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ALIEN LONGHORNED BEETLES (COLEOPTERA CERAMBYCIDAE): ORIGINAL INTERCEPTIONS AND INTRODUCTIONS IN EUROPE, MAINLY IN FRANCE, AND NOTES ABOUT RECENTLY IMPORTED SPECIES

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Cocquempot C. – Alien longhorned beetles (Coleoptera Cerambycidae): original interceptions and introductions in Europe, mainly in France, and notes about recently imported species.

Interceptions of eighteen species of longhorned beetles in Europe, mainly in France, are reported and information about their origin, biology, host plants, potential damage, and economical impact are given. Notes about the updated situation of the most recently imported pest species are presented.

KEY WORDS: Coleoptera, Cerambycidae, Interceptions, Introductions, Europe, France.

INTRODUCTION

As soon as humans wanted and were able to circulate between remote areas on earth, they created specific conditions very favourable to artificial spreading of insect pests, which sometimes led to a substantial increase of their distribution, or produced invasions in new habitats. The first occurrences of insect spreading on long distances concerned commensal or medical species associated with humans or their pets, and their stored food products, dried meat and plants. As long as the means of transport were restricted to draught animals, or to inland or maritime navigation, the volume, speed, and quality of the international exchanges were still limited, as well as the numbers of insect pests transported. From the nineteenth century, exchanges of animal and plant materials increased simultaneously with a higher availability of more diversified and intensified means of transport. Industrialization and the increase in trade with the western hemisphere created new pathways to importation and expansion of insect pest populations. Some of these species are now more or less cosmopolitan. The development of exotic plant production outside their native area also increased the potential of some pests to develop in new habitats or under different climates.

A high proportion of the insects circulating passively are Coleoptera Cerambycidae. DUFFY (1953) made a first summary of the new introductions, importations, and establishments of exotic pests into the British Islands, but his work is also valid for other European countries. BRUSTEL *et al.* (2002) reported a few examples of interceptions and introductions in France, but it seems that more than 250 species of exotic cerambycids were involved in passive movements within a particular country, and/or within Europe.

DUFFY's work (1953) is a solid basis for the study of the exotic cerambycids that were imported in Europe. Additional publications by the same author (DUFFY, 1957, 1963, 1968, 1980) completed the initial work, and this work as a whole shows that, 50 years ago, the importations of cerambycids were already considered as serious threats to agriculture and to various forest ecosystems.

The aim of this note is to inventory and make a presentation of the new national records of interceptions since last 20 years, and to update the informations related to well-known introductions in Europe.

NEW NATIONAL INTERCEPTIONS AND INTRODUCTIONS OF LONGHORNED BEETLES IN EUROPE

Bardistus cibarius (Newman, 1841)

(Cerambycinae, Phlyctaenodini) (Bardee) (Fig. I, 1)

New interception record – Many living adults of *B. cibarius* were collected in early July, 2002 by F. Blanchon in the nursery of the botanical garden «Jardin du Conservatoire du Littoral» at Rayol-Canadel-sur-Mer (Var, France). These specimens emerged from Black Boy plants (*Xanthorrhoea* sp., Xanthorrhoeaceae), a grass tree, or balga grass, imported from Australia and initially planted in 1999 in the nursery. On the day of collection, a high population of the pest was found; it led to subsequent decline and death of the trees.

Origin – The insect is native to Western Australia. It is known to be consumed as larvae by Australian aborigines who call it «Bardee» (TILLYARD, 1926; DUFFY, 1953; IRVINE, 1989).

Biology, Hosts plants – B. cibarius is specific to Xanthorrhoeaceae (TILLYARD, 1926; DUFFY, 1963; HAWKESWOOD, 1993).

Comments and risks – Several generations developed on the Black Boy plants at Rayol-Canadel-sur-Mer, which led to the gradual decline of the trees. By eliminating the attacked host plants, the pest was eradicated. Given its very narrow range of host plants, this insect is not a serious threat to Europe except for the rare Xanthorrhoeaceae grown in a few garden in south of France. In case of new introduction, the risk of establishment of this insect is very low.

Batocera rufomaculata (Degeer, 1775)

(Lamiinae, Batocerini) (The Mango Tree Borer or Violin) (Fig. I, 2)

New interception record – For several years, a population of this species has been developing on a fig tree within the enclosure of the orang-outangs in the zoo of Munster (Germany) (K. Adlbauer, pers. com.; C. Weimann, pers. com.). The country of origin of the fig tree is not known.

Origin – B. rufomaculata is widely distributed in the Far East (China, the Andaman Islands, Myanmar, Ceylon, India, Malaysia, the Seychelles, Pakistan) and it established many years ago in most islands of the Indian Ocean (Madagascar,

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Réunion, Mauritius, the Maldives ...), in the Pacific ocean (the Solomon Islands), and in the West Indies (DUFFY, 1953, 1968; BALACHOWSKY, 1962; MARTINEZ, 1989).

Biology, Hosts plants – *B. rufomaculata* is very polyphagous on deciduous trees and it is a serious pest for nurseries, ornementals and fig trees (BEESON & BHATIA, 1939; DUFFY, 1953, 1968; BALACHOWSKY, 1962; BEN YEHUDA *et al.*, 2000).

Comments and risks – In 1933, this species was intercepted in England in wood imported from the Andaman Islands, and in 1983, it was intercepted in West Sussex in wood imported from India. Its establishment in southern Europe could be possible as it is already spreading through the eastern Mediterranean area. It occurs in Syria, Lebanon, Israel, Palestine and Turkey (BALACHOWSKY, 1962; DUFFY, 1968; SEYMOUR *et al.*, 1985; MARTINEZ, 1989; TAUZIN, 1989; TOZLU & ÖZBEK, 2000).

Chlorophorus annularis (Fabricius, 1787)
(Cerambycinae, Clytini)
(Bamboo Borer, or Tiger Bamboo Longhorn Beetle) (Fig. I, 3)

New interception record – On August 20th, 2004, three specimens of *C. annularis* emerged at Mesquiers (Loire-Atlantique, France) from a bamboo made piece of furniture imported from Vietnam.

Origin – India, Cambodia, Malaysia, New Guinea, China, Japan, Thailand, Ceylon (Sri Lanka), Myanmar, Vietnam, Taiwan, Laos (GAHAN, 1906; PASCOE, 1864; GRESSITT, 1942; DUFFY, 1953; GRESSITT *et al.* 1970).

Biology, Hosts plants – Harmfulness of *C. annularis* may be negligible and must concern only bamboo made objects (made of *Bambusa* spp., or *Dendrocalamus* spp.) (Poaceae) as it develops only in declining plants and finishes its development cycle in manufactured goods. However, the polyphagy of *C. annularis* concerns the following host plants: *Citrus* sp. (Rutaceae), *Dipterocarpus* sp. (Dipterocarpaceae), *Gossypium* sp. (Malvaceae), *Liquidambar* sp. (Hamamelidaceae), *Pyrus* sp. (Rosaceae), *Shorea* sp. (Dipterocarpaceae), *Spondias* sp. (Anacardiaceae), *Tectona* sp. (Verbenaceae), *Vitis* sp. (Vitaceae) (BEESON & BHATIA, 1939; GRESSITT, 1942; DUFFY, 1953; BALACHOWSKY, 1963; GRESSITT *et al.*, 1970).

Comments and risks – Interceptions of *C. annularis* were not rare in Europe and they were always tied to the importation of bamboo-made articles. *C. annularis* was often mentioned in Germany, in 1974 in Denmark (M. Christensen, pers. com.), in the Bristish Islands at Buckenham Wood (Lingwood E. Norwich) (M. Rejzek, pers. com.), the Czech Republic, Finland, Austria, and Rumania (SAALAS, 1940; FISHER, 1942; HEYROVSKÝ, 1951, 1965; DUFFY, 1953; FRANZ, 1959; HARDE, 1959; SCHMIDT, 1962; ELBERT, 1969; HORION, 1974; WEIDNER, 1967, 1982; HEYROVSKÝ & SLÁMA, 1992; SCHILLHAMMER, 1994; STEINER, 1997, 1999, 2003; ADLBAUER, 2001; NIEHUIS, 2001; STOCK, 2001). These repeated interceptions did not lead to temporary introductions, with one exception, a specimen found at Sant-Cugat-del-Vallès (Barcelona) within a park of the city, on flowers next to bamboos (VIVES, 1995). The establishment of *C. annularis* in Europe could be possible in isolated sites within the Mediterranean area.

Dialeges undulatus Gahan, 1891
(Cerambycinae, Cerambycini) (Fig. I, 4)

New interception record – On September 20th, 2004 one specimen was found in the quarantine facility of the harbour at Marseille (Bouches-du-Rhône, France) by officers of the Regional Plant Protection Service. This insect was trapped behind the plastic film wrapping a bundle of coco fibers on a pallet imported from Sri-Lanka. The insect emerged either from the pallet or it was caught during packaging of the goods.

Origin – *D. undulatus* originates from the Far East, in China (Hainan), Myanmar, Thailand, Laos, Indonesia (Java), Ceylon (GAHAN, 1906; BEESON & BATHIA, 1939; DUFFY, 1968; GRESSITT *et al.* 1970).

Biology, Hosts plants – The ecology and the biology of *D. undulatus* are not well known. It was reported from the following host plants: *Actinophora* sp. (Tiliaceae), *Berrya cordyfolia* (Willd.) Burret (= *ammonilla* Roxb.) (Malvaceae), *Prunus cerasoides* D. Don. (= *puddum* (Kingdon-Ward.)) (Rosaceae), *Pyrus* sp. (Rosacaea) and *Xylia dolabriformis* Benth. (Fabaceae). Other *Dialeges* Pascoe, 1856 are polyphagous on trees, shrubs, and lianae from various families (Dipterocarpaceae, Fabaceae...) including *Wistaria* sp. (Fabaceae). *D. undulatus* seems to prefer branches previously killed by a buprestid. Its development cycle lasts 1 or 2 years (BEESON & BATHIA, 1939; DUFFY, 1968; GRESSITT *et al.* 1970).

Comments and risks – Interception of *D. undulatus* within the quarantine facility means that it won't spread and establish in the surrounding habitats. Its oriental origin is also incompatible with european etablishment.

Dissaporus cachani Lepesme & Breuning, 1956
(Cerambycinae, Cerambycini) (Fig. I, 5)

New interception record – On June 2d, 2001, one specimen of *D. cachani* was caught by P. Tauzin on the slopes of Mount Ossa (Larisa) in Greece.

Origin – *D. cachani* originates from Africa (Cameroon, Ivory-Coast, Ghana, Togo, Sudan (K. Adlbauer, pers. com.; J. Sudre pers. com.).

Biology, Hosts plants – Nothing is known about the ecology of *D. cachani* [*D. dilatatus* (Chevrolat, 1856), a close species, lives on *Morus* sp. (Moraceae) (DUFFY, 1980)].

Comments and risks – No explanation can be given about the abnormal presence of *D. undulatus* on the slopes of Mount Ossa. This capture could be the result of a small local infestation.

Eburia quadrimaculata (Linné, 1767)
(Cerambycinae, Eburiini) (Fig. I, 6)

New interception record – In October 2002, one specimen of *E. quadrimaculata* emerged at Quillan (Aude, France) from a bamboo-made stand containing small flasks of spices imported from Martinique (T. Noblecourt leg.).

Origin – *Eburia* Lepeletier & Audinet-Serville, 1830 is not known from Martinique but it is known from Guadeloupe (D. Heffern, pers. com.). Its current distribution covers a few Caribbean Islands, Cuba, Puerto Rico (Mona Island), the Virgin Islands (Tortola, Saint-Thomas). Within the French Antilles, it was mentioned once in Guadeloupe. *E. quadrimaculata* is fairly rare and not widely distributed. In 1975, it was not known from Cuba yet, and it is not known from Jamaica (CHEMSAK, 1966; ZAYAS, 1975; VILLIERS, 1980; MONNÉ & HOVORE, 2001; VITALI & REZBANYAI-RESER, 2003; CHALUMEAU & TOUROULT, 2005).

Biology, Hosts plants – The ecology of *E. quadrimaculata* is not well known. The adult has a nocturnal activity. Very likely, as many *Eburia*, it may be very polyphagous in dying or decaying wood. Its development cycle and damage are similar to those of *Stromatium* Audinet-Serville, 1834.

Comments and risks – One cannot assert that *E. quadrimaculata* is new for Martinique since the real origin of the bamboo it emerged from is uncertain. The remaining doubt concerning a confusion or synonymy with *E. binodosa*

(Gahan, 1895) (GAHAN, 1895) was solved by MONNÉ & HOVORE, (2001). The spread of *E. quadrimaculata* seems to be tied to the artificial distribution of its host plant. However, the risk of a long-lasting establishment of *E. quadrimaculata* in Europe is unlikely.

Elaphidion mucronatum (Say, 1823)
(Cerambycinae, Elaphidiini) (Spined Oak Borer) (Fig. I, 7)

New interception record – On July 27th, 1992 one specimen of *E. mucronatum* was caught on a flower at San-Fernando, Cadix province (Andalusia, Spain) (A. Verdugo leg.).

Origin – *E. mucronatum* is native to the U.S.A. (LINSLEY, 1963).

Biology, Hosts plants – *E. mucronatum* is very polyphagous and lives in dying or dead branches of many deciduous trees, oaks, hackberries, beech trees, maple trees... The insect develops in 2 years. It is crepuscular and nocturnal; its diurnal occurrence on a flower was unusual (DUFFY, 1953; LINSLEY, 1963).

Comments and risks – This species was introduced occasionally in the British Islands in wood imported from North America (DUFFY, 1953). *E. mucronatum* was discovered 15 km away from Cadix, and very likely, its introduction pathway can be associated with the intensive traffic of goods in the Cadix harbour. It is not known if the found specimen was imported itself, or if it is an individual belonging to a small pioneer population established locally. Given the particular climate of Andalusia, the establishment of *E. mucronatum* is possible in that area. Some monitoring is recommended to determine the status of the pest in this region. *E. mucronatum* can also be a pest in timber and wooden furniture.

Frea marmorata Gerstaecker, 1871
(Lamiinae, Crossotini) (Fig. I, 8)

New interception record – On June 20th, 1985 three specimens of *F. marmorata* and one specimen of *Niphona picticornis* Mulsant, 1839 were found by R. Zange in Dubrovnik (Croatia) (S. Steiner, pers. com.).

Origin – *F. marmorata* is known from Eastern Africa (Kenya, Malawi, Tanzania and Zimbabwe) (BREUNING, 1942; DUFFY, 1957; SUDRE & TÉOCCHI, 2002).

Biology, Hosts plants – *F. marmorata* was mentioned as a pest on the coffee tree, *Coffea arabica* L. (Rubiaceae) (BREUNING, 1942; VAYSSIÈRE, 1955; DUFFY, 1957).

Comments and risks – The discovery and presence of 3 specimens of *F. marmorata* simultaneously in the Croatian port is still an enigma. Very likely, the pest has no chance to establish in Europe.

Mimectatina meridiana (Matsushita, 1933)
(Lamiinae, Rhodopinini) (Fig. I, 9)

New interception record – In late 2001, several specimens of *M. meridiana* were found as debris in a container of *Cycas* fruits, and in 2002 three adults emerged from *Cycas* fruits imported from Japan (R. Germain leg.). The discovery was made at La Ménitré, near Angers (Maine-et-Loire, France) by a nurseryman. The infested fruits were imported from Naze (Amami-Oshima Island) in the Ryukyu archipelago.

Origin – *M. meridiana* is native to the southern islands of the Ryukyu archipelago (BREUNING & VILLIERS, 1973; BREUNING, 1975; OHBAYASHI *et al.*, 1992).

Biology, Hosts plants – The specimens found at La Ménitré were developing within the endocarp of *Cycas* fruits but they did not seem to damage the mesocarp or to affect the germinative capacities of the seeds. This observation matches up the known elements of the biology of the insect. *M. meridiana* can attack other tender parts of *Cycas revoluta* Thunb. (Cycadaceae), and can also attack other host plants as fig trees and mulberry trees (KOIKE, 1971; KATO, 2001).

Comments and risks – *M. meridiana* is not a quarantine species, and the probability of its establishment in Europe is low, although not totally impossible, at least within the Mediterranean and the Atlantic areas.

Monochamus alternatus Hope, 1842
(Lamiinae, Monochamini)
(Japanese Pine Sawyer or Rusty Pine Longhorn Beetle) (Fig. II, 1)

New interception record – One specimen was discovered at Guenthersdort (Saxonia-Anhalt, Germany) in the building site of a supermarket (B. Altschner leg.). It emerged from wooden packing material containing stones imported from China. Several exit holes were noticed before the wooden material was destroyed. The discovery of the pest was communicated to the Plant Protection authorities (EPPO/OEPP, 2003).

Original Distribution – *M. alternatus* is native to South Eastern Asia, China, Hong-Kong, Formose, Laos, Vietnam, Japan (DUFFY, 1968; GRESSITT *et al.*, 1970).

Biology, Hosts plants – *M. alternatus* basically lives on conifers (*Abies* spp., *Cedrus* spp., *Cunninghamia sinensis* Br. R., *Larix* spp., *Picea* spp. and *Pinus* spp.), and on *Liquidambar* sp. (Hamamelidaceae) (DUFFY, 1968; TOGASHI, 2002).

Comments and risks – Potentially, *M. alternatus* is a serious pest of many forests and plantations of conifers. As a quarantine species and a major vector of the pinewood nematode, *Bursaphelencus xylophilus* Steiner & Buhrer, 1934 (Aphelenchoididae), *M. alternatus* is a serious threat for the European forests of conifers. It was intercepted in Irish ports. In Czech Republic, it was obtained from wood imported from China, and it was collected in a factory importing plywood from Iran. The pest could establish in many regions of Europe and in France on many conifers including Cupressaceae (STEINER & BUHRER, 1934; HEYROVSKÝ, 1965; DUFFY, 1968; ASHE *et al.*, 2002; HEYROVSKÝ & SLÁMA, 1992). In 1999, *B. xylophilus* was accidentally introduced in Portugal; very strict control measures were used to eradicate the pest and to avoid its spread throughout other countries of the European Community (EVANS *et al.*, 1996; SOUSA *et al.*, 2002). Many species of the *Monochamus* genus were intercepted in U.K. but *M. alternatus* was not among them (DUFFY, 1953).

Monochamus rosenmuelleri (Cederhjelm, 1798)
(Lamiinae, Monochamini) (Pine Sawyer) (Fig. II, 2)

New interception record – On May 2nd, 2006 one specimen of *M. rosenmuelleri* was found at Åseda (Småland, Sweden) by R. Karlsonn (B. Gustafsson, pers. com.)

Origin – *M. rosenmuelleri* is native to a large area from European part of Russia to Siberia and Sakhalin, northern China and Mongolia, Korean Peninsula and Japan (SAMA, 2002).

Biology, Hosts plants – *M. rosenmuelleri* mainly attacks conifers but it can also develop successfully in aspen and birch tree (YANOVSKII & BARANCHIKOV, 1999).

Comments and risks – Earlier interceptions or introductions of *M. rosenmuelleri* were mentioned in Czech Republic, Hungary, and Austria. Several times, it was intercepted in U.K. in wood imported from Scandinavia, at Hamburg (Germany) (as *M. quadrimaculatus* Motschulsky, 1845), and in 1973 in Bulgaria (DUFFY, 1953; TSANKOV, 1975; WEIDNER, 1982; KOVACS & HEGYESSY, 1992; HOLZSCHUH, 1995; ŠEFROVÁ & LAŠTŮVKA, 2005). Like all

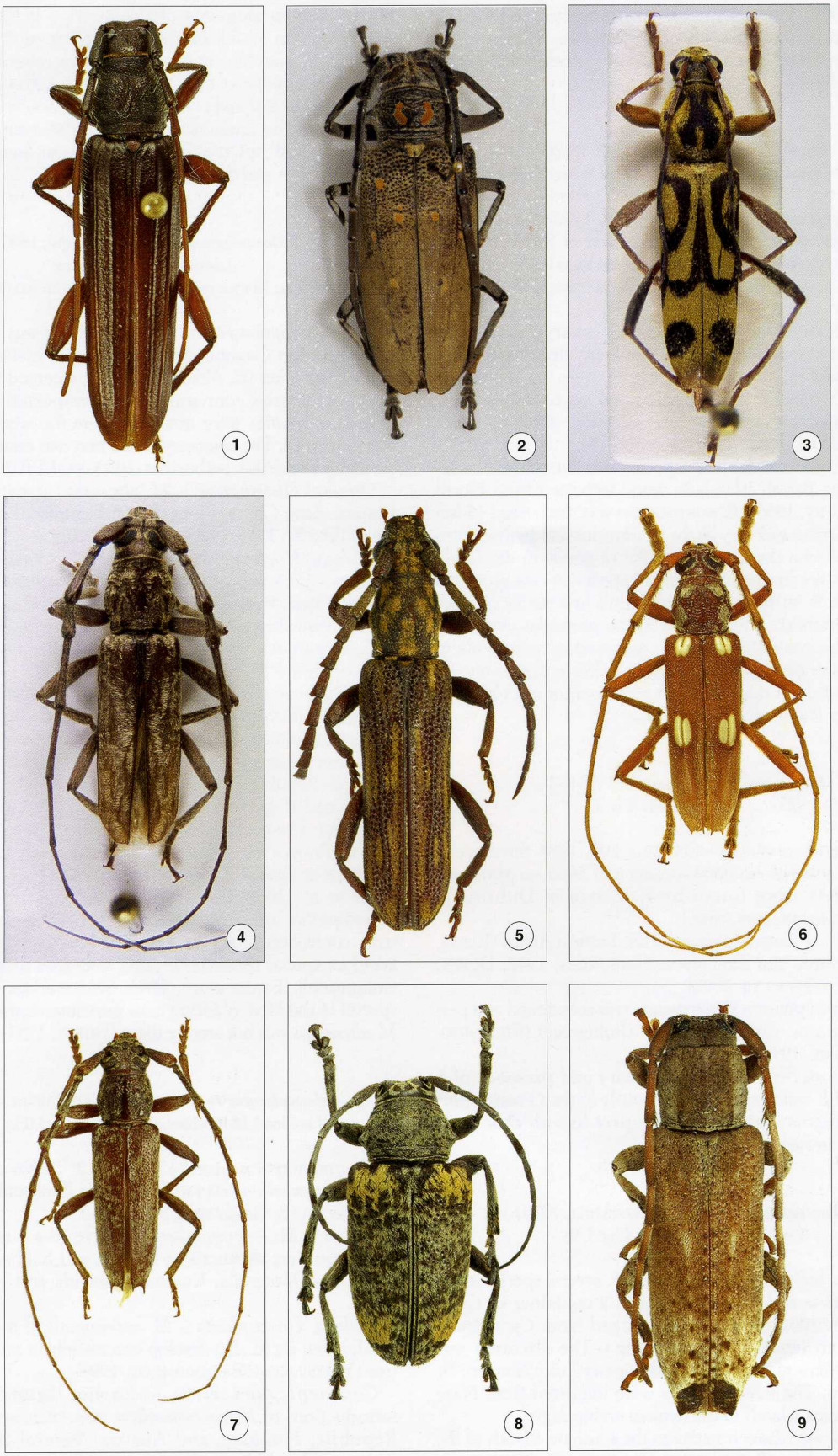

Fig. I - *Bardistus cibarius* (1), *Batocera rufomaculata* (2), *Chlorophorus annularis* (3), *Dialeges undulatus* (4), *Dissaporus cachani* (5), *Eburia quadrimaculata* (6), *Elaphidion mucronatum* (7), *Frea marmorata* (8), *Mimectatina meridiana* (9).

other *Monochamus* species originating from an area outside the European Community, *M. rosemuelleri* is a quarantine species. Sweden authorities were alerted to make sure that no infestation by this pest was developing in that country. *M. rosenmuelleri* is a synonym of *M. urussovii* Fischer, 1806. However, some authors consider it as a form of *M. sartor* (Fabricius, 1787) because of their similarity in terms of genetics and karyotype (CESARI *et al.*, 2004). In contrast, P. Svacha (SAMA, 2002) thinks that *M. rosenmuelleri* is a valid species, clearly distinct from *M. sartor*.

Niphona hookeri Gahan, 1900
(Lamiinae, Pteropliini)
(Tawny Brown Bamboo Longhorn Beetle) (Fig. II, 3)

New interception record – On March 15th, 2006, one specimen of *N. hookeri* was intercepted at Luleå, Sweden (Collection S. Lundberg). It emerged from a *Cissus* sp. plant (Vitaceae) (S. Lennartsson, pers. com.). Another specimen found in the collection of the Natural History Museum in Stockholm, originates from Arvidsjaur (Sweden) where it emerged in 1990 from a bamboo (S. Lennartsson, pers. com.).

Original Distribution – *N. hookeri* is native to southern and eastern Asia (India, the Andaman Islands, China, Laos, Myanmar, Hong Kong) (BEESON & BHATIA, 1939; GRESSITT, 1942; DUFFY, 1953, 1968; GRESSITT *et al.*, 1970).

Biology, Hosts plants – *N. hookeri* is considered as a pest of bamboos but the adults can also consume leaves and tender bark of *Citrus* spp. (Rutaceae). Its biology is not well known. The insect develops one generation a year. The adults show a nocturnal activity and feed upon tender bark of various trees and shrubs. The larvae consume dry bamboos (BEESON & BHATIA, 1939; GRESSITT, 1942; DUFFY, 1953, 1968; GRESSITT *et al.*, 1970; HAOJIE *et al.*, 1998).

Comments and risks – Several times *N. hookeri* was intercepted in U.K. (DUFFY, 1953, 1968). Because of its particular climatic requirements, its establishment in Europe seems to be unlikely. *N. furcata* (Bates, 1873), which also lives in bamboo was intercepted in Germany (BRANDT, 1957).

Pachydissus sericus Newman, 1838
(Cerambycinae, Cerambycini)
(Silvery Longicorn or Silvery Brown Longicorn) (Fig. II, 4)

New interception record – On July 6th, 1994 one mutilated but living specimen of *P. sericus* was found at Volvic (Puy-de-Dôme, France), in the city centre, under lamp posts.

Origin – *P. sericus* is endemic to Australia (DUFFY, 1963; HAWKESWOOD, 1987, 1993).

Biology, Hosts plants – *P. sericus* develops in various Mimosaceae (*Acacia* spp.), Myrtaceae (including *Eucalyptus siderophloia* F. Muell., *E. leucoxylon* F. Muell. and *E. crebra* F. Muell.), Proteaceae and Meliaceae, but it has a strong preference for dying or dead branches of *Acacia longifolia* (A. Willdenow) (DUFFY, 1963; HAWKESWOOD, 1987, 1993).

Comments and risks – The establishment of *P. sericus* would be possible in Europe where *Eucalyptus* spp. are grown, following the establishment of various *Phoracantha* spp. occurring already in the Mediterranean area. The presence of *P. sericus* in Volvic is still an enigma.

Stromatium longicorne Newman, 1842
(Cerambycinae, Hesperophanini) (Fig. II, 5)

New interception record – In July 1996, at La Ciotat (Bouches-du-Rhône, France), a specimen of *S. longicorne* emerged from a piece of furniture the wood and the origin of which are unknown (A. Chaminade leg.). It is also believed that this species is responsible for heavy damage to floorboards imported in the Toulouse area (Haute-Garonne, France) (L. Valladares pers. com.).

Origin – Assam, Myanmar, Southeastern Asia, the Malay archipelago, Philippines, Hainan (Southern China), Taiwan, Laos, Thailand, Loochoo Island in the Ryukyu archipelago (Japan), the Bonin Islands (Japan), Borneo, Sulawaisi (Indonesia), Ceram and Ambon Islands in the Maluku archipelago (Indonesia), Bacan Island, Malaysia, Java, New Guinea, Sumatra, and Australia where it was accidentally introduced (GAHAN, 1906; DUFFY, 1963, 1968; GRESSITT *et al.*, 1970).

Biology, Hosts plants – *S. longicorne* develops in dead wood, and timber of *Anogeissus acuminata* Wall. (Combretaceae), *Cupressus* sp. (Cupressaceae), *Irvingia harmandiana* Pierre (Irvingiaceae), *Shorea* sp. (Dipterocarpaceae). Its development cycle lasts at least 3 years (DUFFY, 1963, 1968; GRESSITT *et al.*, 1970).

Comments and risks – *S. longicorne* was previously intercepted in the British Islands, at Glasgow and London from goods imported from the Far East (DUFFY, 1953). As its larvae live in dry wood and need several years to develop, the adults can emerge from pieces of furniture several years after they were manufactured and imported. It is not known if *S.longicorne* could establish on the long term in southern Europe. It could develop in storage sites of wooden made products, or in timber, and it could show damage to goods several years after their importation.

Stromatium barbatum (Fabricius, 1775) is a close-related species, which was intercepted repeatidly in Europe, in Spain, England, Scotland, and Finland (EMDEN, 1937, 1939, 1940; SAALAS, 1939; BEESON & BHATIA, 1939; DUFFY, 1953; VIVES, 1995).

Titoceres jaspideus Audinet Serville, 1835
(Lamiinae, Ceroplesini) (Fig. II, 6)

New interception record – One specimen of *T. jaspideus*, collected in July 1986, at Biars-sur-Cère (Lot, France), was found recently by P. Zagatti in G. Lempérière's collection.

Origin – *T. jaspideus* is native to eastern Africa and Sahel. It is present but rare from Sudan to Algeria, and it is fairly abundant in southern Morocco (in the former Spanish Sahara). It is also known from Abyssinia to the Transvaal (BREUNING, 1937; MATEU, 1972; DUFFY, 1980).

Biology, Hosts plants – *T. jaspideus* develops essentially in dying wood or freshly cut wood of *Acacia raddiana* Savi. (Mimosaceae) (MATEU, 1972; DUFFY, 1980).

Comments and risks – As the host trees of *T. jaspideus* are not much used for any woodwork, the insect is not highly subject to exportation, which makes its presence in the Lot department (France) even more incomprehensible. The interception of this species is an enigma unless the insect was accidentally caught in some crate used for the importation of goods from its original area.

Trichoferus campestris Faldermann, 1835
(Cerambycinae, Hesperophanini) (Fig. II, 7)

New interception record – In June 2002, about ten specimens of *T. campestris* emerged in the quarantine facility of Marseille harbour (Bouches-du-Rhône, France). They were found in timber of *Salix* sp. that was received in August 2001 from China and stored in the quarantine before being used to make wooden packaging material.

Origin – *T. campestris* is native to a vast area from Central Asia (Turkistan) through China, Korea, and Japan (GRESSITT, 1951).

Biology, Hosts plants – *T. campestris* develops in dry wood of many deciduous tree species. It consumes preferably dead or dying portions of trunks and branches (IWATA & YAMADA, 1990).

Comments and risks – *T. campestris* is a quarantine species in the U.S.A. and Canada where it was intercepted on several occasions. In 1997, it developed a small infestation in a storage site in New Brunswick (EPPO/OEPP, 2002b; APHIS, 2003). If *T. campestris* would establish in Europe, it would be a threat to biodiversity in forests, but it would be also a very serious threat to timber.

Urographis fasciatus (Degeer, 1775)
(Lamiinae, Acanthocinini) (Fig. II, 8)

New interception record – In June 1991, F. Ferrero caught 4 females of *U. fasciatus* at Rognac (Bouches-du-Rhône, France) (P. Berger pers. com.).

Origin – *U. fasciatus* is native to eastern U.S.A. (LINSLEY & CHEMSAK, 1995).

Biology, Hosts plants: – *U. fasciatus* develops in many deciduous trees: birch tree, hornbeam, chestnut tree, maple tree, beech tree, sweetgum, magnolia, walnut tree, black walnut, elm tree, pear tree, apple tree, sumac, lime tree (LINSLEY & CHEMSAK, 1995).

Comments and risks – The presence of *U. fasciatus* at Rognac (France) still remains unexplained. Some monitoring should be conducted locally to determine if an infestation by this pest is developing. Its establishment in France and elsewhere in Europe could happen; a risk analysis should be made to determine the threat it would represent ecologically and economically.

Xylotrechus grayii (White, 1855)
(Cerambycinae, Clytini) (Fig. II, 9)

New interception record – In March 2003, one damaged specimen of *X. grayii* was found in a piece of furniture imported from China. The exact locality of the discovery in the Paris region (France) is not known (H. -P. Aberlenc pers. com.).

Origin – *X. grayii* occurs in China, Formose, and in Japan, with 2 sub-species. It is also found in the Mariana Islands (DUFFY, 1968; OHBAYASHI *et al.*, 1992).

Biology, Hosts plants – *X. grayii* is polyphagous on *Coffea arabica* L. (Rubiaceae), *Paulonia tomentosa* Steud. (Scrophulariaceae) and *Tectona grandis* L. (Verbenaceae) (GRESSITT, 1951; DUFFY, 1968; OHBAYASHI *et al.*, 1992).

Comments and risks – In China, *X. grayii* is a pest of *Lonicera japonica* Thunb. (Caprifoliaceae), a honeysuckle used as trap plant around cotton fields, and in the U.S.A. it is a beneficial insect on the same host plant *L. japonica*, which is considered as an invasive weed in this region where it was introduced as an ornamental (TIAN *et al.* 1986; COOMBES 1991). In Europe, the risk of establishment of *X. grayii* as a pest seems to be low.

UPDATED INFORMATIONS

Anoplophora chinensis (Forster, 1771)
(Lamiinae, Lamiini) (Citrus Longhorned Beetle) (Fig. III, 1)

COCQUEMPOT & HÉRARD (2003) and COCQUEMPOT *et al.* (2003) presented a summary of the interceptions and introductions of *A. chinensis* in Europe. Some new data and literature review were given. A summary of the control and eradication measures was presented by HÉRARD *et al.* (2005).

- Austria: Interceptions were mentioned at Villach (STEINER, 1997; 1999; 2003) and at Klagenfurt (SCHMIDT & SCHMIDT, 1990).
- England: It was intercepted at Wrecclesham (Surrey) (SEYMOUR & KILBY, 1979), in Dorset (SEYMOUR *et al.*, 1986) and in 2005 and 2006, in Lancashire and in southern England in various lots of bonsais imported from Japan and China. According to the Department of Environment, Food and Rural Affairs, these interceptions are due to massive importations of bonsais (*Acer* spp.) from China (41,000 and 46,000 plants) (GNN, GOVERNMENT NEWS NETWORK, 2005; EPPO/OEPP, 2006b).
- France: It was not recovered during the years following the first finding in 2003 at Soyons (Ardèche, France); its eradication may have been successful.
- Germany: It was not recovered in this country since its first mentions in Berlin and Aachen (SCHMIDT & SCHMIDT, 1990).
- Italy: A specimen of *A. chinensis* was collected in 1994 by G. Veronese at Ciconicco near Udine in a nursery, which was closed recently; it was also found in P. Rapuzzi's collection (G. Sama pers. com.; P. Rapuzzi, pers. com.). The first known infestation of *A. chinensis* in Italy (COLOMBO & LIMONTA, 2001) is extent on about 100 km^2 around Parabiago (Italy) from Milan through Varese; it is now considered as irreversible. Obviously, the pest spreading is under control and eradication process is still in progress, but until now is not contained; living adults were found recently in high numbers in one park within Milan ((F. Hérard, pers. com.; M. Maspero, pers. com.; EPPO/OEPP, 2006a).
- The Netherlands: *A. chinensis* larvae were found in roots of bonsais in 1980 (ROSSEM *et al.*, 1981), and one adult specimen emerged in 2003 from a maple tree imported from Japan and planted in a private yard. Dutch authorities surveyed the concerned area to search for a possible ongoing infestation (VAN OPSTAL *in litteris*, 2003; EPPO/OEPP, 2004c); the survey was negative (EPPO/OEPP, 2006c).
- Poland: Very likely, the mention of *A. glabripennis* (Motschulsky, 1853) from a bonsai in Poland is an error; rather *A. chinensis* may have emerged from this plant material (BIAŁOOKI, 2003; EPPO/OEPP, 2004d).
- Switzerland: An introduction with imported bonsais (*Acer palmatum* Thunberg) was found recently in northern Switzerland (Argovia) (WERMELINGER, 2006).

A. chinensis is considered as one of the most damaging pests of *Citrus* spp. in China (GRESSITT, 1942; DUFFY, 1968). In Europe, *A. chinensis* represents a serious threat to ornamentals in urban sites, to orchards, and to forests of deciduous trees, especially in the Mediterranean area. Since its introduction in Italy, this invasive pest has made heavy damage to many ornamental trees and shrubs; its range of host plants appears to be very large (LINGAFELTER & HOEBEKE, 2002; COCQUEMPOT & HÉRARD, 2003; COCQUEMPOT *et al.*, 2003).

Anoplophora glabripennis (Motschulsky, 1853)
(Lamiinae, Lamiini) (Asian Longhorned Beetle) (Fig. III, 2)

An update of the interceptions and introductions of *A. glabripennis* in Europe was published (COCQUEMPOT & HÉRARD, 2003, COCQUEMPOT *et al.*, 2003).

- Austria: At Braunau, the eradication of the infestation was not achieved yet. The discovery of infested trees 4 km apart of the initial infestation suggests that the pest may have spread in hidden places and possibly got out of control (KREHAN, 2003).

- Czech Republic: *A. glabripennis* was found in North Moravia by O. Sabol (M. Rejzek pers. com.).
- France: At Gien (Loiret), the infestation discovered initially in 2003 is not controlled yet. A few adults of *A. glabripennis* and new infested trees were found again in 2006 (as reported in a local newspaper «*L'Éclaireur du Gâtinais*» of July 2006). The risk that a few adults flew to remote trees within the city, outside it, and even to the countryside is not negligible.
  At Saint-Anne-sur-Brivet (Loire-Atlantique) (JOURDAN, 2004; EPPO/OEPP, 2004e) the infestation is not under control yet. On October 2006, an adult flew from some unidentified tree and landed on a terrace where it was found dead. Habitats favorable to the development of *A. glabripennis* exist around Sainte-Anne-sur-Brivet, and the risk of spread of the pest outside the village is still fairly high.
- Germany: A first infestation by *A. glabripennis* was found at Neukirchen-am-Inn, near Passau (EPPO/OEPP, 2004a). An interception was reported in Mönchengladbach (EPPO/OEPP, 2004b), and at Roth, near Nuremberg (EPPO/OEPP, 2005). These interceptions followed a previous one, in 2001, in Saxony, on truck carrying granite stones imported from China through Bremen harbour (EPPO/OEPP, 2001), and another, in 2002, for several examples in a warehouse of chinese granite in Baden-Württemberg in which *A. glabripennis* have been seen previously in 1999 (Biologische Bundesanstalt für Land- und Forstwirtschaft, Warnhinweis, november, 6, 2002). In October 2005, a new infestation was discovered at Bornheim near Bonn (Northrhine-Westfalia) (P. TIEDE-ARLT, pers. com.).
- Poland: The adult of *A. glabripennis* (BIAŁOOKI, 2003; EPPO/OEPP, 2004d) which emerged from a bonsai in Sopot (Pomerania) may have been misidentified; very likely the insect was *A. chinensis*.
- United-Kingdom: *A. glabripennis* was intercepted in England and in Wales (COOTER, 1999, 2000; LEWIS, 1999). A suspicion of establishment of the pest was announced by the Forest services, as a following to several captures of adults, or the observation of living specimens near factories (WRIGHT, 2000).

Callidiellum rufipenne (Motschulsky, 1860)
(Cerambycinae, Callidiini)
(Japanese Cedar Longhorn Beetle) (Fig. III, 3)

- Denmark: *C. rufipenne* was intercepted once (GUSTAFSSON, 2006).
- France: A literature review permitted to find an old mention of this insect, with no details, at Nice (Alpes-Maritimes), after a note by M. Pic dated 1906 (PLAVILSTSHIKOV, 1934; CAMPADELLI & SAMA, 1989a). No new mention confirmed the eventual introduction or establishment of *C. rufipenne* in France (although no targeted search in the field was made). The absence of a new fortuitous discovery means that, if the species remained, it was very discreet.
- Italy: *C. rufipenne* was introduced accidentally in Italy (CAMPADELLI & SAMA, 1989a, 1989b; PELLIZZARI & DALLA MONTÀ, 1997).
- Spain: *C. rufipenne* was found on *Cupressus macrocarpa* Hartw. (Cupressaceae) on the Cantabrian coast and in the Basque country (BAHILLO & ITURRONDOBEITIA, 1995, 1996; VIVES, 1995).

C. rufipenne is native to Southeastern Asia (China, Korea, Taiwan, Japan) (EPPO/OEPP, 2002a). It was introduced and established in the U.S.A., Canada, and Argentina (TURIENZO, 2006). Potentially, it can adapt to the European climate and it can develop on Cupressaceae: *Chamaecyparis* spp., *Cupressus* spp., *Juniperus* spp., *Thuja* spp. and on Pinaceae: *Abies* spp., *Cryptomeria* spp. (GRESSITT, 1951; EPPO/OEPP, 2002a).

Cordylomera spinicornis (Fabricius, 1775)
[= *torrida* (Olivier, 1795)] (Cerambycinae, Phoracanthini) (Fig. III, 4)

- Czech Republic: Several interceptions of *C. spinicornis* were mentioned in the Czech Republic (HEYROVSKÝ, 1965; HEYROVSKÝ & SLÁMA, 1992).
- France: On August 20th, 1926 a specimen was caught in Paris, on a balcony of the Péreire boulevard (HARDY, 1926). RAHOLA (2005) mentioned a capture of *C. spinicornis* dated 1977 in Sète (Hérault) harbour.
- Germany: Several times, *C. spinicornis* was observed in Germany (COLA, 1973; WEIDNER, 1982).
- Ireland: Several interceptions of *C. spinicornis* were mentioned in Ireland (O'CONNOR & NASH, 1979; SPEIGHT, 1988).
- Italy: One interception of *C. spinicornis* was mentioned in Italy (RATTI, 1990).
- Malta: *C. spinicornis* was seen in Malta (SCHEMBRI, 1975; SCHEMBRI & SAMA, 1986).
- Spain: The presence of *C. spinicornis* was reported several times in Spain (GONZÁLEZ PEÑA, 1995, 2002; VIVES, 1995; LENCINA-GUTIÉRREZ *et al.*, 2004).
- Sweden: Several interceptions of *C. spinicornis* were mentioned in Sweden (BRINCK, 1953; HEQVIST, 1955).
- United-Kingdom: *C. spinicornis* was reported several times in U.K. (FRASER, 1949; DUFFY, 1953).

C. torrida (Olivier, 1795) must stay a synonym of *C. spinicornis* (Fabricius, 1775). According G. Sama (pers. com.), the primary homonymy with *Elaphidion spinicorne* (Drury, 1773), denounced by VITALI & REZBANYAI-RESER (2003) is not valid. Some data on *C. spinicornis* distribution and ecology are given by DUFFY (1957, 1980).

Philematium currori (White, 1853)
(Cerambycinae, Callichromatini) (Fig. III, 5)

- Italy: K. Adlbauer identified as *P. currori* the specimen imported from Ivory Coast and found in Venice harbour (RATTI, 1990). *P. currori* is a polyphagous species native to Ethiopia, the Congo and Uganda (DUFFY, 1957, 1980; ADLBAUER *et al.*, 2006).

Phoracantha recurva Newman, 1840
(Cerambycinae, Phoracanthini)
(Eucalyptus Longhorned Borer) (Fig. III, 6)

CADAHIA (1980, 1986) considered that this species established in southern Europe during the eighties.
- France: According OROUSSET (2000), *P. recurva* could occur already in France and may be discovered soon.
- Greece: *P. recurva* was found in Greece (ČERNÝ, 2002; COCQUEMPOT & SAMA, 2004).
- Italy: *P. recurva* was found in Italy (SAMA & BOCCHINI, 2003; PALMERI & CAMPOLO, 2006; MAZZEO & SISCARO, 2007).
- Malta: *P. recurva* was found in Malta (MIFSUD, 2002).
- Spain: *P. recurva* was found in southern Spain, in Seville, Cadiz, following a prior mention in Ceuta (North Africa) (BERCEDO & BAHILLO, 1998, 1999; RUIZ & BARRANCO, 1998; VERDUGO, 1999, 2000; VERDUGO & LOPEZ, 2001; BARREDA & NAVARRO, 2002; ÁLVAREZ PÉREZ, 2004); now, the pest occurs in the Aragon region (MURRIA BELTRÁN & MURRIA BELTRÁN, 2006).

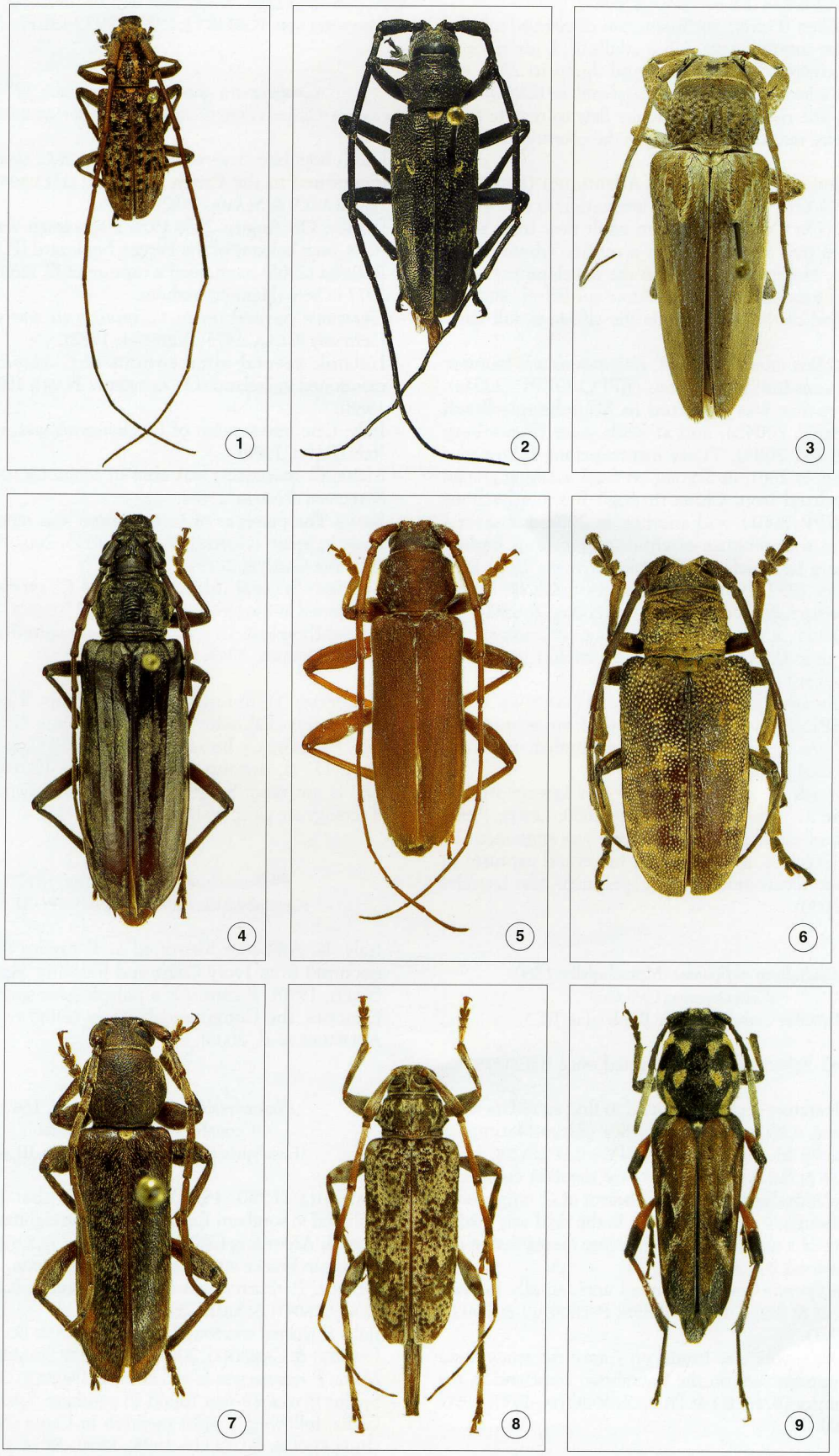

Fig. II - *Monochamus alternatus* (1), *Monochamus rosenmuelleri* (2), *Niphona hookeri* (3), *Pachydissus sericus* (4), *Stromatium longicorne* (5), *Titoceres jaspideus* (6), *Trichoferus campestris* (7), *Urographis fasciatus* (8), *Xylotrechus grayii* (9).