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A new species of Lyctocoridae (Hemiptera: Heteroptera: Cimicoidea) feeding on the exuded sap of Sawtooth Oak, *Quercus acutissima*, in Japan

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Abstract

A new species of the family Lyctocoridae, *Lyctocoris ichikawai* Yamada & Yasunaga **sp. nov.**, is described from Shikoku and Kyushu, southwestern Japan. The species was found to inhabit near the sap-exuding parts on the trunk of Sawtooth Oak, *Quercus acutissima* Carruth. (Fagaceae). *Lyctocoris ichikawai* is considered to be most closely related to *L. zhangi* Bu & Zheng, 2001 from continental China and *L. variegatus* Péricart, 1969 from the Caucasus. The unique biology of the new species, including its habitat use, feeding activities, and phenology, is documented and discussed. A key is provided to distinguish among the three Japanese species of *Lyctocoris*.

Keywords: *Lyctocoris*, taxonomy, biology, sap feeding, habitat, new species

Introduction

Lyctocoris Hahn, 1835, the type genus of the family Lyctocoridae, comprises 27 species distributed mainly in the northern hemisphere, and is speciose particularly in the Palearctic Region (Chu 1969; Kelton 1978; Schuh & Slater 1995; Lattin 2000). Species of *Lyctocoris* are predominantly predaceous, preying on various small insects and tiny arthropods living in decaying plant materials and under the bark of rotten trees (Kelton 1967; Lattin 2000). *Lyctocoris elongatus* (Reuter, 1871) was reported to have fed on bark beetles such as Scolytidae living under the bark of pine trees (e.g., Moore 1972; Schmitt & Goyer 1983). A cosmopolitan species, *Lyctocoris campestris* (F., 1794) is known to control pests in stored food facilities (Lattin 2000), and also known to inhabit the nests of birds and burrows of small rodents (Štys & Daniel 1957). An East Asian species, *L. beneficus* (Hiura, 1957), is an effective natural enemy of rice stem borer *Chilo suppressalis* (Walker, 1863) (Lepidoptera: Pyralidae) in Japan (Hiura 1957; Chu 1969). On the other hand, *L. campestris* has sometimes been confirmed to feed on the blood of humans and domestic animals (Woodward 1951). Without exception, the members of this genus have hitherto been regarded to be zoophagous.

During an ongoing continuing investigation of the insect fauna associated with the exuded sap of *Quercus acutissima* Carruth. (Fagaceae) in the Kagawa Prefecture, Shikoku, the third author, T. Ichikawa, found that an unidentified minute pirate bug inhabited the sap-exuding regions and was apparently utilizing the sap as food. Our careful examinations revealed that this bug is morphologically different from any other species of *Lyctocoris*, and, so far as known, this feeding activity is unique within the Lyctocoridae and related families. In this paper, we describe *L. ichikawai* Yamada & Yasunaga as a new species, and document and discuss the biology of this species based on the continuing field observations.

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