A NEW SPECIES OF *DIPRION* (HYMENOPTERA: DIPRIONIDAE) DAMAGING *PINUS* SPP. IN KOREA

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**Abstract.** — *Diprion hani* Smith and Cho, n. sp., is described from Korea. A description and illustrations of the female, male, and larva are given. This species was found feeding on *Pinus koraiensis* Sief. & Zucc. and *Pinus strobus* L. (Pinaceae) in Chungcheongbuk-do Province in 2007.

**Key Words:** Symphyta, sawfly, pine, *Pinus koraiensis*, *Pinus strobus*

A sudden outbreak of a sawfly damaging pines in Chungcheongbuk-do Province in Korea was discovered in 2007. Adults reared from larvae represent an undescribed species of *Diprion* Schrank, a Palearctic genus of 12 species (Taeger and Blank 2008), with one species, *D. similis* (Hartig), introduced into the Nearctic. Such a sudden appearance of a sawfly may indicate the introduction of an exotic species. Whether or not it is an introduction is unknown and, regardless of its status, it differs from all other known species of the genus. We describe this species to provide a name for future use.

*Diprion hani* Smith and Cho, new species

(Korean name: jaht-na-mu-sol-ip-beol)  
(Figs. 1–6)

Diagnosis.—Female with mesonotum, metanotum, coxae, and femora black. Male abdomen black; legs with coxae, femora, and apex of hind tibia black. Female ovipositor with first annulus slightly divergent from second annulus; teeth large and rather uniform in size on each annulus; basal three serrulae double-toothed. Valviceps of male penis valve with deep ventral concavity and narrow apical and ventral lobes. Larva with two dorsal black stripes and one lateral black stripe.

Female (Figs. 1, 3).—Length 7.8–8.2 mm. **Color.** Antenna black with scape, except extreme base, and pedicel yellowish. Head black with labrum whitish, apex of mandible dark red, and palpi yellowish. Thorax black with following yellowish: Pronotum; mesepisternum; meso- and metathorax; narrow line on anterior half of lateral margins of prescutum; spot laterally on lateral lobes; anterior quarter of mesoscutellum. Abdomen
Figs. 1–2. *Diprion hani*. 1, Female, dorsal. 2, Male, dorsal.

with tergite 1 yellow; tergite 2 yellow with central black spots; tergites 3–6 black dorsally, lateral downturned margins yellow; tergite 7 black, narrowly yellowish anteriorly and broadly yellow (more than on tergites 3–6) laterally; tergite 8 yellow; tergite 9 black with yellow spot laterally on posterior margin; tergite 10 brownish, with black laterally; sheath black; sternites yellowish. Legs with coxae black, extreme apices yellow; trochanters yellow with inner surfaces blackish; femora black with apical fifth of fore- and mid femora and extreme apex of hind femur yellowish; fore- and midtibiae yellow, hind tibia yellow with apical quarter black; tarsi yellow with extreme apices of segments of hind tarsi black ringed. Wings hyaline; veins brownish with subcosta and veins apical to base of stigma more blackish; stigma brown, basal quarter blackish. Head: Antenna (Fig. 3) 20-segmented; rami on segments 3 and 4 short, rami on 5 to about 10 longest, equal or greater than segment length; rami on remaining segment decreasing in length to apex. Shining,
scattered punctures separated by shining interspaces mostly greater than puncture diameters. *Thorax*: Shining, scattered punctures separated by shining interspaces mostly greater than puncture diameters; more densely punctate, closely set almost contiguous punctures on mesoscutellum and metascutellum. *Abdomen*: Tergites dorsally dulled with fine microsculpture; lateral downturned portions of tergites and sternites shining, punctures farther apart, separated by shining interspaces mostly greater than puncture diameters. Sheath with oval scopal pads at apex, rounded in lateral view, uniformly wide in dorsal view and blunt at apex. Lancet (Fig. 4) with 9 annuli; annulus 1 slightly divergent from annulus 2, annuli 2 to apex subparallel; distance between annulus 1 and annulus 2 at center subequal to distance between annulus 2 and annulus 3; teeth on each annulus relatively uniform in size; basal 3 serrulae with basal and apical tooth separated by concave area.

*Male* (Fig. 2).—Length 6.0–6.3 mm. *Color*: Head, thorax, and abdomen black.
with labrum white, apex of mandible dark red, palpi yellowish, and small yellow spot on downturned lateral portion of tergite 2. Legs with coxae, trochanters, and femora black, extreme apices of femora, tibiae, and tarsi yellow; extreme apex of hind tibia blackish. Head: Antenna 23–24 segmented; rami long, decreasing in length to apex. Densely punctate, punctures closely set, almost contiguous. Thorax: Pronotum, mesonotum, metanotum, mesopleuron densely punctate with punctures closely set and almost contiguous. Abdomen: First tergite densely, coarsely punctate; remaining terga dulled with microsculpture. Lateral downturned areas of tergites and sternites shining, punctures farther apart, separated by shining interspaces. Penis valve (Fig. 5) with valviceps deeply concave ventrally, with long apical lobe truncate at it apex, and long ventral lobe rounded at apex; small spines present on basal two-thirds of concavity.

Larva (Fig. 6).—Green when alive; head black; thorax and abdomen with two continuous black longitudinal dorsal stripes, one continuous black lateral stripe, and one broken surpedal stripe.

Types.—Holotype female, labeled “Pyeongdong-ri, Baekwoon-myon, Jecheon, CB [Chungcheongbuk-do Province], Korea, 29 Jan 2008, collected as cocoon, emerged 4 March 2008 @ 25 C, coll. by J. H. Han & S. Cho.” Deposited in the insect collection, Department of Plant Medicine, Chungbuk National University, Cheongju. Paratypes: Same data as holotype (4 ♀, 11 ♂); same data as holotype, except collector J. H. Han, 2007.11.27 (1 ♂), 2007.11.28 (1 ♂), 2007.11.29 (1 ♀); Yangpyeong, GG [Gyounggi-do Province], 2.III.2008, W. I. Choi (2 ♀, 1 ♂); Ilshin-Ri, Jipyegong-Myeon, Yangpyeong, Prov. Gyeonggi, Korea, 6.III.2008 (W. I. Choi & B. K. Byun) – coll., KNA. Host plant: Pinus koraiensis (5 ♂). Deposited with the holotype and at the National Museum of Natural History, Smithsonian Institution, Washington, DC, National Science Museum (Natural History), Tokyo, and Korea National Arboretum, Pocheon, Korea.

Etymology.—Named for Je-Hwan Han, one of the collectors who provided some life history data. The Korean name is derived from the general common name for P. koraiensis and P. strobus (jaht-na-mu), plus the general common name for pine sawflies (sol-ip-beol).

Remarks.—Eight of the 12 known world species of Diprion were examined
Fig. 6. *Diprion hani*, larva on pine. Photo by J-HH.

and compared with the new species: *Diprion fukudai* Togashi 1964; *D. hutacharernae* Smith 1979; *D. liuwanensis* Huang and Xiao 1983; *D. nipponica* Rohwer 1910; *D. nonhuaensis* Xiao 1983; *D. pini* (L., 1758); *D. similis* (Hartig, 1936); and *D. wenshanicus* Xiao and Zhou 1983. Comparisons with the other four species, *D. jingyuanensis* Xiao and Zhang 1994, *D. kashmirensis* Saini and Thind 1993, *D. koreana* Takagi 1931, and *D. tianmunicus* Zhou and Huang 1983, are from illustrations and descriptions of those species in the literature.

No other species of *Diprion* have the distinctive deep ventral concavity and narrow, truncate apical lobe and narrow rounded ventral lobe of the valviceps of *D. hani*. All others are more or less oval without or a very slight ventral concavity and with broad rounded apical and ventral lobes. The female lancet is most similar to *D. similis* except that the distance between the first and second annulus is as long or longer than the distance between the second and third annulus and the teeth on the first annulus are slightly larger. Additional support for *D. hani* as a new species is the distinctive larva with green with, continuous longitudinal stripes; the larva of *D. similis* is mottled black and green without distinct continuous stripes.

For *D. pini* and *D. similis* see Benson (1952: figs. 124–127) and Viitassari and Varaima (1987: figs. 19–20); for *D. hutacharernae* see Smith (1979: figs. 1, 5); for *D. kashmirensis*, described only from the male, see Saini and Thind (1993: fig. 4); for *D. fukudai* see Togashi (1964: fig. 3), for *D. koreana, D. fukudai,* and *D. nipponica*, see Togashi and Sato (1985, figs. 5–7, 11–13); for *D. koreana*, the only other *Diprion* known in Korea which feeds on *Larix* sp., see Takagi (1931: figs. 7, 8); for *D. liuwanensis, D. wenshanicus, D. tianmunicus,* and *D. nanhuaensis,* see Xiao et al. (1983: figs. 1, 3, 4, 6, 7, 11, 12); and for *D. jingyuanensis,* see Xiao and Zhang (1994: figs. 1, 2). Rohwer (1910) did not illustrate the genitalia of *D. nipponica*, but I have examined this species and it was illustrated by Togashi and Sato (1985).

Color may be helpful in distinguishing *D. hani*; however, within the type series
potential color variation is not evident. *Diprion similis* varies in color though almost always has much of the mesonotum and legs yellowish. Species we have seen that are most similar to the color of *D. hani* are *D. liuwanensis* and *D. nanhuaensis*, but in the former the legs are entirely black and the mesepisternum is black to dark brown and in the latter there are broader yellow markings on the mesonotum, the mesoscutum is mostly yellowish, and the legs are black.

Life history.—Larvae have been found feeding on *Pinus koraiensis* Sieb. & Zucc. (Korean pine) and *Pinus strobus* L. (eastern white pine) (Pinaceae).

The life history has not been completely worked out. The first larvae were reported in Korea on September 22, 2007 at the type locality. Larvae have been found from late September to late November feeding on the foliage of the host plant. After feeding on one plant, they seem to move in groups to another tree. Larvae began making cocoons in November. Cocoons may be on the bark, twig, or undersides of leaves of other plants in the vicinity. In the laboratory, some adults emerged as early as the following February.

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LITERATURE CITED


