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DESCRIPTIONS OF THE LARVAE OF HORNTAILS*

Teiichi OKUTANI

The horntails, belonging to the family Siricidae, are important group of bores that attack recently killed trees or fresh logs. Little detailed information is known concerning their larvae, although 12 species in 5 genera occur in Japan. A part of the characters of the larvae has been reported at the 72th meeting of the Japanese Forestry Society. After the meeting Mr. Y. Kato kindly gave me another materials.

The present paper deals with the descriptions of the larvae belonging to 5 species of 4 genera, one of which is a introduced species. The terms used in this paper are mainly associated with H. Yuasa (1292) who described a pigeon tremex.

Before going further, I wish to express my heartiest thanks to Prof. K. Yasumatsu, Kyushu University, Prof. K. Kojima, Kochi University, Mr. Y. Kato, Government Forest Experiment Station, and Mr. T. Nakamura, Hiroshima Branch of Plant Protection Station, for their putting the materials under my study.

I. General characters of the family Siricidae.

Rather large, about 25 mm, but individual variation very wide. Head and body uniformly creamy white or pale yellow; head sometimes with pale brown markings or patterns; mandibles and pre-coila brown or dark brown; tenth abdominal segment partly pale brown, but suranal process dark brown.

Head semiglobose, circular in profile, about half as high as thorax; mouth directed ventrad, mostly exposed; vertex very slightly and irregularly reticulate, and setigerous with minute setae. Vertical furrows indistinct. Antennae single-segmented, conical in outline; antacoria partly chitinized, and with several setae. Ocellarea; wanting; depression mesad of antacoria which is sometimes

called the "eye" is a pretentoria. Epicranial suture and arms partly visible or wanting. Frons with many minute setae. Clypeus trapezoidal and usually with 2 or 3 setae on each side. Labrum asymmetrical and with about 5 setae on each side. Mandibles asymmetric, without setae, usually with 4 or 5 dentes, caudal one of which is rather broad; mandibularia distinct. Maxillae modified; palpi 2-segmented, basal segment with few trichoid sensillae on apico-proximal part; palpifer, stipes and cardo fused and border indistinct; palpifer and stipes with several setae; galea small, conical, arising from broad shoulder which bears several setae on lateral side; lacinia round, lobe-like, with about 15 setae on apical part. Labium compact; postmentum narrow, transverse, membranous, with few setae on each side; prementum convex, lobe-like, deeply emarginate on cephalic margin, and setigerous; palpifer scarcely defined and with about 10 setae; palpi small, 2-segmented, apical segment conical, much smaller than basal, and without setae; grossa with many setae around crescentic sericos.

Body cylindrical, uniform in diameter throughout, fleshy, and plump; cuticle microscopically spinulate, and partly granulate on caudal segment; venter with microscopically minute setae; dorsum without setae except caudal segment. Annulation indistinct on dorsum, apparently with but one annulet; venter with 2 annulets, and 2nd annulet much larger than 1st. Cervical sclerites wanting. Prothorax largest of all segments; meso- and metathorax about a half length of typical abdominal segment. Lateral lobe distinct, extending the entire length of the segment, but not prominent. Thoracic legs mamma-like, setigerous or tipped with minute setae on cephalic part; born on fleshy conical pedal lobe, sometimes with false annulation. Metaspiracle as large as abdominal ones. Ninth abdominal segment a little shorter than the 8th. Tenth abdominal segment semiglobose in profile, setigerous on both dorsum and venter; suranal appendage wanting; suranal lobe

* Studies on Symphyta XV

broadened laterally and on meson with dark colored; tergum distinctly depressed by a median furrow, and with strongly chitinized suranal process which usually bears a dentiformed tubercle at middle.

Internal feeders, bore in trunks of coniferous or broad-leaved trees.

II. Key to subfamilies and genera.

1. Epicranial suture and arms wanting; bores in broad-leaved trees.....(TREMECINAE) *Tremex*
 — Epicranial arms visible or partly visible; bores in coniferous trees(SIRICINAE)...2
2. Antenna with a false annulet, apparently 2-segmented; epicranial suture visible near frons, and arms almost distinct.....*Sirex*
 — Antenna distinctly single-segmented3
3. Epicranial arms almost distinct, but dorsally indistinct*Xeris*
 — Epicranial arms distinct only on ventral part *Urocerus*

III. Generic and specific characters.

Genus *Urocerus* Geoffroy

Epicranial arms distinct only on ventral part. Antennae distinctly single-segmented; antacoria with 5 or 6 setae. Maxillary palpifer with 6 rarely 7 setae; stipes with a setae; shoulder of galea with 8 or more setae.

There occur 3 species in Japan, but only a single species is known in larval stage.

***Urocerus japonicus* (Smith, 1874)**

Length: 20-23 mm.

Head and body uniformly creamy white; head without markings; precoila and mandibles dark brown; dorsal part of caudal segment with pale brown median depression, and a transvers marking near the base of suranal process; suranal lobe yellowish and suranal process dark brown.

Epicranial suture indistinct, but arms distinct on ventral parts. Antennae about 3/4 as wide as long and with sensory pores near the tip; antacoria with 5 or 6 minute setae. Labrum transverse, nearly asymmetric, longer than clypeus (ca. 13:11). Basal maxillary palpal segment about a half length of apical segment and with 3 trichoid sensillae; palpifer with 6 setae; shoulder of galea

with about 8 setae; lacinia with about 16 setae. Labial palpal segments subequal in length; prementum including palpiger with about 10 setae on each side; postmentum with 2 setae on each side. Relative lengths of spiracles of prothorax, metathorax and 1st abdominal segment about 16:9:9. Thoracic legs indistinctly 3-segmented, and with sparsely with minute setae on outer parts. Dorsal part of caudal abdominal segment microscopically granulate, and setigerous with minute setae; ventral part setigerous, especially median part dense. Suranal process about twice as long as its basal width; base with 2 tubercles on both dorsal and ventral aspects; dorsal side with 2 dentiformed tubercles at middle.

Food-plants: *Pinus densiflora* Sieb. et Zucc., *Cryptomeria japonica* D. Don, *Chamaecyparis obtusa* Sieb. et Zucc.

The specimens were collected by K. Kojima at Kochi City from the last hostplant on July 3, 1956.

Genus *Sirex* Linné

Frons with about 30 setae. Epicranial suture slightly defined near frons; its arms almost distinct. Antennae with a false annulet and apparently 2-segmented; antacoria with about 5 setae. Sinistral mandible with 5 dentes and dextral with 4. Maxillary palpal segments subequal in length; palifer with 7 setae; stipes with 3 setae; shoulder of galea with 7 setae; lacinia with 15-20 setae. Labial palpiger with about 10 setae. Legs setigerous with minute and dick setae. Base of suranal process with 2 tubercles on dorsum.

Ventral part of head capsule pale brown, especially precoila dark brown; caudal abdominal segment without dark markings except suranal process.

Key to species

1. Antacoria with less than 5 setae; maxillary lacinia with about 15 setae; tubercles on base of suranal process large, distinctly wider than the mid-width of the process.....*S. noctilio* Fab.
- Antacoria with about 7 setae; maxillary lacinia with about 20 setae; tubercles on base of suranal process small, distinctly narrower than the mid-width of the process.....*S. nitobei* Mats.

***Sirex noctilio* (Fabricius, 1793)**

Length: 25 mm.

Antacoria with 5 setae. Maxillary stipes with

3 setae, one of which on proximal side and others on outer side; lacinia with about 15 setae on apical part. Labial palpiger with 10 setae. Tubercles on base of suranal process large, distinctly wider than the mid-width of the process.

The specimens were taken by T. Nakamura at Hiroshima from the bark of *Pinus radiata* D. Don which was imported from New Zealand.

Sirex nitobei Matsumura, 1912

Length: 23 mm.

Antacoria with 7 setae. Maxillary stipes with 3 setae, one of which long and on outer side, and others short and on proximal side; lacinia with about 20 setae on apical portion. Tubercles on base of suranal process small, distinctly narrower than the mid-width of the process.

Host-plants: *Pinus densiflora* Sieb. et Zucc., *P. thunbergii* Parl., and *Larix leptolepis* Gordon.

The specimens were taken by Y. Kato at Meguro in Tokyo from the bark of the first plant on July 27, 1950.

Genus *Xeris* A. Costa

Epicranial arms almost distinct, but dorsally visible with difficulty. Antennae distinctly single-segmented; antacoria with about 4 setae. Sinistral mandible with 5 dentes and dextral with 4. Maxillary palpifer with 6 setae; stipes with about 10 setae; cardo with 2 minute setae; shoulder of galea with less than 8 setae. Thoracic legs with 2 false annulets, and sparsely setigerous with minute setae on outer side. Lateral part of suranal lobe brownish.

A single species *Xeris specturum* (Linné) is recorded from Japan.

Xeris spectrum Linné, 1758

Length: 15 mm (may be younger instar).

Epicranial suture wanting, but arms almost distinct. Antennae prominent, longer than wide (ca 4:3), and with sensory pores near the tip; antacoria with 4 setae. Labrum about as long as clypeus. Maxillary palpal segments subequal in length; palpifer with 6 setae; shoulder of galea with 8 setae; lacinia with 6-8 setae; stipes with 10 setae; cardo with 2 minute setae. Labial palpal segments subequal in length; prementum including palpiger with 5 setae on each side. Relative length of spiracles on prothorax, metathorax and first abdominal segment about 20:9:8. Dorsal part of caudal abdominal segment sparsely setigerous with

minute setae; ventral part only on cephalic part setigerous; area around suranal process with about 15 setae. Suranal process about twice as long as its basal width; dorsal part of the process with a bifid dentiformed tubercle near the middle; base of the process without tubercles.

Host-plants: *Chamaecyparis obtusa* Sieb. et Zucc. *Abies firma* Sieb. et Zucc., and *Picea Glehni* Masters.

The specimens were collected by Y. Kato at Kazusa-cho in Chiba Pref. on June 16, 1962 from the bark of the first plant.

Genus *Tremex* Jurine

Epicranial suture and arms completely absent. Antennae single-segmented; antacoria with about 10 setae. Labrum distinctly asymmetric, and shorter than clypeus. Maxillary palpal segments subequal in length; palpifer with 8 setae; stipes with a seta; shoulder of galea with about 10 setae. Caudal abdominal tergum with a minute conical tubercle near the tip on each side.

There have been described 3 species in Japan, but a single species is available to this study.

Tremex longicollis Konow, 1896

Length: 12.5 mm (may be younger instar). Head width 2.2 mm, Thorax width 3.0 mm.

Head and body uniformly yellowish with a pale brown marking on margin of frons, and markings surrounding antacoria and pretentoria; mandibles basally brown with white marking, and apically dark brown; dorsal part of caudal abdominal segment with yellowish median depression, and a crescent-shaped brown marking near the tip; suranal process dark brown.

Head on vertex scaecely reticulate. Epicranial suture and arms absent. Antennae about 4/7 as wide as long, and with sensory pores near the tip; antacoria each with about 10 setae. Labrum distinctly shorter than clypeus (ca. 4:5). Maxillary palpal segments about same length, basal segment with 3 trichoid sensillae; palpifer with about 8 setae; stipes with a seta; shoulder of galea with about 10 setae; lacinia with about 16 setae. Basal labial palpal segment longer than apical (ca. 4:3); prementum including palpiger with about 12 setae on each side; postmentum with 2 setae on each side. Thoracic legs without annulet, and sparsely setigerous on cephalic side. Dorsal part of caudal abdominal segment microscopically granulate, setigerous with minute setae, and with a conical tubercle near the caudal end of tergum on

both sides of depression; ventral part setigerous. Suranal process less than twice length of basal width; base of the process with a pair of tubercles on both dorsal and ventral aspects; dorsal side of the process with a bifid dentiform tubercle at middle.

Host-plant: *Celtis sinensis* Pers. var. *japonica* Nakai.

The specimens were collected by K. Yasumatsu at Mt. Hikosan in Fukuoka Pref. from the host-plant.

Literature

Benson, R. 1943, *Bull. ent. Res.* 34: 27-51.
 Kojima, K. Watanabe, H. and Nakamura, S. 1962. *Misc. rep. Hiwa Mus. nat. hist.* 5: 8-15.
 Maa, T. 1949. *Notes ent. chin.* 13(2): 1-189.
 Okutani, T. 1959. *Illust. Insect Larvae of Jap.* 554.
 Takeuchi, K. 1938. *Tenthredo* 2: 187-195.
 ———. 1955. *Akitu* 4: 1-9.
 ———. 1962. *Insecta Japonica* Ser. 2, part 4, 1-12.
 Yuasa, H. 1922. *Ill. Biol. Monog.* 7: 1-172.

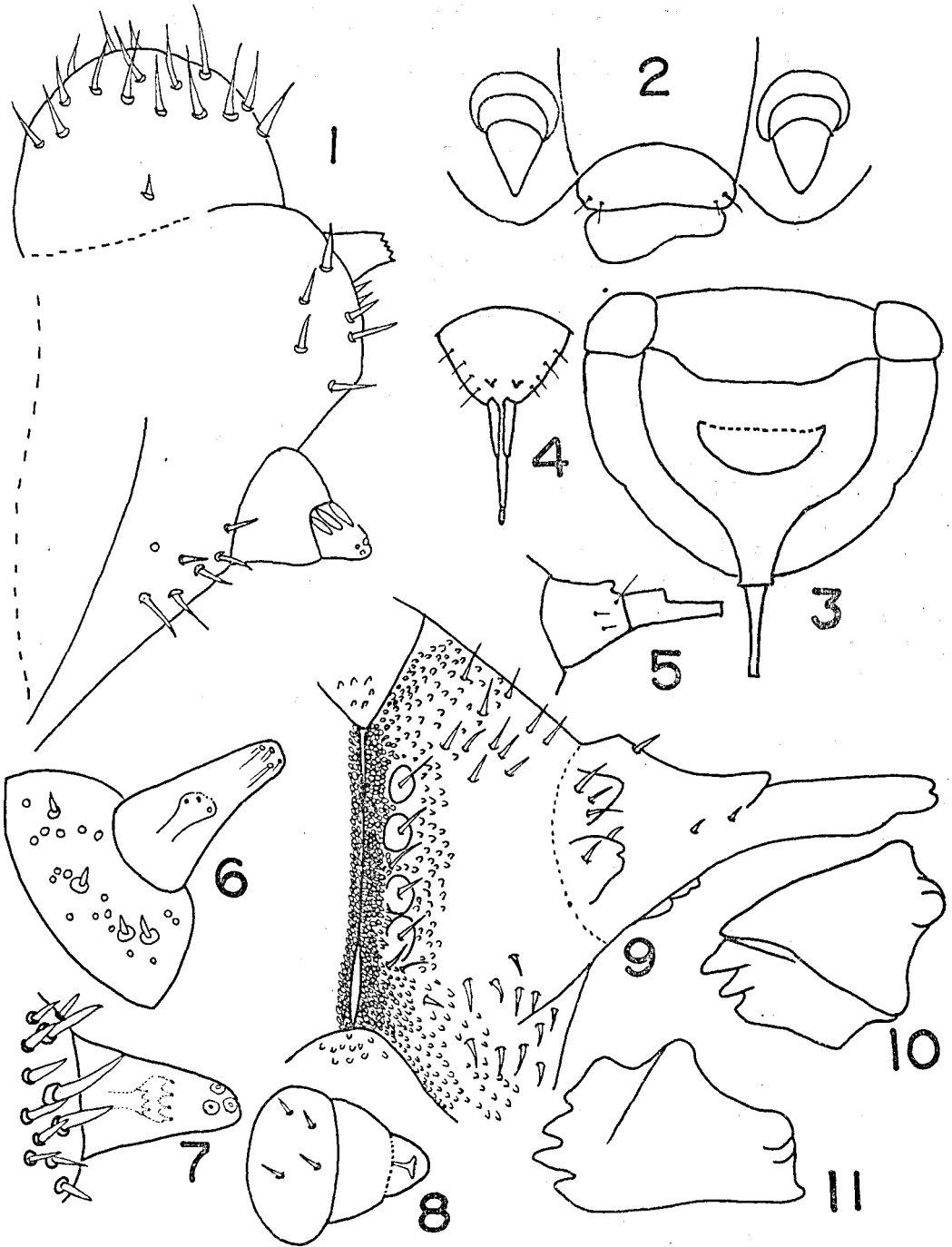
摘 要

キバチ幼虫の記載

奥谷 禎 一

キバチはその幼虫が木材に穿孔するので、森林害虫としては、主要害虫の一部をしめている。成虫についての業績は数多くあるが、その幼虫については殆どない。筆者は、色々の方の協力により4属5種の幼虫を入手できたので、ここに記載するものである。本報告で扱った属あるいは種について検索表を示す。

1. 頭蓋線及びその翼線を欠く；広葉樹に穿孔する。
 (ヒラアシキバチ亜科) ……………
 ……………ヒラアシキバチ属 (ヒラアシキバチ)
 一 頭蓋線及びその翼線は僅かに発達する；針葉樹に穿孔する。(キバチ亜科)……………2
2. 触角は明らかに1節で、頭蓋線を欠くが、その翼線は見られる。……………3
 一 触角は偽節を生じ、2節に見え、頭蓋線は額近くのみ認められる。……………ルリキバチ属
 A. 触角基は約5本の剛毛を生じ、小あご内葉には約15本の剛毛を生じる。尾端突起基部のこぶは大きく、その巾は突起中央の巾より広い。ノクチリオキバチ
 一 触角基は約7本の剛毛を生じ、小あご内葉には約20本の剛毛を生じる。尾端突起基部のこぶは小さく、その巾は突起中央の巾より狭い。……ニトベキバチ
3. 頭蓋翼線は全体に認められる。尾端突起基部にこぶがない。……………オナガキバチ属 (オナガキバチ)
 一 頭蓋翼線は額下方のみ発達する。尾端突起基部にこぶを生じる。……………キバチ属 (ニホンキバチ)



Explanation of figs. 1. Maxillae of *Urocerus japonicus*, 2. Ventral part of head of *Xeris spectrum*, 3. Caudal abdominal segment of *Sirex nitobei*, ventral aspect, 4. Suranal process of *Sirex nitobei*, dorsal aspect, 5. Suranal process of *Xeris spectrum*, lateral aspect, 6. Antenna of *Urocerus japonicus*, 7. Antenna of *Tremex longicollis*, 8. Antenna of *Sirex noctilio*, 9. Suranal process and its basal part of *Urocerus japonicus*, dorsal aspect, 10. Sinistral mandible of *Tremex longicollis*, ventral aspect, 11. Dextral of the same.