入侵紅火蟻在台灣立足的可能性－火家蟻屬（膜翅目：蟻科）的動物地理學觀點

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【摘要】火家蟻屬(Solenopsis)全世界紀錄 204 種，台灣紀錄 4 種分別為 S. indagatrix, S. tipuna, S. geminata 及 S. invicta。本研究僅就蒐集到火家蟻屬 56 種分布在 24 個國家的火蟻之地理分布資料進行歸群分析。利用 GBIF 之 204 種火家蟻屬蟻種，蒐集相關地理分布資料，包括 AntWeb、Australian ants online、Japanese ant database group 等網路資料及 Thompson (1989)、Trager (1991) 相關文獻的地理分布資料，以國家為單位，進行火家蟻屬 56 種火蟻的全球地理分布相似性之歸群分析，可將 56 種分成 10 群。為了解本屬火蟻之自然分布特性，改以動物地理區為特徵，則將全數物種分成 9 個分布群。在 8 個動物地理區中新熱帶區(NEO)有 30 種，為分布群最多，地理分布共通性高，應該是火家蟻屬主要的自然分布範圍。其次為新北區(NEA)有 19 種，印澳區(INA)則沒有本屬之任何蟻種分布記錄。除了馬達加斯加區(MAL)及非洲區(AFR)外，其餘動物地理區內之蟻種特有種率(endemicity)均在 60%以上，舊北區(PAL)及亞澳區(AUS)更是高達 100%。新熱帶區及新北區有 5 種共通蟻種，印澳區及舊北區則沒有與其他地理區共通之蟻種。依據分群結果，S. geminata 及 S. invicta 的自然分布範圍均未有歸屬於東方區(ORI)的分布記錄，然而加入人為引進之分布記錄加以分析，就能進一步發現，S. invicta 分布之地理區與 S. geminata 相似性相當高，據此推測 S. invicta 除了近年十年來在澳洲及亞洲的入侵紀錄外，可能是繼 S. geminata 之後，最有潛力成為另一個全球廣泛分布種，因此也推測入侵紅火蟻在台灣長期立足的可能性極高。

【關鍵詞】火家蟻屬，動物地理學，分布資料，入侵紅火蟻，熱帶火蟻

前言

在全球入侵種資料庫內(http://www.invasivespecies.net)，入侵紅火蟻 Solenopsis invicta 名列在世界 100 大入侵種之一。在 1928 年美國及 2001 年澳洲相繼發現其入侵

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The Possibility of the Red Invasive Fire Ants Establishing in Taiwan — A View Point from Zoogeography of the Genus Solenopsis (Hymenoptera: Formicidae)

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Abstract

There are 204 species of the genus Solenopsis in the world. Data mining from several data base including GBIF, AntWeb, Australian ants online, Japanese ant database group, and some references such as Thompson (1989) and Trager (1991). In Taiwan, there are 4 species were recorded at present, i. e., S. indagatrix, S. tipuna, S. geminata, and S. invicta. By the article review, we had only 56 species’ data, and they distributed over 24 countries. According to the Bolton’s hypothesis of zoogeographical region for ant fauna, the global can be subdivided into eight regions, including Palaearctic (PAL), Nearctic (NEA), Neotropical (NEO), Afrotropical (AFO), Malagasy (MAL), Oriental (ORI), Indo-Australian (INA), and Australasian (AUS) region. The regions of NEA and NEO (new world) have more species than the others. There were 29 species distributed in NEO and 19 in NEA. We used “country by name” as character to analyze the similarity among these species by the package NTSYSpc2.1. All of 56 species were clustered as 10 groups by the similarity of the distribution data. On the other hand, we changed the character to use “zoogeographical region” to analyze these 56 species, then 9 groups were clustered. According to the similarity of distribution, S. invicta and S. geminata are not in the Oriental group and should have been introduced into Taiwan. Even the S. invicta may follow the dispersal model of S. geminata and become the worldwide type.

Key words: Solenopsis, biogeographic regions, distribution data mining, Solenopsis invicta, Solenopsis geminata

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