve.

2. Martial and Methods

Two collecting methods were employed for collecting species: (1) net sweeping of the understory vegetation during the day; (2) collecting at fluorescent lights at night. The time and methods are different for locust, cricket and bush-cricket as their various living fields and habits. Day collecting along the forest roads is conducted for Acridoidea and partly Tettigoniidae. While some species of Tettigoniidae and most Grylloidea are highly active at night, therefore some collections are conducted after dark, until late at night. All these specimens are either dry-mounted or preserved in alcohol and deposited in Hebei University. The specimens are collected by Han Li and Liu Hao-Yu. An annotated list of collected species is given below.

3. List of the Species

Superfamily Tettigonioidae Krauss, 1902

Family Tettigoniidae Krauss, 1902

Subfamily Conocephalinae Burmeister, 1838

3.1. *Conocephalus (Anisoptera) maculatus (Le Guillou, 1841)*

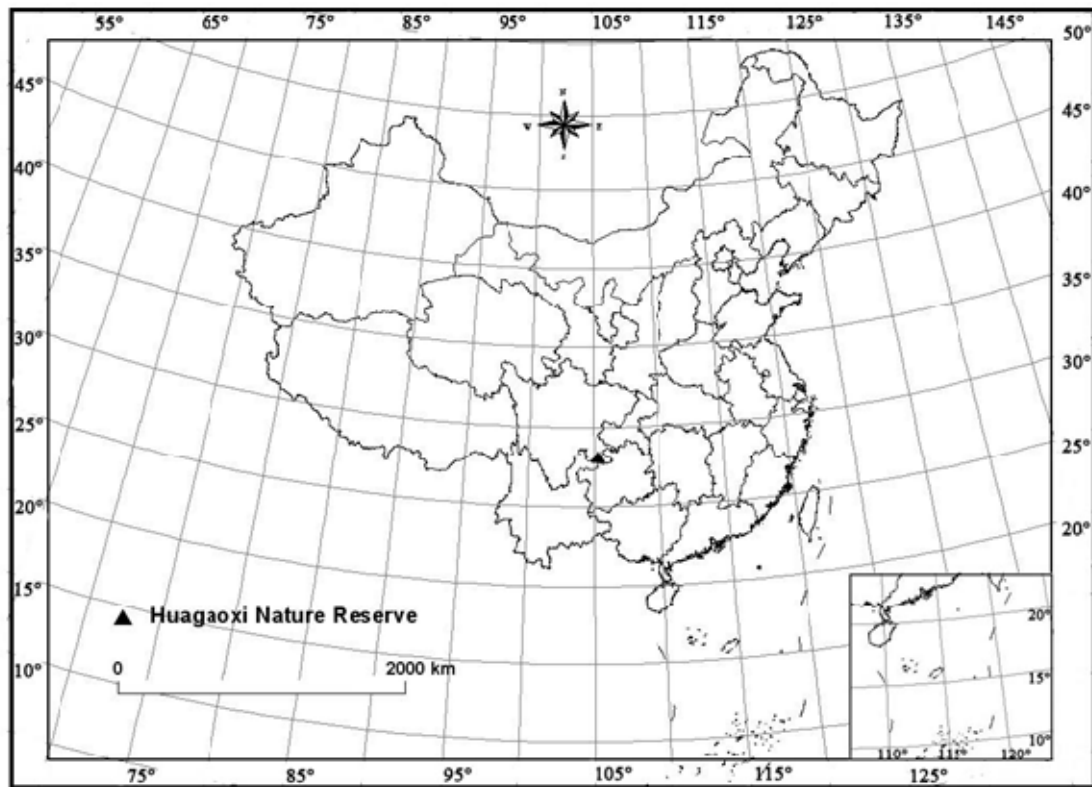
Material. Sichuan (Xuyong): 3 males, 10 females, 24-25.VIII 2013; 3 males, 5 females, 30.VIII 2013.

Distribution. China (Beijin, Chongqing, Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hebei, Hong Kong, Hubei, Hunan, Jiangsu, Jiangxi, Shanxi, Shanghai, Sichuan, Shaanxi, Taiwan, Xizang, Yunnan, Zhejiang), Japan, Philippines, Malaysia, Indonesia, Burma, Thailand, Nepal, India, Sri Lanka, New Zealand, Australian, Africa.

Correspondence:

Shi Fu-Ming

College of Life Science, Hebei University, Baoding 071002, P. R. China



Map 1: The location of the Huagaoxi Nature Reserve in China.

3.2. *Conocephalus (Anisoptera) exemptus (Walker, 1869)*

Material. Sichuan (Xuyong): 1 male, 5 females, 24.VIII 2013; 3 males, 5 females, 27.VIII 2013; 6 females, 30.VIII 2013.

Distribution. China (Sichuan, Beijing, Hebei, Liaoning, Shanghai, Zhejiang, Fujian, Jiangxi, Henan, Hubei, Hunan, Guangdong, Guangxi, Chongqing, Guizhou, Shaanxi, Taiwan), Japan, South Korea, Nepal, Thailand.

3.3. *Conocephalus (Anisoptera) melaenus (Haan, 1842)*

Material. Sichuan (Xuyong): 3 males, 3 females, 22-VIII-2013; 3 females, 26.VIII 2013; 1 male, 5 females, 30.VIII 2013.

Distribution. China (Sichuan, Shanghai, Jiangsu, Zhejiang, Anhui, Fujian, Jiangxi, Henan, Hunan, Guangdong, Guangxi, Hainan, Guizhou, Yunnan, Taiwan), Japan, Nepal, India, Thailand, Singapore, Indonesia.

3.4. *Conocephalus (Conocephalus) bidentatus Shi & Zheng, 1994*

Material. Sichuan (Xuyong): 1 male, 26.VIII 2013.

Distribution. China: Sichuan, Zhejiang, Anhui, Yunnan, Guangxi, Chongqing.

3.5. *Conocephalus (Amurocephalus) chinensis (Redtenbacher, 1891)*

Material. Sichuan (Xuyong): 1 female, 27.VIII 2013.

Distribution. China (Sichuan, Inner Mongolia, Liaoning, Jilin, Heilongjiang, Shanghai, Jiangsu, Anhui, Jiangxi, Shandong, Henan, Hubei, Hunan, Chongqing, Shaanxi), Russia, Japan, South Korea.

3.6. *Conocephalus (Conocephalus) sulcifrontis Xia & Liu, 1992*

Material. Sichuan (Xuyong): 1 female, 26.VIII 2013.

Distribution. China: Sichuan, Jiangsu, Shanghai, Hunan,

Guangxi, Chongqing, Guizhou.

3.7. *Conocephalus (Anisoptera) japonicus (Redtenbacher, 1891)*

Material. Sichuan (Xuyong): 2 males, 1 female, 26.VIII 2013.

Distribution. China (Sichuan, Hebei, Inner Mongolia, Jilin, Heilongjiang, Shanghai, Jiangsu, Anhui, Fujian, Henan, Hubei, Hunan, Guangdong, Guangxi, Hainan, Guizhou, Shaanxi, Hong Kong, Taiwan), Japan, South Korea.

3.8. *Conanalus pieli Tinkham, 1943*

Material. Sichuan (Xuyong): 1 female, 27.VIII 2013.

Distribution. China: Sichuan, Zhejiang, Anhui, Jiangxi, Henan, Hunan, Chongqing, Guizhou, Shaanxi.

3.9. *Ruspolia lineosa (Walker, 1869)*

Material. Sichuan (Xuyong): 1 male, 4 females, 22-23.VIII 2013; 2 females, 30.VIII 2013.

Distribution. China (Sichuan, Zhejiang, Shanghai, Anhui, Fujian, Jiangxi, Henan, Hubei, Hunan, Guangdong, Guangxi, Chongqing, Guizhou, Yunnan, Tibet, Shaanxi, Taiwan), Japan, South Korea.

3.10. *Euconocephalus pallidus (Redtenbacher, 1891)*

Material. Sichuan (Xuyong): 1 female, 30.VIII 2013.

Distribution. China (Sichuan, Fujian, Hunan, Guangdong, Guangxi, Hainan, Yunnan, Taiwan), India, Vietnam, Burma, Thailand, Singapore, Philippines, Indonesia, Sri Lanka, New Guinea.

3.11. *Euconocephalus nasutus (Thunberg, 1815)*

Material. Sichuan (Xuyong): 1 male, 25.VIII 2013.

Distribution. China (Sichuan, Zhejiang, Anhui, Fujian, Hubei, Guangdong, Guangxi, Hainan, Chongqing, Guizhou, Yunnan, Taiwan), Japan, South Korea, India, Thailand, Indonesia.

3.12. *Pyrgocorypha gracilis* Liu, 1997

Material. Sichuan (Xuyong): 3 females, 25.VIII 2013.
Distribution. China: Sichuan, Chongqing, Guizhou, Yunnan.

Subfamily Hexacentrinae Karny, 1925

3.13. *Hexacentrus japonicus* Karny, 1907

Material. Sichuan (Xuyong): 1 female, 22.VIII 2013; 2 females, 24.VIII 2013; 1 female, 28.VIII 2013; 1 female, 30.VIII 2013.

Distribution. China (Sichuan, Hebei, Liaoning, Shanghai, Zhejiang, Anhui, Fujian, Shandong, Henan, Hubei, Hunan, Chongqing, Guizhou), Japan, South Korea.

Subfamily Tettigoniinae Krauss, 1902

3.14. *Gampsocleis sinensis* (Walker, 1871)

Material. Sichuan (Xuyong): 2 females, 24-25.VIII 2013.
Distribution. China: Sichuan, Zhejiang, Jiangsu, Shanghai, Anhui, Hubei, Chongqing, Hunan, Fujian, Taiwan.

Notes: Species herein is recorded for the first time from Sichuan province.

3.15. *Tettigonia chinensis* Willemse, 1933

Material. No specimen of this species are collected during this survey. But according to its geographic position, there should have this species distributed here.

Distribution. China: Sichuan, Zhejiang, Henan, Hubei, Hunan, Fujian, Guangxi, Chongqing, Guizhou.

Subfamily Meconematinae Burmeister, 1838

3.16. *Xizicus (Xizicus) fascipes* (Bey-Bienko, 1955)

Material. Sichuan (Xuyong): 1 female, 26.VIII 2013.
Distribution. China: Sichuan, Chongqing, Guangxi, Hubei, Guizhou.

3.17. *Xizicus (Axizicus) spathulatus* (Tinkham, 1944)

Material. Sichuan (Xuyong): 1 male, 10 females, 25-26.VIII 2013; 1 male, 2 females, 29-30.VIII 2013.

Distribution. China: Sichuan, Hubei, Hunan, Chongqing, Guangxi, Guizhou.

3.18. *Xizicus (Axizicus) szechwanensis* (Tinkham, 1944)

Material. Sichuan (Xuyong): 1 female, 25.VIII 2013.
Distribution. China: Sichuan, Zhejiang, Anhui, Jiangxi, Hunan, Chongqing, Guangxi, Guizhou, Yunnan.

3.19. *Decma (Decma) fissa* (Xia & Liu, 1992)

Material. Sichuan (Xuyong): 10 males, 12 females, 27.VIII 2013; 6 males, 6 females, 29-30.VIII 2013.

Distribution. China: Sichuan, Jiangsu, Zhejiang, Fujian, Jiangxi, Guangdong, Guangxi, Hunan, Hubei, Guizhou.

3.20. *Teratura (Macroteratura) megafurcula* (Tinkham, 1944)

Material. Sichuan (Xuyong): 1 male, 1 female, 22.VIII 2013; 3 male, 11 females, 25-28.VIII 2013.

Distribution. China: Sichuan, Zhejiang, Anhui, Fujian, Jiangxi, Hubei, Hunan, Guangdong, Guangxi, Chongqing, Guizhou.

3.21. *Teratura (Megaconema) geniculata* (Bey-Bienko, 1962)

Material. Sichuan (Xuyong): 1 female, 25.VIII 2013; 2 females, 27.VIII 2013.

Distribution. China: Sichuan, Anhui, Henan, Hubei, Hunan, Chongqing, Guizhou, Shaanxi.

3.22. *Phlugiolopsis tuberculata* (Xia & Liu, 1992)

Material. Sichuan (Xuyong): 2 males, 1 female, 25-26.VIII 2013; 3 females, 29-30.VIII 2013.

Distribution. China: Sichuan, Guangxi, Guizhou, Hunan.

NOTE: This species is recorded for the first time from Sichuan province.

3.23. *Alloxiphidiopsis emarginata* (Tinkham, 1944)

Material. Sichuan (Xuyong): 3 males, 6 females, 25.VIII 2013; 3 males, 2 females, 30.VIII 2013.

Distribution. China: Sichuan, Hunan, Guangxi, Guizhou, Yunnan.

3.24. *Xiphidiopsis (Xiphidiopsis) bituberculata* Ebner, 1939

Material. Sichuan (Xuyong): 7 males, 9 females, 25.VIII 2013; 3 females, 30.VIII 2013.

Distribution. China: Sichuan, Zhejiang.

Family Phaneropteridae Burmeister, 1838

Subfamily Pseudophyllinae Burmeister, 1838

3.25. *Phyllomimus sinicus* Beier, 1954

Material. Sichuan (Xuyong): 1 male, 27.VIII 2013.

Distribution. China: Sichuan, Zhejiang, Shaanxi, Jiangxi, Hubei, Fujian, Taiwan, Guangdong, Guangxi, Chongqing, Guizhou.

Subfamily Mecopodinae Walker, 1871

3.26. *Mecopoda niponensis* De Haan, 1842

Material. Sichuan (Xuyong): 1 male, 23.VIII 2013; 1 male, 2 females, 26-27.VIII 2013.

Distribution. China (Sichuan, Zhejiang, Chongqing, Guangxi, Jiangxi, Hunan, Guizhou, Fujian, Anhui, Jiangsu, Shanghai, Shaanxi), Japan.

Subfamily Phaneropterinae Burmeister, 1838

3.27. *Sinochlora sinensis* Tinkham, 1945

Material. Sichuan (Xuyong): 1 male, 23.VIII 2013.

Distribution. China: Sichuan, Zhejiang, Henan, Anhui, Jiangxi, Hubei, Hunan, Fujian, Taiwan, Guangdong, Guangxi, Chongqing, Guizhou, Yunnan.

3.28. *Sinochlora szechwanensis* Tinkham, 1945

Material. Sichuan (Xuyong): 1 male, 1 female, 23.VIII 2013; 1 male, 30.VIII 2013.

Distribution. China : Sichuan, Zhejiang, Gansu, Shaanxi, Henan, Jiangsu, Anhui, Jiangxi, Hubei, Hunan, Fujian, Taiwan, Guangxi, Chongqing, Guizhou, Yunnan.

3.29. *Isopsera denticulata* Ebner, 1939

Material. Sichuan (Xuyong): 1 male, 1 female, 30.VIII 2013.

Distribution. China (Sichuan, Zhejiang, Gansu, Shaanxi, Anhui, Jiangxi, Hubei, Hunan, Fujian, Guangdong, Guangxi, Chongqing, Guizhou), Japan.

3.30. *Isopsera sulcata* Bey-Bienko, 1955

Material. Sichuan (Xuyong): 1 male, 1 female, 29-30.VIII 2013.

Distribution. China: Sichuan, Zhejiang, Anhui, Jiangxi, Hunan, Fujian, Hainan, Guangxi, Chongqing, Guizhou.

3.31. *Ruidocollaris convexipennis* (Caudell, 1935)

Material. Sichuan (Xuyong): 1 male, 27.VIII 2013.

Distribution. China: Sichuan, Zhejiang, Shaanxi, Anhui, Jiangxi, Hubei, Hunan, Fujian, Guangdong, Hainan, Guangxi,

Guizhou, Yunnan, Tibet.

3.32. *Ruidocollaris truncatolobata* (Brunner von Wattenwyl, 1878)

Material. Sichuan (Xuyong): 1 male, 2 females, 26-28.VIII 2013.

Distribution. China (Sichuan, Zhejiang, Gansu, Shaanxi, Henan, Anhui, Jiangxi, Hubei, Hunan, Fujian, Taiwan, Guangdong, Hainan, Guangxi, Chongqing, Guizhou), Japan.

3.33. *Ducetia japonica* (Thunberg, 1815)

Material. Sichuan (Xuyong): 1 male, 3 females, 26.VIII 2013; 3 females, 30.VIII 2013.

Distribution. China (Sichuan, Zhejiang, Hebei, Shanxi, Shaanxi, Henan Jiangsu, Shanghai, Anhui, Jiangxi, Hubei, Hunan, Fujian, Taiwan, Guangdong, Guangxi, Hainan, Chongqing, Guizhou, Yunnan, Tibet), Japan, Korea, India,

Cambodia, Philippines, Singapore, Indonesia, Sri Lanka, Australian.

3.34. *Phaneroptera falcata* (Poda, 1761)

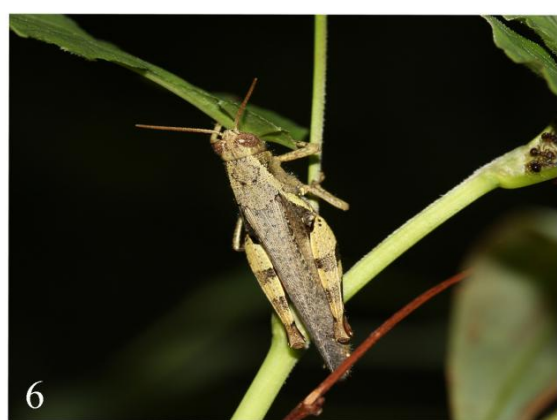
Material. Sichuan (Xuyong): 1 male, 23.VIII 2013; 1 female, 25.VIII 2013; 2 males, 2 females, 27.VIII 2013.

Distribution. China (Sichuan, Zhejiang, Heilong, Jilin, Inner Mongolia, Gansu, Sinkiang, Hebei, Beijing, Shaanxi, Henan, Jiangsu, Shanghai, Anhui, Hubei, Hunan, Fujian, Taiwan, Chongqing, Guizhou), Europe, Japan, Korea.

3.35. *Elimaea (Rhaebelimaea) cheni* Kang & Yang, 1992

Material. Sichuan (Xuyong): 2 females, 23.VIII 2013; 1 male, 27.VIII 2013.

Distribution. China: Sichuan, Hubei, Hunan, Chongqing, Guizhou, Shaanxi, Gansu.



Figs 1–6: 1. *Conanalus pieli*; 2. *Mecopoda niponensis*; 3. *Tettigonia chinensis*; 4. *Conocephalus (Anisoptera) melaenus*; 5. *Ceracris nigricornis nigricornis*; 6. *Xenocatantops brachycerus*.

Superfamily Acridoidea Macleay, 1821

Subfamily Pyrgomorphinae Brunner von Wattenwyl, 1882

3.36. *Atractomorpha sinensis* I. Bolívar, 1905

Material. Sichuan (Xuyong): 6 males, 6 females, 22-26.VIII 2013.

Distribution. China (Biejing, Hebei, Shanxi, Shanghai, Jiangsu, Zhejiang, Anhui, Fujian, Jiangxi, Shandong, Henan, Hubei, Hunan, Guangdong, Guangxi, Sichuan, Guizhou, Yunnan, Shaanxi, Gansu, Qinghai, Tanwan), Japan, Vietnam.

Subfamily Oxyinae Brunner von Wattenwyl, 1893

3.37. *Oxya agavis* Tsai, 1931

Material. Sichuan (Xuyong): 16 males, 23 females, 22-30.VIII 2013.

Distribution. China: Shanghai, Jiangsu, Zhejiang, Anhui, Fujian, Jiangxi, Hubei, Hunan, Guangdong, Guangxi, Guizhou, Yunnan.

3.38. *Oxya* sp.

Material. Sichuan (Xuyong): 2 males, 2 females, 22-25.VIII 2013.

Distribution. China: Sichuan.

Subfamily Melanoplinae Scudder, 1897

3.39. *Fruhstorferiola omei* (Rehn & Rehn, 1939)

Material. Sichuan (Xuyong): 2 females, 25-26.VIII 2013.

Distribution. China: Sichuan, Chongqing, Guizhou, Shaanxi, Gansu.

Subfamily Catantopinae Brunner von Wattenwyl, 1893

3.40. *Stenocatantops mistshenkoi* F. Willemse, 1968

Material. Sichuan (Xuyong): 6 males, 23-24.VIII 2013; 1 female, 30.VIII 2013.

Distribution. China: Shaanxi, Anhui, Zhejiang, Hubei, Jiangxi, Fujian, Guangdong, Guangxi, Sichuan, Taiwan.

3.41. *Xenocatantops brachycerus* (C. Willemse, 1932)

Material. Sichuan (Xuyong): 1 female, 22.VIII 2013; 1 male, 4 females, 26-27.VIII 2013; 2 males, 3 females, 29-30.VIII 2013.

Distribution. China (Gansu, Hebei, Shaanxi, Jiangsu, Zhejiang, Hubei, Hunan, Sichuan, Fujian, Taiwan, Guangdong, Guangxi, Guizhou, Yunnan, Tibet), East India, Nepal, Bhutan.

Subfamily Oedipodinae Walker, 1871

3.42. *Gastrimargus marmoratus* (Thunberg, 1815)

Material. Sichuan (Xuyong): 5 females, 25-26.VIII 2013.

Distribution. China (Fujian, Jiangsu, Sichuan, Chongqing, Hunan, Guangdong, Guangxi, Shandong, Hainan, Hong Kong), Korea, Japan, Burma, Vietnam, Thailand, Philippines, Malaysia, Indonesia.

3.43. *Trilophidia annulata* (Thunberg, 1815)

Material. Sichuan (Xuyong): 1 male, 3 females, 22.VIII 2013; 1 male, 2 females, 25-26.VIII 2013; 2 males, 30.VIII 2013.

Distribution. China (Heilongjiang, Jilin, Liaoning, Inner Mongolia, Ningxia, Gansu, Hebei, Shaanxi, Shandong, Jiangsu, Anhui, Zhejiang, Hubei, Hunan, Jiangxi, Fujian, Guangdong, Guangxi, Sichuan, Chongqing, Guizhou, Yunnan, Tibet), Korea, Japan, India.

3.44. *Ceracris nigricornis* Walker, 1870

Material. Sichuan (Xuyong): 5 males, 4 females, 22-23.VIII

2013; 5 males, 1 female, 25.VIII 2013; 4 males, 4 females, 27-29.VIII 2013.

Distribution. China: Yunnan, Sichuan, Shaanxi, Gansu, Henan, Hunan, Guangxi.

Subfamily Acridinae Macleay, 1821

3.45. *Phlaeoba angustidorsis* Bolívar, 1902

Material. Sichuan (Xuyong): 13 males, 7 females, 22-26.VIII 2013; 3 males, 4 females, 28-30.VIII 2013.

Distribution. China: Jiangsu, Zhejiang, Jiangxi, Fujian, Hunan, Sichuan, Guangdong, Guangxi.

3.46. *Acrida cinerea* (Thunberg, 1815)

Material. Sichuan (Xuyong): 3 males, 2 females, 22-24.VIII 2013.

Distribution. China: Beijing, Ningxia, Gansu, Shaanxi, Sichuan, Yunnan, Guizhou, Shanxi, Hebei, Shandong, Jiangsu, Anhui, Zhejiang, Fujian, Jiangxi, Hunan, Guangdong, Guangdong.

Superfamily Grylloidea Laicharting, 1781

Family Gryllidae Laicharting, 1781

Subfamily Cachoplistinae Saussure, 1877

3.47. *Meloimorpha japonica japonica* (De Haan, 1842)

Material. Sichuan (Xuyong): 14 males, 32 females, 25-26.VIII 2013.

Distribution. China (Sichuan, Beijing, Shandong, Jiangsu, Shanghai, Zhejiang, Hunan, Fujian, Taiwan, Hainan, Guangxi, Guizhou), Japan, India.

Subfamily Gryllinae Laicharting, 1781

3.48. *Goniogryllus octospinatus* Chen & Zheng, 1995

Material. Sichuan (Xuyong): 2 females, 25.VIII 2013.

Distribution. China: Sichuan.

3.49. *Loxobleus aomoriensis* Shiraki, 1930

Material. Sichuan (Xuyong): 1 male, 2 females, 25.VIII 2013.

Distribution. China (Sichuan, Shaanxi, Henan, Anhui, Zhejiang, Hunan, Hunan, Fujian, Hainan, Guangxi, Yunnan), Japan.

3.50. *Loxoblemmus equestris* Saussure, 1877

Material. Sichuan (Xuyong): 13 males, 30 females, 25.VIII 2013.

Distribution. China (Sichuan, Liaoning, Beijing, Shaanxi, Jiangsu, Anhui, Shanghai, Zhejiang, Jiangxi, Hunan, Hunan, Fujian, Hainan, Guangxi, Guizhou, Yunnan, Tibet), Japan, Korea, India, Burma, Sri Lanka, Malaysia, Indonesia.

3.51. *Loxoblemmus doenitzi* Stein, 1881

Material. Sichuan (Xuyong): 3 males, 6 females, 25.VIII 2013.

Distribution. China (Sichuan, Liaoning, Beijing, Hebei, Shanxi, Shaanxi, Henan, Shandong, Jiangsu, Anhui, Shanghai, Zhejiang, Jiangxi, Hunan, Guangdong, Guizhou), Japan, Korea, South Korea.

3.52. *Loxoblemmus detectus* (Serville, 1839)

Material. Sichuan (Xuyong): 9 males, 17 females, 26.VIII 2013.

Distribution. China (Sichuan, Beijing, Shaanxi, Jiangsu, Anhui, Zhejiang, Jiangxi, Fujian, Guangdong, Guizhou), Pakistan, Indonesia.

3.53. *Teleogryllus (Brachyteleogryllus) emma* (Ohmachi & Matsumura, 1951)

Material. Sichuan (Xuyong): 3 males, 9 females, 25-26.VIII 2013.

Distribution. China (Sichuan, Beijing, Hebei, Shanxi, Shaanxi, Shandong, Jiangsu, Anhui, Shanghai, Zhejiang, Hubei, Hunan, Fujian, Guangdong, Hong Kong, Haina, Guangxi, Guizhou, Yunnan), Korea, Japan.

3.54. *Teleogryllus (Brachyteleogryllus) occipitalis* (Serville, 1838)

Material. Sichuan (Xuyong): 4 males, 11 females, 25.VIII 2013.

Distribution. China (Sichuan, Shaanxi, Shandong, Zhejiang, Fujian, Jiangxi, Hubei, Hunan, Guangdong, Hainan, Guangxi, Guizhou, Yunnan), Japan, Burma, Vietnam, Thailand, Sri Lanka, Malaysia, Philippines, Indonesia.

3.55. *Velarifictorus (Velarifictorus) aspersus* (Walker, 1869)

Material. Sichuan (Xuyong): 2 males, 4 females, 22.VIII 2013.

Distribution. China (Sichuan, Hebei, Shaanxi, Henan, Jiangsu, Anhui, Zhejiang, Jiangxi, Fujian, Guangdong, Hainan, Guangxi, Guizhou, Yunnan), India, Pakistan, Thailand, Sri Lanka, Malaysia.

3.56. *Velarifictorus (Velarifictorus) micado* (Saussure, 1877)

Material. Sichuan (Xuyong): 3 males, 9 females, 26.VIII 2013.

Distribution. China (Sichuan, Beijing, Hebei, Shanxi, Shaanxi, Shandong, Jiangsu, Shanghai, Zhejiang, Jiangxi, Hunan, Fujian, Taiwan, Guangdong, Guangxi, Guizhou, Tibet), India, Sri Lanka, Indonesia.

Subfamily Nemobiinae Saussure, 1877**3.57. *Polionemobius taprobanensis* (Walker, 1869)**

Material. Sichuan (Xuyong): 3 males, 4 females, 22-23.VIII 2013.

Distribution. China (Sichuan, Heilongjiang, Jiling, Liaoning, Inner Mongolia, Beijing, Hebei, Henan, Shandong, Jiangsu, Shanghai, Zhejiang, Jiangxi, Hubei, Fujian, Hainan, Guangxi, Guizhou, Yunnan), India, Pakistan, Sri Lanka, Malaysia, Burma, Indonesia, Japan, Maldives, Bangladesh.

3.58. *Pteronemobius nitidus* (Bolivar, 1901)

Material. Sichuan (Xuyong): 2 females, 23.VIII 2013; 1 male, 3 females, 25.VIII 2013.

Distribution. China (Sichuan, Ningxia, Beijing, Hebei, Jiangsu, Zhejiang, Fujian, Shandong, Hunan, Guangdong, Guangxi, Yunnan), Japan, Russia.

Subfamily Oecanthinae Blanchard, 1845**3.59. *Oecanthus longicaudus* Matsumura, 1904**

Material. Sichuan (Xuyong): 1 male, 2 females, 22.VIII 2013; 2 males, 3 females, 25.VIII 2013; 2 males, 1 female, 30.VIII 2013.

Distribution. China (Sichuan, Heilongjiang, Jiling, Shanxi, Shaanxi, Zhejiang, Jiangxi, Hunan, Fujian, Guangxi, Guizhou, Yunnan), Korea, Japan, Russia.

Subfamily Podoscirtinae Saussure, 1878**3.60. *Truljalia hibinonis hibinonis* (Matsumura, 1919)**

Material. Sichuan (Xuyong): 2 males, 5 females, 25.VIII 2013.

Distribution. China (Sichuan, Zhejiang, Shanghai, Fujian, Jiangxi, Hunan, Guangxi, Yunnan), Japan.

3.61. *Valiatrella pulchra* (Gorochov, 1985)

Material. Sichuan (Xuyong): 1 female, 25.VIII 2013.

Distribution. China (Sichuan, Hunan, Guangxi, Guizhou), Vietnam.

Subfamily Sclerogryllinae Gorochov, 1985**3.62. *Sclerogryllus punctatus* (Brunner von Wattenwyl, 1893)**

Material. Sichuan (Xuyong): 1 female, 30.VIII 2013.

Distribution. China (Sichuan, Jiangsu, Anhui, Shanghai, Zhejiang, Taiwan, Hainan, Guangxi, Guizhou, Yunnan), Vietnam, Japan, India, Indonesia, Burma.

Subfamily Trigonidiinae Saussure, 1870**3.63. *Svistella bifasciata* (Shiraki, 1911)**

Material. Sichuan (Xuyong): 1 male, 1 female, 30.VIII 2013.

Distribution. China (Sichuan, Jiangsu, Anhui, Shanghai, Zhejiang, Jiangxi, Hunan, Taiwan, Hainan, Guizhou), Japan, Korea.

3.64. *Homoeoxipha nigripes* Xia & Liu, 1993

Material. Sichuan (Xuyong): 2 males, 4 females, 23.VIII 2013.

Distribution. China: Sichuan, Zhejiang, Hunan, Hainan, Guizhou, Yunnan.

3.65. *Homoeoxipha lycoides* (Walker, 1869)

Material. Sichuan (Xuyong): 2 males, 6 females, 23.VIII 2013.

Distribution. China: Sichuan, Anhui, Shanghai, Jiangxi, Fujian, Taiwan, Guangdong, Hainan, Yunnan, Tibet.

3.66. *Trigonidium humbertianum* (Saussure, 1878)

Material. Sichuan (Xuyong): 1 female, 23.VIII 2013.

Distribution. China (Sichuan, Fujian, Guangxi, Hainan, Yunnan), India, Sri Lanka, Maldives.

Family Gryllotalpidae Leach, 1815**Subfamily Gryllotalpinae Leach, 1815****3.67. *Gryllotalpa orientalis* Burmeister, 1839**

Material. Sichuan (Xuyong): 1 male, 2 females, 25.VIII 2013.

Distribution. China (Sichuan, Heilongjiang, Jiling, Liaoning, Inner Mongolia, Qinghai, Hebei, Beijing, Tianjing, Shandong, Jiangsu, Shanghai, Zhejiang, Jiangxi, Hubei, Hunan, Fujian, Guangdong, Hainan, Guangxi, Guizhou, Tibet, Yunnan), Russia, Japan, Korea, South Korea, Philippines, Indonesia, Nepal.

4. Discussion

According to the identification, the species of Tettigoniidae belongs to Sino-Japanese realm species^[1]. Most are recorded in Sichuan, which can reflect the fauna feature of Chengdu plain along with hills nearby. The species of genus *Gampsocleis* are mostly distributed in Palaearctic realm, however, the *Gampsocleis sinensis* (Walker, 1871) extended to Oriental realm and Sino-Japanese realm of China. And it was the newly recorded species of Sichuan. The male of this species is known for its songs which is loud and have a strong rhythm.

The abundance and diversity of family Conocephalinae (including 5 genera, 12 species) in the list, especially the genus *Conocephalus* (8 species), may indicate that there are many herbage covered in Huagaoxi Nature Reserve. In the same way, the large number of family Meconematinae (including 6 genera, 9 species), most of which are predaceous insect, indicates that there are many other kinds of little insect

distributed here. The tall trees are very few here, thus the Phaneropterinae who likes to inhabit in the tall trees are distributed little. The Grylloidea specimens listed above mostly belong to the Sino-Japanese realm species, and the minority are Sichuan-specific species.

This result reflects that the diversity of Orthoptera may still be considered rich despite the high level of human disturbance. Because this is the first insect survey conducted here, it also adds to the knowledge of Orthoptera in Huagaoxi Nature Reserve of Sichuan, China. As to katydid, the herbivorous species such as some Conocephalinae who like to eat grasses, while the others, like some species of Meconematinae, prefer to feed on some little insects, maybe some pests. In general, these insects can help to protect and maintain the balance of the ecosystem. Nowadays, there shows a dearth in the knowledge of Orthoptera, thus we should pay more attention to Orthoptera and the conservation of nature habitats.

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