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First record of *Psacothea hilaris* (Pascoe) in Europe (Coleoptera Cerambycidae Lamiinae Lamiini) (*)

Abstract - *Psacothea hilaris* (Pascoe) is recorded for the first time in Europe. The species was found in 2005 in Lombardy (Italy). It is a xylophagous coming from Asia. It attacks plants from the family of Moracae. Informations about distribution, biology and control are reported.

Riassunto - *Prima segnalazione di* Psacothea hilaris *(Pascoe) (Coleoptera Cerambycidae) in Europa.*

Si segnala la presenza per la prima volta in Europa di *Psacothea hilaris* (Pascoe), Coleottero Cerambicide rinvenuto nel 2005 in Lombardia. Si tratta di uno xilofago di origine asiatica parassita di piante della famiglia delle Moraceae. Vengono riportate alcune notizie sulla distribuzione, la biologia e il controllo.

Key words: Italy, new record, Moraceae, xylophagous, Yellow-spotted Longicorn Beetle.

FINDINGS

Among species of exotic Coleoptera Cerambicidae recently introduced in Italy and settled, Sama (2005) remembers: *Neoclytus acuminatus* F., native of USA, *Phoracantha semipunctata* F. and *P. recurva* Newman, coming from Australia, *Callidellum rufipenne* (Motschulsky), originate from Far East, *Xylotrechus stebbingi* Gahan, from India, and *Anoplophora chinensis* (Forster), introduced from Asia. The last one is a quarantine species, reported in the EPPO A1 list, recorded in 2000 in Lombardy and introduced with bonsai (Colombo & Limonta, 2001).

In September 2005 the presence of two specimens of Coleoptera with a characteristic livery was reported to the Regional Phytosanitary Service. An inspection was carried out, and one male and one female of a longicorn were collected and classified as *Psacothea hilaris* (Pascoe) (Coleoptera Cerambycidae Lamiinae Lamiini) (Fig.1). Samples were collected dead in the proximity of a private woodshed, in the municipality of Almenno San Salvatore (BG). The wood was probably coming from France.

Another specimen was observed in a entomological box brought by a student to the Institute of Agricultural Entomology. The adult was collected at the beginning of October 2005 on a grass nearby Asso (CO), still in Lombardy.

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GEOGRAPHICAL DISTRIBUTION AND HOST PLANTS

P. hilaris, know as Yellow-spotted Longicorn Beetle, is widespread in eastern Asia (Asano *et al.*, 2004).

The beetle has been intercepted several times in Canada in wood warehouse, on wood and wooden spools imported from Asia (http://www.pfc.forestry.ca); in Europe has never been recorded before.

P. hilaris attacks plants belonging to Moraceae family, in particular to *Morus* and *Ficus* genus. In Japan it is an important pest of sericulture, because larvae bore tunnels in the trunks and adults feed on the leaves of mulberry trees, which are the food source of *Bombyx mori* L.

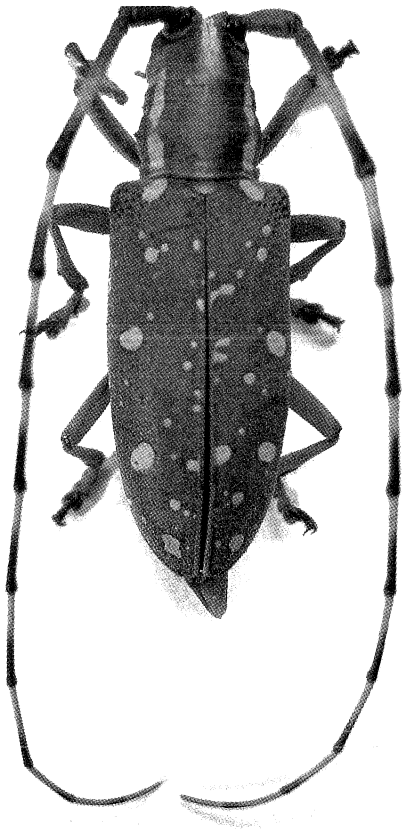

Fig. 1 - Adult of *Psacothea hilaris*.

BIOLOGICAL NOTES

Adults body length (from the head to the end of elytra) varies from 13 to 30 mm in males and 15 to 31 mm in females (Fukaya, 2004). *P. hilaris* has large geographic variation in morphology,

and is divided into 13 subspecies (Kusama & Takakuwa, 1984). One of them, *P. hilaris hilaris*, inhabits three of the four main island of Japan: Honshu, Shikoku and Kyushu. Within this subspecies, two morphological types, the "west Japan type" (wJt) and the "east Japan type" (eJt) have been recognized (Iba, 1980; Makihara, 1986). The two types are distinguished by the spot patterns on the pronotum of adults. The wJt has severed yellow stripes on the pronotum, while the eJt has continuous stripes (Iba, 1980). These two ecotypes are also characterized by different life cycle and photoperiodic responses (Iba *et al.*, 1976; Sakakibara & Kawakami, 1992). The wJt has its first adult peak in early summer, and a second small one, in autumn (Shintani *et al.*, 1996a; Shintani & Ishikawa, 1997); the eJt shows an increase in adult population in autumn (Iba, 1976; Iba *et al.*, 1976; Sakakibara & Kawakami, 1992). Moreover, the wJt enters diapause as mature larvae in response to low temperature and short daylenght in autumn (Shintani *et al.*, 1996a; Shintani & Ishikawa, 1997), while the eJt overwinters as egg stage (Makihara, 1986; Sakakibara & Kawakami, 1992), or enters diapause at temperature lower than the wJt (Shintani & Ishikawa, 1997a).

The larval photoperiodic response of the wJt has been investigated in detail (Shintani *et al.*, 1996a, b; Shintani & Ishikawa, 1997b, 1998). Larval development at 25C° respond to the photoperiodic variation. Under a long daylenght (LD 15:9 h) they pupate after the 4th or 5th instar, whereas under short day (LD 12:12 h) the larvae present numerous moults (up to 10) and eventually enter diapause.

Females feed on the leaves of the host plants, preferably the younger, for 7-10 days, before oviposition (Iba, 1976). Eggs are laid in the subcortical tissues, and new emerged larvae bore tunnels in the trunk, where they complete the life cycle. They cause the weakening or even the death of the plant.

Studies on the biology indicate that *P. hilaris* can complete the life cycle in one or two years, and can have two generations per year, depending on the time of eggs deposition. Adults show two peaks of presence, one at the end of May-early June, and a second one at the end of July. Oviposition begins in mid-June. Usually the species overwinters as mature larvae and new adults emerge at mid-June of the following year. However some of the eggs laid in June and early July can develop to adults without entering diapause with a peak of presence in the middle of August in the same year. A portion of eggs laid in October take two years to complete the development and become adults (Watari *et al.*, 2002).

CONTROL

Control of *P. hilaris* is very difficult because the larvae live inside the trunk where they bore tunnel, and are not visible from the outside. In Japan the use of extensive insecticide treatment is impossible on mulberry trees because their leaves are fed by *B. mori*.

The control of the insect is more successful between 1st and 3rd instars, when larvae are just under the bark, before shift in the xylem and damage the trees (Iba, 1993). Bark application of organophosphorus insecticides is effective to control eggs and 1st to 3rd stadium larvae (Iba, 1993).

CONCLUSIONS

The record of *P. hilaris* represents one of the numerous accidental introduction of alien species in a new area. In fact the quick trade of plants and fruits among Continents favours the spread of phytophagous, despite the phytosanitary control. Moreover in this case we are dealing with an insect who lives preimmaginal stages hidden inside the trunk, making his interception at barriers control more difficult.

Despite the monitoring activity, up to now no other records of *P. hilaris* have been reported.

Because in our Country adults fly at the end of summer, surveying will be done again in September around the area of first finding.

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