

New record of a fastidious chrysomelid, *Ophraella communa* LeSage (Coleoptera: Chrysomelidae), in Taiwan

Chin-Ling Wang¹ and Mou-Yen Chiang²

1. Taiwan Agricultural Research Institute, Wufeng, Taichung, Taiwan, R.O.C.
2. Taiwan Agricultural Chemicals and Toxic Substances Research Institute, Wufeng, Taichung, Taiwan, R.O.C.

(Accepted for publication: January, 1998)

Wang, C. L., and Chiang, M., Y. 1998. New record of a fastidious chrysomelid, *Ophraella communa* LeSage (Coleoptera: Chrysomelidae), in Taiwan. Plant Prot. Bull. 40 : 185 - 188.

Key words: *Ambrosia artemisiifolia*, chrysomelid, *Ophraella communa*

In a field survey in October 1996, we noticed ragweed plants near Taichung harbor (臺中港) were heavily infested with small beetles. Early last summer (1997), the same beetle was collected on ambrosia at one site some 100 km north of Taichung. The beetle was identified as *Ophraella communa* LeSage (Order Coleoptera, Family Chrysomelidae, and Subfamily Galerucinae) in late summer from laboratories in Japan and Australia. A follow-up survey was conducted in November 1997 to investigate the distribution and significance of this new species for Taiwan. This chrysomelid had spread widely in ragweed infested areas in Taiwan at the time of our

investigation (Figs. 1, 2); In 17 of the 34 sampling sites, *O. communa* were positively identified on ragweed plants. The beetle was also found on ragweed in Quemoy (金門), an island off the coast of Fukien (福建) of mainland China.

Distribution, host plants and biological significance

O. communa is originated in Canada, USA, and Mexico, it is the most common species of this genus¹. This species was found in Tokyo Bay of Japan in 1996 and rapidly expanded into Kanto Plain in 1997 (Takizawa, personal communication, 1997). Occurrence

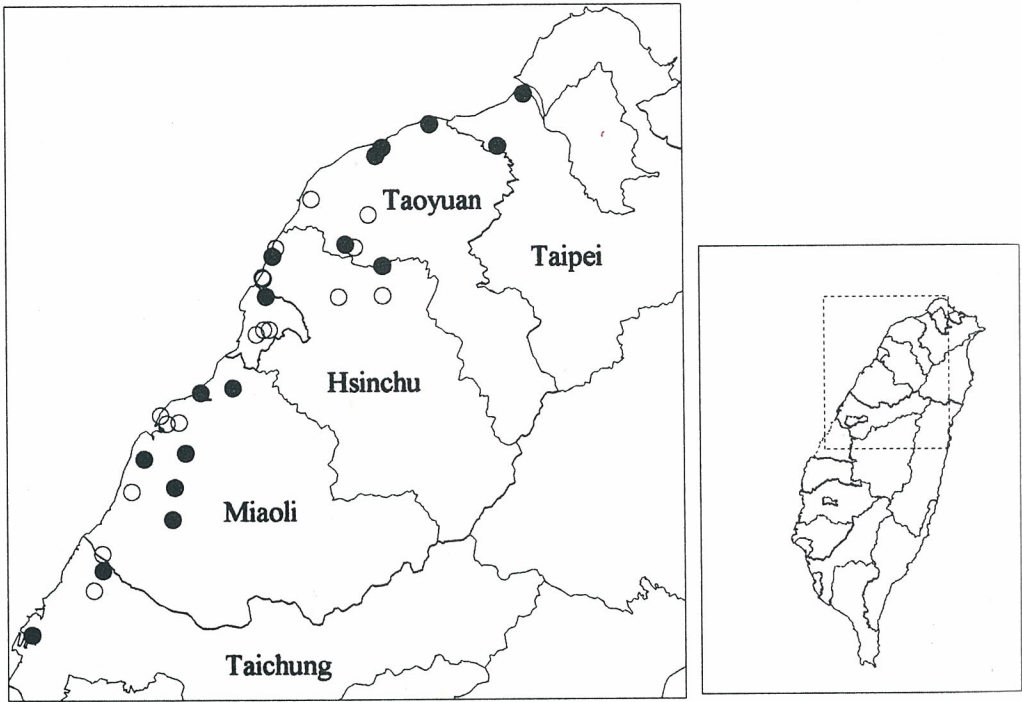


Fig. 1. Distribution of *Ophraella communa* in Taiwan in November 1997. Circles mark investigated sites with common ragweed (*Ambrosia artemisiifolia*); Solid circles indicate sites where *O. communa* were found.

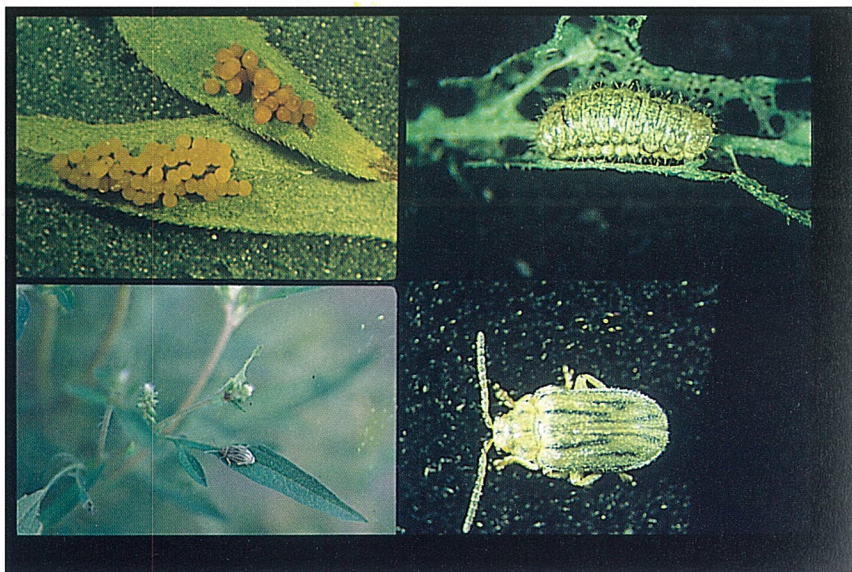


Fig. 2. *Ophraella communa* on common ragweed (upper left: eggs, upper right: larva, lower right: adult, lower left: adult on ragweed).

of this chrysomelid species outside north America, Japan and Taiwan is not known from published reports.

O. communa is fastidious in its choice of food; Host plants are limited to Asteraceae. It feed on *Ambrosia artemisiifolia* L. (豬草), *Xanthium strumarium* L. (蒼耳), *Parthenium hysterophorus* L. (銀膠菊), *Helianthus ciliaris* DC, *Helianthus annuus* L. (向日葵), *A. psilostachya* DC, *A. confertiflora* DC, *Iva axillaris* Pursh and *Ratibida pinnata* (Vent.) Barnh^(1,4).

Weedy host-plants of *O. communa* such as *A. artemisiifolia* L., *X. strumarium* L., *P. hysterophorus* L. are commonly found in east Asia⁽²⁾, this chrysomelid species has potential to further expand in this region.

Morphology and Life cycle

Adult 4-5 mm in length, elongate oval, male smaller than female. Head, pronotum and elytra with punctuate. Dorsal surface of body brown. Pronotum with 3 black shadings, middle one in form of a strip, lateral ones of short strips or round spots. Elytra with 4 black strips. Antenna filiform, apical half dark brown, segments 1-5 slightly yellowish at base. Legs yellowish.

Egg 0.5-0.7 mm in length; elliptical, rounded at bottom and sharper at top, surface irregularly reticulated. New egg golden yellowish, reddish brown near hatching. Mature larva 6- 7 mm in length, widest at abdominal segments 4-5. Each segment possess a transverse dorsal fold and several setae. Body yellowish, more or less uniformly pigmented with grayish brown and dark brown in each segment. Lateral sides with spiracles and irregular dark brown strips. Pupa 4-5 mm in length, early stage yellowish, later darkening.

Eggs were laid in group of 20-40 and primarily arranged in a single layer on leaf surface. Under 25-28 °C, eggs hatched in 3-7 days. Newly hatched larvae fed on tissue underneath leaf surface. Older larvae and adults sometime destroyed most leaf tissues except the main veins. Larval stage lasted for 10-13 days. Mature larvae spin sparse brownish cocoon and pupated inside, usually on lower leaf surface. Adults emerged about one week after pupation. Beetles stayed on leaves for feeding, mating and ovipositing. Single female laid several egg-masses during its life span. Adults lived for more than 20 days.

LITERATURE CITED

1. Futuyma, D. J. 1990. Observations on the taxonomy and natural history of *Ophraella* Wilcox, with a description of a new species. J. N. Y. Entomological Soc. 98: 163-186.
2. Holm, L., Pancho, J. V., Herberger, J. P., and Plucknett, D.L. 1979. A Geographical Atlas of World Weeds. John Wiley & Son. 391 pp.
3. LeSage, L. 1986. A taxonomic monograph of the nearctic Galerucine genus *Ophraella* Wilcox (Coleoptera: Chrysomelidae). Memoirs of the Entomological Society of Canada, No. 133. 75 pp.
4. Palmer, W. A., and Goeden, R. D. 1991. The host range of *Ophraella communa* Lesage. Bull. Coleopterists 45: 115-120.

ACKNOWLEDGEMENTS

We thank Dr. H. Takizawa, Japan Tobacco Inc., Japan and Dr. C. Reid, James Cook University of North Queensland, Australia for the identification of *O. communa*.

摘 要

王清玲¹ 蔣慕琰² 1998 台灣豬草金花蟲之新記錄 植保會刊 40:185-188.
(¹臺中縣霧峰鄉 臺灣省農業試驗所應用動物系；²臺中縣霧峰鄉 臺灣省農業藥物
毒物試驗所公害防治系)

1996年10月在台灣中部發現一種原產美洲之寡食性金花蟲, *Ophraella communa* LeSage; 1997年11月, 此蟲已普遍見於本島與金門之豬草分佈區。成蟲翅鞘灰褐色具黑色條紋, 卵黃色, 幼蟲體黃色具深色斑紋。在25-28 °C下卵期3-7日, 幼蟲期10-13日, 蛹期約1個, 成蟲可活20日以上。本種金花蟲以豬草及數種菊科植物為寄主。

(關鍵詞: 豬草、金花蟲、*Ophraella communa*)