

## The Final-instar Larva of *Venturia townesorum* (Hymenoptera: Ichneumonidae)<sup>1</sup>

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The Nigriscapus Group of the genus *Venturia* (Porizontinae) consists of fifteen New World species, all but one tropical. Only *V. nigriscapus* has had the larva previously figured (Finlayson, 1975; Short, 1978). An adult male of *Venturia townesorum* Wahl (1984a), reared from *Pareuchaetes insulata* (Walker) [Arctiidae] on *Chromolaena odorata* (L.) R. M. King and H. Robison, a tropical composite, was preserved with its larval remains. The host larva was collected by R. E. Crutwell of the Commonwealth Institute of Biological Control at Catemaco, Veracruz, Mexico, 8 July 1969; the adult wasp emerged on 2 Aug. 1969. The parasitoid cocoon was within the host pupa; the cast skin of the final-instar larva was extracted, and is here described and illustrated.

The terminology of the cephalic sclerites is that of Finlayson (1975) and Short (1959), except that *length of mandible* is used for "full width of mandible." Methods of preparation differ from those of Beirne (1941); they consist of: 1) soaking the larval remains for 24 hours in water, 2) briefly ultrasonicing the larval skin, and 3) clearing the cephalic sclerites in Nesbitt's solution. A more detailed discussion of these methods is given by Wahl (1984b).

### DESCRIPTION

Cephalic sclerites (Fig. 1) well sclerotized. Epistoma absent; pleurostoma lightly sclerotized and mesal end with dorsal recurved process; superior mandibular process long and broad; inferior mandibular process with posterior strut not visible; hypostoma terminating in long dorsal extension; hypostomal spur about  $0.9\times$  as long as basal width. Stipital sclerite about  $0.7\times$  as long as hypostoma, broad and of uniform width except for median constriction; median V-shaped carina present. Labial sclerite about  $1.2\times$  as long as wide; ventral portion about  $0.2\times$  as long as length of sclerite; interior ventral margin medially emarginate, width of ventral portion about  $3.0\times$  median width of lateral arm; medial face of lateral arm not serrated; ventral part with small, weakly sclerotized lateral areas present. Prelabial sclerite Y-shaped; free ventrally, touching labial sclerite dorsally; stem about  $0.8\times$  as long as arm. Silk press weakly sclerotized. Mandible with short, slightly curved, strongly sclerotized blade, its length about  $0.4\times$  as long as mandible. (Antenna not on slide, but was circular and lightly sclerotized.) Skin covered with small, bubble-like protuberances and with very few small setae.

The adult and the slides of the cephalic sclerites and skin were deposited at the National Museum of Natural History, Washington, D.C.

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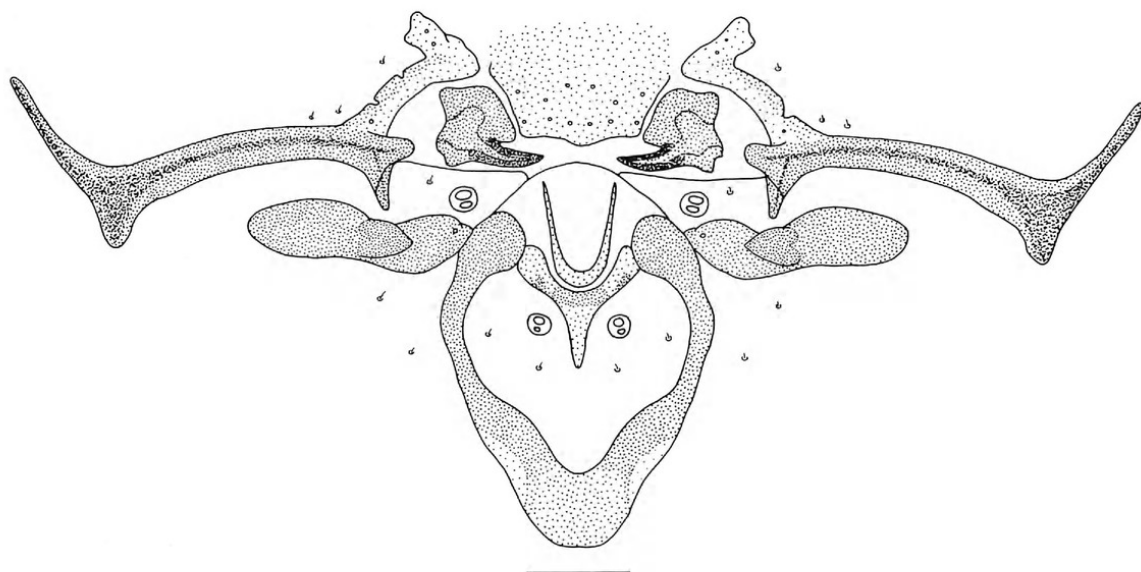


Figure 1. Cephalic sclerites of *Venturia townesorum*. (Scale line = 0.1 mm.)

#### DISCUSSION

The only key to *Venturia* larvae is that of Finlayson (1975), which deals with seven Nearctic species, five of them undescribed. I have examined the adults with which Finlayson's larval skins were associated. Her *Venturia* sp. F is a species of *Sinophorus*, and *Venturia* sp. D is *V. nigriscapus* (Viereck), which thus comes out twice in the key.

Since sp. F belongs to *Sinophorus*, the condition of the prelabial stem being longer than the prelabial arm can be used as a recognition character of *Sinophorus*; *Venturia* has the stem as long as the arm. The polarity of this character is unknown at this time.

Since *V. nigriscapus* comes out twice in Finlayson's key, the relation of length to width of the hypostomal spur must be used with caution as a taxonomic character; it appears to vary within *nigriscapus*.

In searching for characters that would distinguish the known larvae of the *Nigriscapus* Group (*nigriscapus* and *townesorum*), other species of *Venturia* and the genera *Campoplex* and *Sinophorus* were used as outgroups for determining character polarity. One possible synapomorphy for the group is the long dorsal extension of the hypostoma. Finlayson's *Venturia* sp. C possesses a similar feature, but its length and angle relative to the hypostoma differ from those of *nigriscapus* and *townesorum*. Another synapomorphy might be the medially emarginate interior ventral margin of the labial sclerite, which is more developed in *townesorum*. Although several *Sinophorus* species also possess a similar character, it is probably a parallelism, based upon congruence with other characters.

*V. townesorum* differs from *nigriscapus* by the long and broad superior mandibular process, the V-shaped carina of the stipital sclerite, and the lack of serrations on the medial face of the lateral arm of the labial sclerite.

There are eleven described and approximately forty undescribed Nearctic species of *Venturia*. Of these, the larvae of nine are known, including three new ones to be described later. The chances that a specimen will belong to an unfigured species

are high enough that I do not envision a rewritten key as serving any useful purpose.

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#### LITERATURE CITED

- Beirne, B. P. 1941. A consideration of the cephalic structures and spiracles of the final instar larvae of the Ichneumonidae (Hym.). Trans. Soc. Br. Ent., 7:123-190.
- Finlayson, T. 1975. The cephalic structures and spiracles of final-instar larvae of the subfamily Campopleginae, tribe Campoplegini (Hymenoptera: Ichneumonidae). Mem. Entomol. Soc. Can., 94:1-137.
- Short, J. R. T. 1959. A description and classification of the final instar larvae of the Ichneumonidae (Insecta, Hymenoptera). Proc. U.S. Nat. Mus., 110:391-511.
- Wahl, D. B. 1984a. The Nigriscapus Group of *Venturia* (Hymenoptera: Ichneumonidae). Contrib. Am. Entomol. Inst., 21(4):1-36.
- . 1984b. An improved method for preparing exuviae of parasitic Hymenoptera. Ent. News, 95:227-228.



Wahl, David B. 1985. "The final instar larva of *Venturia townesorum* (Hymenoptera: Ichneumonidae)." *The Pan-Pacific entomologist* 61(3), 218–220.

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