

A New Species of *Inostemma* (Hymenoptera: Platygasteridae),
A Larval Parasite of The Pine Gall Midge, *Thecodiplosis* sp.
(Diptera; Cecidomyiidae)

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솔잎혹파리 寄生蜂의 1新種

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ABSTRACT

A new species of Platygasteridae, *Inostemma hockpari* (n. sp.) is described from Korea. This new species is an important biological control agent of the pine gall midge together with *Inostemma seoulis*, *Platygaster matsutama* and *Inostemma matsutama* (Collected in Jinhae by the author) in Korea.

INTRODUCTON

The pine gall midge, *Thecodiplosis japonensis* Uchida et Inouye is the most injurious forest insect pest of pines, *Pinus densiflora* and *Pinus thunbergii* in Korea.

Recently, I am working on the biological control of pine gall midge, especially by applying the Hymenopterous parasites. Author have collected a new species of the parasite of pine gall midge, and has made study on the morphological characteristics of the new parasite. I am grateful to Dr. Yoshihiro Hirashima, Faculty of Agriculture, Kyushu University, Japan for his assistance and cooperation in this study. My thanks give to Dr. L. Masner, Biosystematics Research Institute, Agriculture Canada, and Dr. Kye Chung Kim, Dept.

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INOSTEMMA hockpari new species.

Korean name: 혹파리등뿔떡줄벌 (Hockpari-Deungbul-Meockjamebol).

FEMALE

Length: 1.40~1.62mm

Colour: Body black; antenna dark brown, apical part of scape yellowish brown; legs yellowish brown except coxae which are black; femora darker.

Head: Transverse in front view; height in front view; length in top view: width, 0.33 : 0.39; face slightly convex in front; eye moderate, height: width, 0.18 : 0.14; lateral ocelli nearly [circular; POL(distance between post ocelli): LOL(distance between front and post ocelli): OOL(distance be-

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tween post ocellus and compound eye), 0.13 : 0.07 : 0.03; mandible bidentate; maxillary palpus 2-segmented.

Antenna inserted just above clypeus, 10 segmented; length: width of each antennal segment, I 0.21 : 0.04, II 0.05 : 0.02, III 0.04 : 0.02, IV 0.03 : 0.02, V 0.02 : 0.02, VI 0.03 : 0.02, VII 0.03 : 0.02, VIII 0.04 : 0.06, IX 0.04 : 0.06, X 0.06 : 0.05; club 4-segmented.

Thorax: Ratio of length: height: width across tegulae as 0.45 : 0.35 : 0.36; mesonotum with notaulices complete, broader posteriorly; median lobe of mesonotum rounded apically; scutellum; scutellar foveae with scale-like waxy structure scutellum with postero-lateral corners angulate; posterior margin broadly rounded; frenal groove deep and wide; mesopleuron with a broad impressed area in middle; metapleuron pubescent. Forewing with a subcostal vein which is almost straight and knob-like at distal end, its length 0.27, reaching about 1/3 the length of forewing; length: width of forewing, 0.87 : 0.35, length: width of hindwing, 0.70 : 0.15, Tarsi 5-segmented.

Abdomen: Ratio of length: width of each tergite, I 0.10 : 0.15, II 0.35 : 0.30, III 0.05 : 0.26, IV 0.05 : 0.23, V 0.05 : 0.15, VI 0.15 : 0.11; tergite I has a long horn arising from the dorsum, reaching to head over the thorax, the length: anterior width of process, 0.55 : 0.07; tergite VI triangular, pointed apically.

MALE

Length: 1.24~1.40mm

Unlike female, tergite I without horn, similar to female except antenna and abdomen. Ratio of length to width of each antennal segment, I 0.20 : 0.05, II 0.05 : 0.03, III 0.05 : 0.04, IV 0.05 : 0.04, V 0.03 : 0.03, VI 0.05 : 0.04, VII 0.05 : 0.04, VIII 0.06 : 0.04, IX 0.05 : 0.04, X 0.09 : 0.03, Length: width of abdominal tergites, I 0.11 : 0.13, II 0.33 : 0.30, III 0.05 : 0.27, IV 0.04 : 0.25, V 0.03 : 0.21, VI 0.03 : 0.14, VII 0.03 : 0.11, Tergite VII rounded apically.

Type Material: Holotype female (Type No. 2, Central Forest Research Institute, Korea.), 5 paratype females and 4 paratype males emerged on

June 25, 1979 (reared in insectary) from *Thecodiplosis japonensis*, Mokpo, Jeonranam-Do(J.H.Ko); 4 paratype females May 22, 1977 at same locality (B.Y. Lee); 2 paratype females and 4 paratype males, June 22, 1979, Jangsu, Jeonrabug-Do (J.H. Ko).

Distribution: Korea (Mokpo, Jangsu.)

Diagnosis: The female of the new species differs markedly from that of *Inostemma seoulis* and *Inostemma matsutama* in having very long horn reaching to head on the tergite I.

The characteristics of *I. hockpari* are similar to those of *I. releyi*, except that the former is much larger than the latter in size, and that the length of abdomen is longer than the sum of head and thorax in the former, while the length of abdomen is shorter than the sum of head and thorax in the latter.

Biology: This is an endoparasite of pine gall midge, *Thecodiplosis japonensis* Uchida et Inouye. The life cycle of this species is very similar to that of *Inostemma seoulis*. The adults emerged from early June to mid-July with the peak of emergence in late June. The adults oviposit in newly hatched host larvae and only one adult emerged from one host larvae, although a number of wasp's larvae are seen living together in one host larvae.

抄 録

韓國의 솔잎혹파리 幼虫寄生蜂으로 등뿔먹좀벌屬의 1新種인 혹파리등뿔먹좀벌(新稱)을 記載報告하는 바이다.

혹파리등뿔먹좀벌(*Inostemma hockpari* n. sp.)은 솔잎혹파리먹좀벌(*Inostemma seoulis*), 혹파리사리먹좀벌(*Platygaster matsutama*) 그리고 鎮海에서 採集된 혹파리반뿔먹좀벌(新稱)(*Inostemma matsutama*)과 함께 韓國에서 出現하고 있는 솔잎혹파리의 有力한 幼虫寄生蜂이다.

REFERENCES

Ashmead, W.H. 1887. Studies of the North American Proctotrupidae, with descriptions of new

- species from Florida. Can. Ento. 19(7):125-127.
- Ashmead, W.H. 1893. A Monograph of the noth American Proctotrypidae. Bull. United States National Museum 45, :254-262.
- Ko, J.H. 1965. Studies on the *Isostasius seoulis*(sp. nov.), the Larval parasite of pine gall midge (*Thecodiplosis japonesis* Uchida et Inouye), Taxonomical and Morphological Studies. Res. Reports Office of Rural Developments 8(2):91-96.
- Masner, L., 1964. A comparison of some Nearctic and Palearctic Genera of Proctotrupeoidea(Hymenoptera) with Revisional Notes, Ces. Cs. Spol. Ent. (Acta soc. ent. Cechoslov.) Tom. 61(2):146-148.
- Yoshida, N. and Y. Hirashima, 1979. Systematic studies on Proctotrupoid and Chalcidoid parasites of Gall Midges injurious to Pinus and Cryptomeria in Japan and Korea. Esakia 14:113-133.
- Schmiedeknecht, O. 1932, Die Hymenoptera Nord und Mitteleuropas. 472-474.
- Fouts. R. 1932. Description of a New Serphoid parasite(Hymen.). Proc. Ent. Wash., 25(3):64-65.

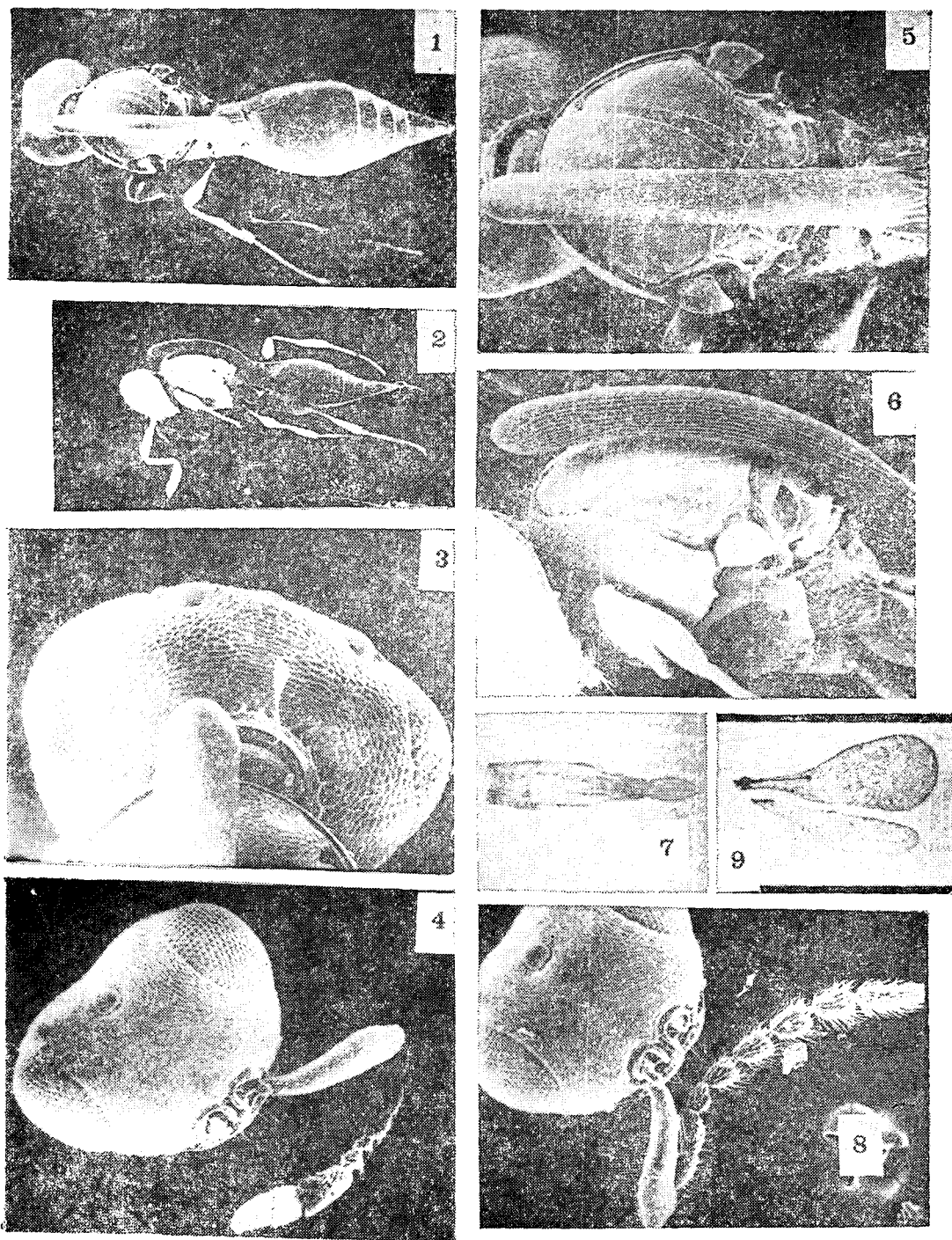


Fig. 1-9. *Inostemma hockari*, new species

1, Habitus, dorsal view, female (45x); 2, Habitus, lateral view, female (30x); 3, Occiput, female (165x); 4, Head & antenna, female (120x); 5, Dorsal view, female thorax (120x); 6, Lateral view, female thorax (120x); 7, Genitalia, male (230x); 8, Head & antenna male (120x); 9, Wings (35x);