森林科學硏究 第22號 : 66~70, 2006
J. For. Sci., Kangwon Nat'l Univ., No. 22 : 66~70, 2006

큰쌀도적(Coleoptera : Trogossitidae) 성충과 유충의 형태적 특징

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Morphology on Adult and Larva of *Trogossita japonica* (Coleoptera : Trogossitidae)

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요 약

큰쌀도적(Coleoptera : Trogossitidae) 성충과 유충의 형태적 특징을 관찰하고, 분포와 생물학적 특징을 기술하였다.

ABSTRACT

The morphological features on adult and larva of *Trogossita japonica* Ritter were observed. The distribution data and biology note were provided.

Key words : Morphology, Coleoptera, Trogossitidae, Adult, Larva

Ⅰ. Introduction

The carnivorous beetle *Trogossita japonica* Ritter is a general predator on wood-boring insects on coniferous trees. Both adult and immature stage of *T. japonica* are predacious and actively search their prey in the wood. It is known as one of the most important predators of the pine sawyer *Monochamus alternatus* Hope(Coleoptera : Cerambycidae), a major and destructive forest insect pest on Japanese red pine (*Pinus densiflora* Siebold & Zuccarini). The beetle is distributed widely and also reported from the Maritime Province of Siberia (Mamaev 1971).

Ⅱ. Material and Methods

T. japonica adults were collected in a pine forest using a bait loges and dead trees on Hongcheon gun and Chuncheon city during April in 2005 to September in 2006.

For the morphological study, specimens

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were observed and illustrated using the Nikon SMZ-2T stero microscope.

The information of specimen such as sex, collecting site, collecting date and collector were recorded.

The body length was measured from the anterior margin of pronotum to the end of elytra (head length was excluded in the body length, the measuring point of apex is indistinct because of drooping the head). Body width was measured at the widest part of elytra.

Ⅲ. Result

Trogossita japonica Ritter (큰쌀도적)

Adults. (Fig. 1, A., Fig. 2)

The adults are a brilliant black, flattened and elongate, their length ranging from 15 to 20mm. Body length/maximum body width 1.25 - 7.65. Elytral length/pronotal length 1.75 - 4.58. Base of prothorax scarcely narrower than the combined elytral bases. Greatest prothoracic width not narrower than the greatest elytral width. Upper surfaces of body glabrous; exhibiting stiff, erect, dark bristles.

Inclination of the head slight. Eyes strongly protuberant. Antennae are long, 11 segmented filiform, comprising two basal segments (scape and pedicel) and nine segmented flagellum, of which the distal three segments are enlarged to form a club. The number of segments of the antenna of adult mail and female is same. The scape is the largest antennal segment and is followed by the pedicel. The bean-shaped scape articulates with the antennal socket anterior and ventral to the compound eye. The pedicel is small and is attached distally to the first flagellomere. It is somewhat broader on the distal end and narrower toward the scape.

Pronotal length/maximum pronotal width 0.3 - 1.52. Prothorax at its widest markedly narrower than the adjoining part of the abdomen to not markedly narrower than the adjoining part of the abdomen; having the front corners produced, or with serrated sides. The tarsi without bilobed segments; with a tiny basal segment that is hard to detect. The tarsi 4-segmented. Tarsal claws simple. Elytral length/maximum width across the elytra 0.82 - 3.3. Elytra meeting along the length of the mid-line; covering most of the abdomen; exposing no more than part of the terminal tergite, or at least three complete abdominal tergites; truncate. Scutellary striole absent. Wings well developed.

Larva (Fig. 1, B)

The larvae are from 25 to 30mm long at maturity. They are grayish white, with the head black and flattened. The dorsal surface of each of the first two thoracic segments is covered by a pair of black sclerotized plates, which are contiguous along the mid-line. In the third thoracic segment the dorsal sclerotized plates are smaller and separated from each other. The last abdominal segment is armed dorsally with a black, hardened hooklike process. There are three pairs of well-developed legs.

Distribution

: Korea, Japan, China, Russia

Material examined

: 5♂, 2♀, Bugbang, Hongchun gun, 10. v. 2005.
9♂, 5♀, Dongmyeon, Chuncheon city, 27. iv. 2006.

Ⅳ. Biology note

Female adults ovipositing under the inner bark of cut or broken twig stumps of pine bolts, and prefers to oviposit in bolts containing larvae of *Monochamus aiternatus* (Ueda et al. 1997) from Jun to September, full grown larvae overwinter and both pupation and emergence occur in next spring. *T. japonica* prey upon both larvae and pupae of *Monochamus* sp. within the larval tunnels and pupal chambers constructed by the wood borer. Larvae are often found in pine forest, weakened by infestation of the pine wood nematode, *Bursaphelenchus xylophilus* (Steiner and Buhrer) (Nobuchi, 1980). Adult of *T. japonica* also prey upon *Monochamus* sp. adult(Ogura, N. and Hosoda, R. 1995)

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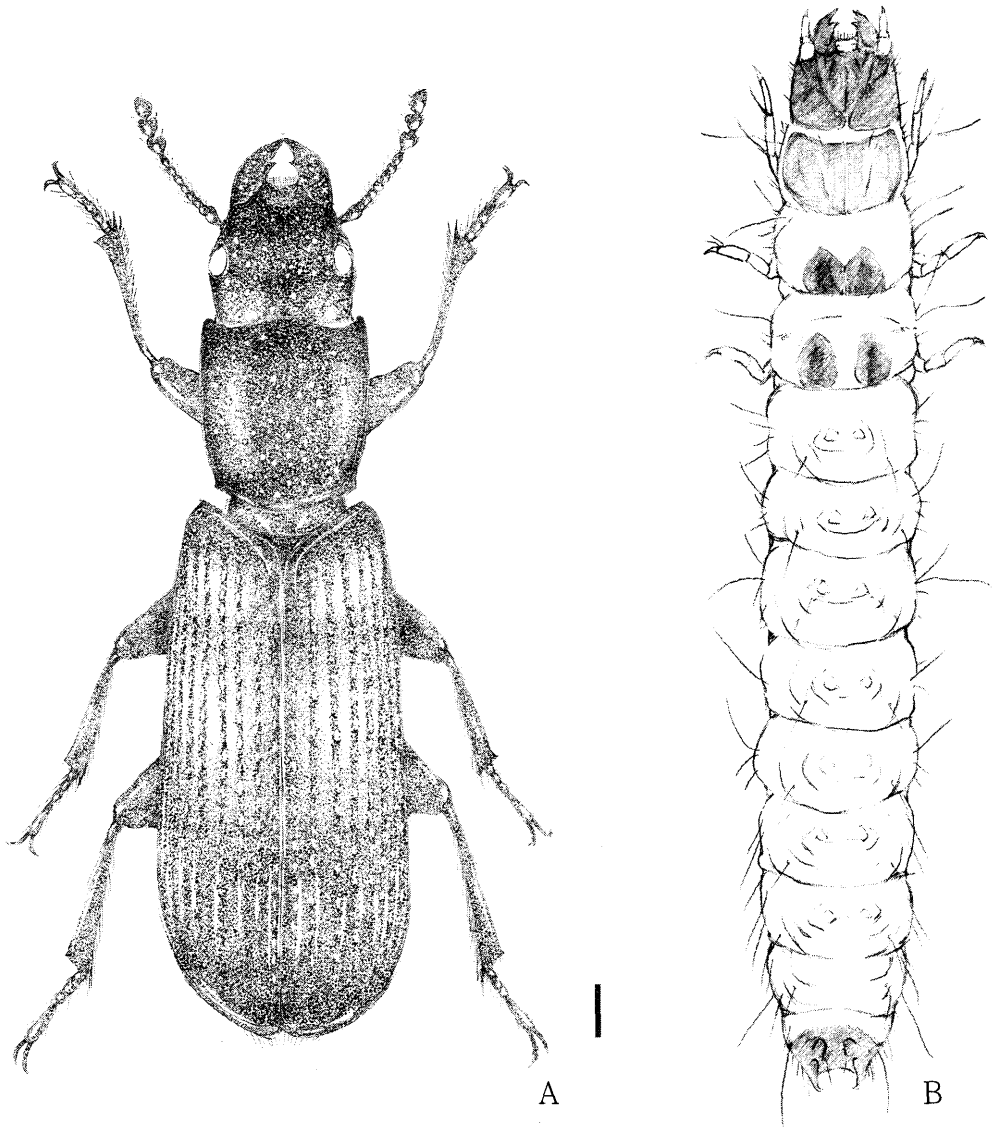

Fig. 1. *Trogossita japonica* Ritter (scale : 1mm)

A: Adult, B: Larva.

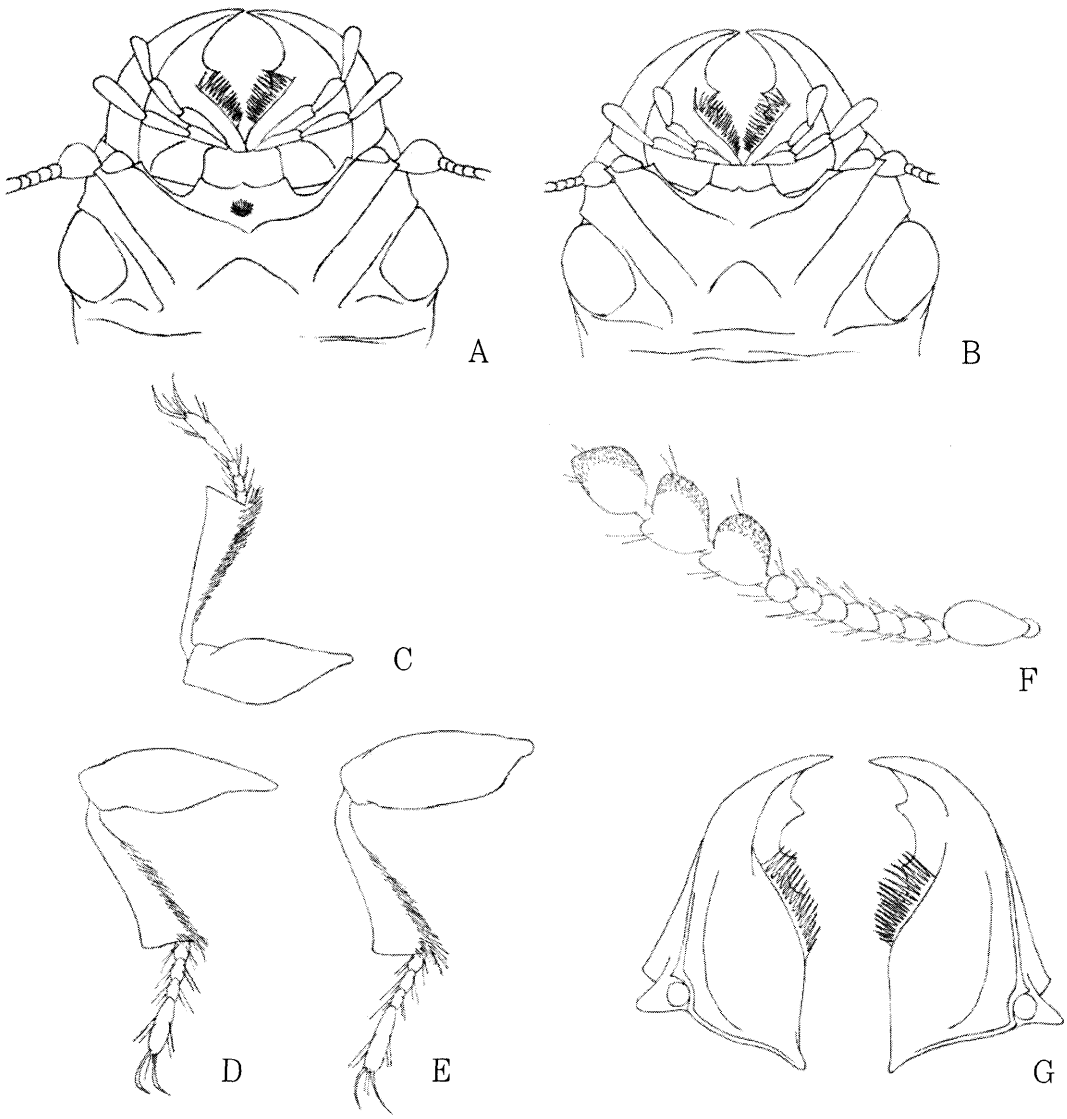

Fig. 2. *Trogossita japonica* Ritter

A: Submentum of male, B: Submentum of female, C: Fore leg, D: Mid leg, E: Hind leg, F: Antenna, G: Mandible.