

GRASSHOPPERS (ACRIDOIDEA) ASSOCIATED WITH XI QIAO MOUNTAIN IN CENTRAL GUANGDONG PROVINCE OF SOUTHEASTERN CHINA¹

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ABSTRACT: Notes are provided for 31 species of acridoid grasshoppers of the Pyrgomorphidae, Catantopidae, Oedipodidae, Arcypteridae and Acrididae from a mountain area near Nanhai city in the central Guangdong Province of mainland China.

Xi Qiao Hill or mountain is a forested resort area (2-3,000 feet elevation) near Nanhai City approximately 60 miles southeast of the city of Guangzhou in the central Guangdong Province of southeastern mainland China. The climate is wet tropical or sub-tropical, frosts are rare and rainfall averages around 2,000 mm annually. Average temperatures in July range from 28-30C and 13-16C in January. Overstory vegetation in the upper region of the mountain consists largely of secondary growth southern pine, *Pinus mansoniana*. Evidence is lacking for the subtropical broadleaf evergreens reported in nature reserves such as Dinghu Mountain near Zhaoqing City. *Cunninghamia* sp. of conifer was found at lower elevations along with *Eucalyptus* sp. and sweetgum, *Liquidambar formosana*. Bamboo was common along roadsides. Of the 31 species of Acridoidea reported herein, 16 species were collected by sweep net from grassy vegetation near roadsides between July 6-12, 1993. Three species of *Ceracris* inhabited bamboo groves. The others consist largely of museum records collected previously by the second author and deposited in the Zhongshan University Research Institute entomology collection (Guangzhou).

LIST OF SPECIES

ACRIDOIDEA

Pyrgomorphidae

Atractomorpha sinensis Bolivar, 11-17 June 1987, 6-12 July collected in beans from garden near the Nanhai Middle School. Wei Kai (1992) reports it feeding on willow and bamboo. It is widely distributed in China (Bei Bienko & Michchenko, 1963) and has also been reported

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from the colony of Hong Kong (C. Lau, unpubl. data).

Atractomorpha psittacina (deHaan) 17 May 1981.

Catantopidae

Tristria pisciformei (Serville) 17 May 1981, collected in grass. Found in tall grasses on hillsides or slopes of mountains. Adults develop by October and are believed to overwinter until June of the following year. This species is known from Victoria Peak on Hong Kong island at 1400 feet elevation and the species occurs on Hainan island as well as Kwangsi Province of China.

Spathosternum sinensis Uvarov, 29 July 1981. Tinkham (1940) found this species in short grass plains in damp areas with nymphs emerging in May and maturing in July. It is believed to occur throughout Guangdong Province as well as Kwangsi and Hainan Island.

Hieroglyphus tonkinensis Bolivar, 19 Sept 1984, 6-12 July 1993. Tinkham (1940) reported it as a pest of rice, sugar cane and bamboo. Egg pods, according to him, are bowl-shaped with their ends circularly rounded and the top sunken or concave.

Gesonula punctifrons (Stal.) 16 May 1981, 7 July 1993 has been called the Taro locust. We collected this species in a lowland field near a stream on *Colocassia esculenta* leaves. It is believed to inhabit dense shrubs on the edges of streams, and the adults have been observed from November through March in the Guangdong region. Hill (1982) illustrated this species in Hong Kong as a species of *Ceracris*. It is also recorded from the Hunan province of China (Wei Kai, 1992) as well as from Taiwan and the Ryuku islands of Japan.

Oxya chinensis (Thunberg) 10 June 1964, 5 July 1993. Hill (1982) in Hong Kong referred to this species as the small rice grasshopper as it is a pest of rice in many areas, including Hawaii, USA.

Oxya hyla intricata (Stal) 17 October 1981, 6 July 1993. Tinkham (1940) reported eggs of *O. intricata* hatching in late April through early May and adults developed by July. He reported egg pods as irregularly shaped and cemented to stones with a brown secretion. It is distributed from Japan and Taiwan through central China to India as well as Indonesia. Hollis (1971) reported it from Hong Kong.

Pseudoxya diminuta (Walker) 3-6 May, 1983, 5 July 1993 on beans and grasses near middle school. This species is sold for bird food in Hong Kong in Mongkok.

Chondracis rosea rosea (DeGeer) 26 Oct. 1992, 5 July 1993. Only immatures were observed during July at this site. Easton (1991) reported an adult feeding on elephant grass in Macau during August and Tinkham (1940) claimed that young nymphs emerge in early May with adults maturing after the first week in July. The female has one more instar than the male and eggs are believed to be laid in September or early October while adults are not able to overwinter. Hill and Cheung (1978) record it from Hong Kong.

Patanga succincta (Johannsen) 21 April 1982. This species is known as the Bombay locust in Hong Kong (Hill, 1982). Apparently it is widespread in southeast Asia including India and commonly sold as food for caged birds in the Mongkok bird market in Hong Kong colony.

Chloroedocus capensis (Thunberg) 24 Sept 1982, 6 July 1993. It has often been reported from dense grass and brush on hillsides. According to Tinkham (1940), nymphs occur in May with adults developing in July and eggs are laid in September in the Guangdong and Hainan provinces. Willemse (1957) also records it from India and Sri Lanka.

Stenocatantops splendens (Thunberg) 6 April 1981, 7 May 1983. Apparently widespread in southern China and India it is a common species sold in the Mongkok bird market of Hong Kong.

Xenocatantops brachycerus (Willemse) 28 May 1986, 6 July 1993.

Eucoptacra praemorsa (Stal) 5 July 1993 along roadside near the middle school. The type locality is listed as Hong Kong (Willemse, 1957). It is also reported from Taiwan and Burma.

Oedipodidae

Aiolopus tamulus (Fabricius) 14 June 1984. This species has recently been found to be widespread in Macau including the islands of Taipa and Coloane (unpubl. data). It has been recorded in Taiwan and Japan as well as the Guangdong region of China.

Heteropternis respondens (Walker) 20 Oct 1990. Occurs also in the Hong Kong colony (C. Lau, unpubl. data).

Heteropternis rufipes (Shiraki) 6 April 1981, 20 August 1987. It has been recently collected during September (1993) on the islands of Taipa and Coloane in Macau (unpubl. data).

Oedaleus abruptus (Thunberg) 4 April 1981.

Gastrimargus marmoratus (Thunberg) 6 April 1981, 5 July 1993. Found near secondary road on sparsely vegetated hillside. It is widespread in China (Ritchie 1982) and believed to occur as far north as Beijing; also found in Japan and South Korea and in Hong Kong it is sold as bird food (Hill and Cheung, 1978).

Pternoscirta sauteri (Karny) 6 June 1984.

Pternoscirta callignosa (deHaan) 27 May 1986. It is reported as feeding on *Agave* sp. in the colony of Hong Kong.

Trilophidea annulata (Thunberg) 11 Sept 1958, 5 July 1993. This was a common species found along roadsides on the ground in arid well drained areas. It also occurs in the Hong Kong colony (C. Lau, unpubl. data.) where it is sold as food in the Mongkok bird market.

Arcypteridae

Ceracris nigricornis laeta (I. Bol.) 8 April 1981, 6 July 1993. Hill (1982) in Hong Kong refers to this species as the Blackhorned grasshopper. It is found on bamboo and roadside grasses.

Ceracris kiangsu Tsai, 21 June 1981, 5-8 July 1993. Collected in bamboo thickets along road sides on a hill, it is a major pest of bamboo in the Guangdong province. One of us (LGQ) determined when investigating an outbreak during the spring of 1993 that eggs collected from the soil on March 26th hatched by the middle of April and adults had developed by June. Egg-laying occurs starting in July and lasts through November. Effective control of this pest involves treatment of the soil with pesticides during the period of nymphal emergence (Liang, 1992).

Ceracris fasciata (Brunner-Wattenwyl) 8 Oct 1958, 6 July 1993. It was collected from tall grasses. This species is reported as feeding on bam-

boo grass, *Miscanthus* sp. It has also been reported from Hainan island as well as Burma in southeast Asia.

Ceracris hoffmani Uvarov. 11 August, 16 Oct 1981, 7 July 1993, collected from tall grasses at foot of mountain near middle school.

Bidentacris quangdongensis Zheng, a synonym of *Dnopherula taeniatum* (Bolivar, 1902). This species has recently been collected from Coloane island in Macau during September (1993) (unpubl. data) from short grasses on a hillside.

Acrididae

Acrida cinerea Thunberg. 29 May, 17 July 1981, 5-6 July 1993. Common in grassy fields, this species was abundant near the breast of a dam near the top of the mountain.

Gelastorhinus chinensis Willemse. 26 July 1932, 7 July 1993. Collected in tall rank grasses on a lower mountain slope near the middle school.

Phlaeoba infumata Brunner-Wattenwyl. 7 July 1993. This species was found in tall rank grasses on the lower slopes near the middle school. Reported in the literature from rice fields and longer grasses along streams. Bei-Bienko and Michchenko (1963) record it from India and Burma as well as the Guangdong and Hainan provinces of China. It also occurs in Hong Kong (C. Lau, unpubl. data).

Phlaeoba antennata Brunner-Wattenwyl. 8 July 1986. This species is known to feed upon slender bamboo grass, *Miscanthus* sp. Willemse (1951) has reported it occurring in Singapore, Burma, Borneo and Sumatra in addition to Hong Kong and the Kwangsi and Hainan provinces of China.

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then aseptically sealing the severed end to a microscope coverslip to permit both continued development and visual observation of changes in tissues during pupal transformation.

Dr. Telfer's work has contributed to enhanced understanding of the unseen internal biochemical processes that most of us only view as a marvelous eclosion of a magnificent silk moth.

There were several entomological notes of interest, including a first hand account of the urticating properties of a slug caterpillar (Sue Frank), the recent southern movement of pierid butterflies (Joe Sheldon) and Dr. Curtis Sabrosky called our attention to a published account of an African treatment for cobra and viper bites, as well as bee and scorpion stings – the use of electrical shock, as with a cattle prod! Howard Boyd called our attention to an article in *Natural History* (Dec. 1992) showing a 17th Century artist's rendition of various South American caterpillars. On display during the meeting was a collection of insects in amber (Yale Goldman) and another of the Society's historical memorabilia provided by Mildred Morgan. On view were several old block plates used for the Society's logo, letterhead, and, most impressive, an original block plate used to print old certificates of membership. Surrounding the edges of the latter is intricate scroll work in which are embedded the names of some of the famous early members at the time of incorporation (1862, when no other entomological society was in existence): Say, Melsheimer, Haldeman, Leconte, Horn, Scudder, Harris, Fitch, Norton, Uhler, and Cresson.

The meeting at the Academy of Natural Sciences was attended by 23 members and eight guests.

Paul W. Schaefer,
Recording Secretary



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