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First interception of the cerambycid beetle *Stromatium longicorne* (Newman, 1842) in Belgium and distribution notes on other species of *Stromatium* (Coleoptera: Cerambycidae: Cerambycinae)

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Summary

In this paper, a summary of the distribution of the five species of the genus *Stromatium* Audinet-Serville is provided. Further the first interception of *Stromatium longicorne* (Newman, 1842) is reported and discussed.

Keywords: Coleoptera, Cerambycidae, Cerambycinae, Hesperophanini, *Stromatium* spp., distribution, *Stromatium longicorne*, Belgium, first interception.

Résumé

Dans cet article, un récapitulatif de la distribution des cinq espèces composant le genre *Stromatium* Audinet-Serville est présenté et la première interception de *Stromatium longicorne* (Newman, 1842) en Belgique est signalée. Cette capture est présentée et commentée.

Samenvatting

In dit artikel wordt een samenvatting gegeven van de verspreiding van de vijf soorten die het genus *Stromatium* Audinet-Serville vormen. Tevens rapporteren we de eerste interceptie van *Stromatium longicorne* (Newman, 1842) in België. De vangst wordt hier voorgesteld en besproken.

Introduction

The genus *Stromatium* Audinet-Serville, 1834 belongs to the tribe Hesperophanini Mulsant, 1839, and currently comprises five species: *Stromatium alienum* (Pascoe, 1857), *Stromatium barbatum* (Fabricius, 1775), *Stromatium chilensis* Cerda, 1968, *Stromatium longicorne* (Newman, 1842) and *Stromatium unicolor* (Olivier, 1795). *Stromatium ambiguum* (Newman, 1842) – (described from Philippines along with *S. longicorne*, under the genus *Arhopalus* Audinet-Serville, 1834) – is a junior synonym of *Ceresium flavipes* (Fabricius, 1793) and *Stromatium asperulum* White, 1855 is recognised as a junior synonym of *S. longicorne*. Moreover, *Stromatium kartaboensis* Fischer, 1944, from British Columbia is a junior synonym of *Achryson quadrimaculatum* (Fabricius, 1792), and *Stromatium signiferum* Pascoe, 1885 is a junior synonym of *Zoodes eburioides* Lacordaire, 1869.
Four more species have been described with a question mark in the genus *Stromatium*: *Stromatium maculatum* White, 1855 which is now placed in the genus *Zoodes* Pascoe, 1867 for which it represents the type-species; *Stromatium carinatulum* Karsch, 1882 and *Stromatium laticolle* Pascoe, 1869 are

considered by GAHAN (1906) as synonym of *Zoodes eburioides* and *Stromatium longicorne*, respectively while *Stromatium inermis* Tournier, 1872 is new a synonym of *S. unicolor*.
Stromatium barbatum, *S. longicorne* and *S. unicolor* are native to the Oriental, South-Eastern Palaearctic and Mediterranean areas and for a long time they are known from different parts of the world. *Stromatium alienum* and *S. chilensis* are not known from any other localities than their native area and are strictly Neotropical species (LÖBL & SMETANA, 2010; BEZARK & MONNÉ, 2013). *Stromatium barbatum*, *S. longicorne* and *S. unicolor* live in dead wood, even when dry, for prolonged time, and their life cycle can take several years (1 to 7 years for *S. barbatum* (DUFFY, 1953)). These characteristics facilitate survival even during long overseas travels. These beetles are therefore often carried over long distances in wooden furniture, wood packaging and other wooden material.
Until recently, no specimen of *Stromatium* has been intercepted in Belgium, although there are several reports from elsewhere in Europe.

First interception of *Stromatium longicorne* (Newman, 1842) in Belgium

One *Stromatium longicorne* male specimen (Fig. 1) was discovered by the third author D. Brosens in august 2013, in the living quarters of a house located in the Jules de Cocklaan, Gentbrugge, Oost-Vlaanderen province, Belgium. The specimen was found, probably just after emergence from pupa (Fig. 2) and was incapable of movement or flight at the time of its discovery. Some hours later the beetle became very active, indicating the beetle was in good condition (Fig. 3).
The entire woodwork in the house was then thoroughly examined and even wooden toys were examined carefully but no exit hole was found. A recent re-examination of one toy, a wooden rocking horse, showed an exit hole which would fit those from *Stromatium longicorne* (Figs 4-5). The maximal length of this exit hole measured 9 mm and the maximal width measured 6 mm. A second individual was, to date, not found.
The house was recently renovated and the wood used for this was *Quercus* sp. and *Pseudotsuga* sp. Normally, the wooden toy should have been made in Germany and the rocking horse was bought in an antiquities store in Bruges (pers. comm.). It's noteworthy that earlier, in the same house, another cerambycid beetle, *Cerambyx cerdo* Linnaeus, 1758 specimen was discovered (DRUMONT *et al*., 2012).
The *S. longicorne* specimen is now preserved in the Royal Belgian Institute of Natural Sciences (Brussels, Belgium) and incorporated in the collection of the saproxylic beetles (I.G.: 32.835).

Fig. 1. *Stromatium longicorne* (Newman, 1842). Habitus, dorsal view of the male found in august 2013 in Belgium (*in* coll. RBINS) (Photo N. Mal).

Distribution and known interceptions of *S. barbatum*, *S. longicorne* and *S. unicolor*

Stromatium barbatum is native to the Oriental Region (India, Myanmar, Sri Lankā, Seychelles and Andaman Islands), but is present since long time in Madagascar and surroundings (Madagascar, Rodriguez, Réunion, Mauritius) and Ethiopian Region (Zanzibar) (GAHAN, 1906; BAINBRIGGE FLETCHER, 1919; BEESON & BHATIA, 1939; DUFFY, 1953; 1957; 1980; VINSON, 1962). It was intercepted in Scotland at Glasgow in 1928, in England at London in 1936 (EMDEN, 1937; 1939; 1940; DUFFY, 1957), in Spain at Calle Balmes (Barcelona) in wooden material coming from India (VIVES, 1995; GONZALES PEÑA *et al*., 2007), as well as in Finland (SAALAS, 1939). It has not been seen again in Europe since 80 years (COCQUEMPOT, 2007).

Fig. 2. The specimen, just after metamorphosis at the time of its finding in the house (Photo D. Brosens).

Fig. 3. The specimen after one day (Photo D. Brosens).

Fig. 4. Suspected carrier of the concerned *S. longicorne* larva (Photo D. Brosens).

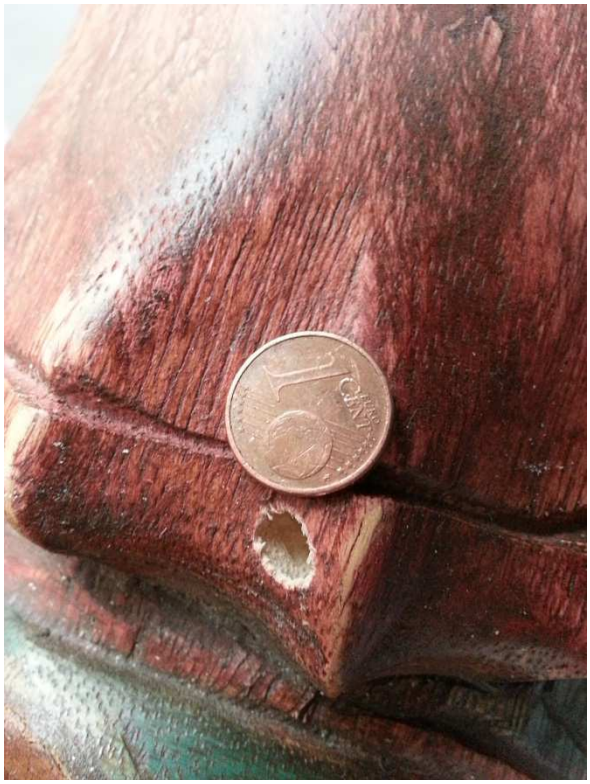

Fig. 5. Detail of the exit hole with a coin of 1 eurocent as scale (Photo D. Brosens).

Stromatium longicorne is also native from the Oriental Region, but more extended and reaching the limits of the Palaearctic countries (India (Assam), Myanmar, Thaïland, China (South Taiwan, Hong-Kong), Sri Lankā, Philippines, Indonesia (Java, Sumatra, Célèbes, Séram, Amboina, Bachan), New Guinea, Japan (Ryukyu, Loochoo and Bonin Islands), Malaysian Peninsula, Laos, Pakistan (East) (GAHAN, 1906; BEESON & BHATIA, 1939; GRESSITT, 1951, 1959; DUFFY, 1963, 1968; GRESSITT *et al*., 1970; OHBAYASHI *et al*., 1992). It was imported in Australia (DUFFY, 1963, 1968). It has been found in Europe, at London in 1922 (= *Stromatium asperulum* White, 1855) (BLAIR, 1923), and was found occasionally in Great Britain (Glasgow, London) (DUFFY, 1953). An example was found recently in France (1996), emerged from furniture of unknown origin, at La Ciotat (Bouches-du-Rhône) (COCQUEMPOT, 2007). REID & CANNON (2010) also report a recent interception in Great Britain.

Stromatium unicolor, formerly and still often called under its synonym *fulvum* (Villers, 1789), occurs in the Palaearctic Region, but also in South America (Neotropical), and in Africa (Democratic Republic of Congo (Belgian Congo)) (BLACKWELDER, 1944; DUFFY, 1957). It has been intercepted

several times in France, from the end of 19th to the beginning of the 20th century. Several specimens have emerged during 20 years from a wooden trunk coming from Syria in 1874 (CAILLOL, 1914). One specimen from Kabylie (Algeria) has been found during the universal exhibition of 1889 (KÜNCKEL-D'HERCULAIS, 1893; CAILLOL, 1914). It has probably been introduced in Madeira (FAUVEL, 1897; GONZALES PEÑA *et al*., 2007; COCQUEMPOT & LINDELÖW, 2010). *Stromatium unicolor* was intercepted occasionally in Great Britain from Mediterranean countries and South America (DUFFY, 1953). It has been found with several other exotic Cerambycidae species in a factory specialized in production of mainly plywood in Czech Republic, the material for plywood was probably imported from Iran (HEYROVSKÝ, 1965) (from Martin REJZEK's translation). It was reported from Sweden (MANNERKOSKI, 1984), The Netherlands (ROSSEM *et al*., 1971; STERRENBURG, 1992) and several times in Finland, from Spanish and Italian furniture (MUONA, 2000). Established populations from Hungary and Romania, and interceptions from Switzerland are consecutive from importations (BENSE, 1995).

Discussion

The record of one exemplar of *S. longicorne* in a house in Belgium illustrates once again that some cerambycid beetle can often travel undetected due to the fact that the larval stage feeds within trees and timber products (REID & CANNON, 2010), and that the development can continue without any direct visible traces until the emergence of the adults. The species *S. longicorne* seems to belong to this category as one specimen emerged from a piece of furniture in La Ciotat in 1996 (Bouches-du-Rhône, France) where the wood and its origin was unknown (COCQUEMPOT, 2007). Another specimen was recently intercepted in Austria where a dead exemplar was found on 28 August 2013, in a container with granite stone consignment from China (Fuzhou), with wood packaging material but with no further symptoms or signs of other beetles or larvae in the container, as well as no possibility to find from which piece of wood the beetle emerged (Hannes KREHAN, pers. comm.).

As the *S. longicorne* larvae live in dry wood and often needs several years to develop, the adults can emerge from pieces from furniture several years after they were manufactured and imported (COCQUEMPOT, 2007). The life cycle is poorly known, but is probably similar to that of *S. barbatum* and *S. unicolor*, which are well studied. The complete development needs from one to five years or more. It prefers dry wood, even old, and the larva bores galleries only in the sapwood. The fecundity varies from 108 to 320 eggs (YASHIRO, 1940; ZHEN-HUA *et al*., 1982). All immature stages are described by YASHIRO (1940). It is very difficult to prove and state if the species would establish on the long term in Europe but *S. longicorne* may complete development in storage sites of wooden products or timbers and show damages later after the importation, as it was suggested by COCQUEMPOT (2007).

Until now, no significant loss of wood material has been attributed to this species in Europe but *S. longicorne* was suspected to be responsible for heavy damage to floorboards imported in the Toulouse area (Haute-Garonne, France) (L. VALLADARES *in* COCQUEMPOT, 2007).

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References

BAINBRIGGE FLETCHER T., 1919. - Annotated list of Indian crop-pests. *Proceedings of the third entomological Meeting, Pusa*, 1919: 33-288.

BEESON C.F.C. & BHATIA B.M,. 1939. - On the biology of the Cerambycidae (Coleopt.). *Indian Forest Records, Entomology*, 5(1): 235 pp.

BENSE U., 1995. - *Longhorn beetles. Illustrated Key to the Cerambycidae and Vesperidae of Europe*. Margraf Verlag, Weikersheim, Germany: 512 pp.
BEZARK L.G. & MONNÉ M.A., 2013. - *Checklist of Oxypeltidae, Vesperidae, Disteniidae and Cerambycidae, (Coleoptera) of the Western Hemisphere*. On-line Author's paper: 484 pp.
BLACKWELDER R.E., 1944. - *Checklist of the coleopterous insects of Mexico, Central America, the West Indies, and South America. Part 1*. United States Government Printing Office, Washington: 925 pp.
BLAIR K.G., 1923. - Some exotic insects found in London. *The Entomologist's monthly Magazine*, 59: 66-67.
CAILLOL H., 1914. - Catalogue des Coléoptères de Provence. 3ème partie. *Mémoires de la Société linnéenne de Provence, Marseille*: 594 pp.
COCQUEMPOT C., 2007. - Alien longhorned beetles (Coleoptera Cerambycidae): original interceptions and introductions in Europe, mainly in France, and notes about recently imported species. *Redia*, 89: 35-50.
COCQUEMPOT C. & LINDELÖW Å., 2010. - Longhorn beetles (Coleoptera, Cerambycidae). Chapter 8.I. *Biorisk*, 4 (1): 193-218.
DRUMONT A., CAMMAERTS R., VAN NUFFEL C. & NAVEZ P., 2012. - *Cerambyx cerdo* Linnaeus, 1758 en Belgique (Coleoptera, Cerambycidae). *Lambillionea*, CXII (1): 61-73.
DUFFY E.A.J., 1953. - *A Monograph of the immature stages of British and imported Timber Beetles (Cerambycidae).* British Museum, Natural History, Editor, London: 350 pp.
DUFFY E.A.J., 1957. - *A Monograph of the immature Stages of African Timber Beetles (Cerambycidae).* British Museum, Natural History, Editor, London: 338 pp.
DUFFY E.A.J., 1963. - *A Monograph of the immature Stages of Australasian Timber Beetles (Cerambycidae).* British Museum, Natural History, Editor, London: 235 pp.
DUFFY E.A.J., 1968. - *A Monograph of the immature Stages of Oriental Timber Beetles (Cerambycidae).* British Museum, Natural History, Editor, London: 434 pp.
DUFFY E.A.J., 1980. - *A Monograph of the immature Stages of African Timber Beetles (Cerambycidae), Supplement*. British Museum, Natural History, Editor, London: 186.
EMDEN F. van, 1937. - An Indian cerambycid damaging tea cases. *Bulletin of entomological Research,* 28: 321-323.
EMDEN F. van, 1939. - Larvae of British Beetles.-I. A key to the genera and most of the species of british Cerambycid larvae. *The Entomologist's monthly Magazine*, 75: 257-273.
EMDEN F. van, 1940. - Larvae of British Beetles.-II. A key to the genera and most of the species of british Cerambycid larvae. *The Entomologist's monthly Magazine*, 76: 7-13.
FAUVEL A., 1897. - Catalogue des coléoptères des îles Madère, Porto-Santo et Desertas. *Revue d'Entomologie*, 16: 45-73.
GAHAN C.J., 1906. - *The Fauna of British India including Ceylon and Burma. Coleoptera.- Vol. I (Cerambycidae).* Taylor & Francis Printers, London: 329 pp.
GONZÁLEZ PEÑA C.F., VIVES E. & ZUZARTE A.J., 2007. - Nuevo catálogo de los Cerambycidae (Coleoptera) de la Península Ibérica, islas Baleares e islas atlánticas: Canarias, Açores y Madeira. *Monografias de las Sociedad entomologica aragonesa, Zaragoza*, 12: 211 pp.
GRESSITT J.L., 1951. - Longicorn Beetles of China. *Longicornia*, 2: 1-667.
GRESSITT J.L., 1959. - Longicorn beetles from New Guinea, I. (Cerambycidae). *Pacific Insects*, 1(1): 59-171.
GRESSITT J.L., RONDON J.A. & BREUNING S., 1970. - *Pacific Insects Monograph 24. Cerambycid-beetles of Laos.* Entomology Department, Bernice P. Bishop Museum, Honolulu: 651 pp.
HEYROVSKÝ L., 1965. - Faunistika čeledi Cerambycidae Čssr. *Referty entomologického Symposia, Opava*, 1965: 53-76.
KÜNCKEL-D'HERCULAIS J., 1893. - Particularités biologiques de divers Coléoptères observés en Algérie. *Bulletin de la Société entomologique de France*: 306-307.
LÖBL I. & SMETANA A., 2010. - *Catalogue of Palaearctic Coleoptera. Volume 6. Chrysomeloidea.* Apollo Books, Stenstrup: 924 pp.
MANNERKOSKI I., 1984. - *Stromatium fulvum* (Villers) (Cerambycidae) kulkeutunut toukkana Suomeen ja kehittynyt täällä aikuiseksi. *Notulae entomologicae*, 64(4): 200.
MUONA J., 2000. - Short Notes. *Stromatium fulvum* (Villers) (Cerambycidae). *Entomologica fennica*, 11: 2.
NEWMAN E., 1842. - Cerambycitum insularum Manillarum Dom. cuming captorum enumeration digesta. *The Entomologist*, 15: 213-248.
OHBAYASHI N., SATÔ M. & KOJIMA K., 1992. - *An illustrated Guide to Identification of Longicorn Beetles of Japan*. Tokai University Press, Tokyo: 697 pp.
REID S. & CANNON R., 2010. - *Psacothea hilaris* (Coleoptera: Cerambycidae) and other exotic longhorn beetles. *Fera News on line*, 2010: 5 pp.
ROSSEM G. van, BURGER H.C. & BUND C.F. van de, 1971. - Schadelijke insekten in 1970. *Entomologische Berichten*, 31(8): 147-152.

SAALAS U., 1939. - *Stromatium barbatum* Fabr. toukan (Col., Cerambycidae), kulkeutuminen Intiasta Suomeen vanerilaudan kappaleessa. *Annales Entomologici fennici*, 5(1): 41-47.
STERRENBURG F.C.F., 1992. - Additions to the Beetlefauna of the Netherlands (Coleoptera). *Entomologische Berichten*, 52(6): 77-80.
VINSON J., 1962. - Catalogue of the Coleoptera of Mauritius and Rodriguez. Part IV and supplement I. *Mauritius Institute Bulletin*, 4(4): 197-297.
VIVES E., 1995. - Notas sobre longicornios ibéricos (V). Cerambícidos importados o aclimatados en la Península Ibérica (Coleoptera, Cerambycidae). *Zapateri, Revista aragonese de Entomologia*, 5: 165-174.
YASHIRO H., 1940. - On the life history of *Stromatium longicorne* New. *Bulletin of Okinawa Forest Science*, 1: 1-10.
ZHEN-HUA S., KE-GUO C. & SHU-QING T., 1982. - Studies on *Stromatium longicorne* (Newman) (Coleoptera, Cerambycidae). *Acta entomologica sinica*, 25 (1): 35-41.