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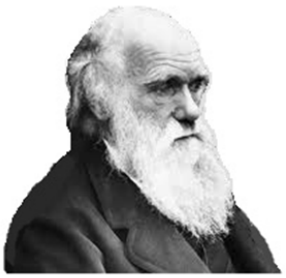

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Nomenclatural changes in the genus *Xylothrips* Lesne, 1901 (Coleoptera, Bostrichidae, Xyloperthini)

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ABSTRACT

The paper contains informations on the descriptions and analyse of various authors' opinions as to the ocurrence and systematic position of species belonging to the genus *Xylothrips*. As the result of the analysis *Calophagus* has been downgraded to a subgenus of *Xylothrips* – *Xylothrips* (*Calophagus*) n. comb. – and *Xylothrips geffroyi* (n. syn.) synonymized with *X. religiosus*. At the end a key to the identification of all known species of *Xylothrips* is presented, together with a catalogue and maps showing the geographical distribution of particular species.

***Keywords*:** Coleoptera, Bostrichidae, *Xylothrips*, *Calophagus*, new synonym, new combination, geographical distribution, identification keys

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1. INTRODUCTION

According to the world catalogue of the Bostrichidae (Borowski & Węgrzynowicz 2007), the genus *Xylothrips* Lesne includes 4 species: *X. cathaicus* Reichardt ocurring in China, Korea and Japan, *X. flavipes* (Illiger) known from almost the entire Oriental Region, *X. religiosus* (Boisduval) characteristic of Melanesia, and *X. geoffroyi* (Montrouzier) hitherto known only from the Art Island near New Caledonia.

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The results presented below have been based on many years of studies on imaginal morphology, systematic position and geographical distribution of particular species of this group of beetles.

2. MATERIALS

Relevant material from most European museums and scientific institutions have been examined, supplemented by that from private collections of mainly European entomologists, as well as specimens or personal information received from Colleagues working in America and Asia.

3. RESULTS

P. Lesne's viewpoint

The genus *Xylothrips* was described by the eminent specialist of the Bostrichidae, French entomologist Pierre Lesne in the fourth (containing informations on the respective tribe Xyloperthini) part of his world revision of the family (Lesne 1901). Only two species – *X. flavipes* and *X. religiosus* – have been included in the key, but at the end of the section devoted to the genus the author gives additionally informations on the third: „*Xylothrips* (?) *Geoffroyi*". The question mark apparently points to his uncertainty as to whether the species *Apate Geoffroyi* described by Montrouzier in 1861 really belongs to *Xylothrips*, what suggests that Lesne did not see the type specimens. In the few sentences long description, listing the characters used in Montrouzier's (1861) diagnosis, he points out that it is too brief to allow correct generic assignation. In his world catalogue of the Bostrichidae (1938), Lesne mentions 3 species of *Xylothrips*, including *X. geoffroyi*.

In the revision of Palaearctic Bostrichidae (Lesne 1902), the author described a new, monospecific genus of Xyloperthini: *Calophagus*, with a new species *C. pekinensis*, based on 5 (not one, *contra* Park *et al.* 2015) specimens collected in northern China (environments of Pekin). According to Lesne's diagnosis *Calophagus* is closely related to *Xylothrips*, but differs mostly in larger body size, lack of lateral carina of pronotum, and characteristic pubescence of antennal club.

H. Reichardt's viewpoint

In 1966 Reichardt described one more species of *Xylothrips*, *X. cathaicus*, based on 5 female specimens collected in two Chinese provinces: Hebei (= Hopeh) and Henan (= Honan, Honana). He expresses doubts as to the validity of *X. geoffroyi* and omits it in the key.

Faunistic informations of Chen, Iwata & Kusakabe, and Borowski & Węgrzynowicz

In 1990 Chinese entomologist Chen described males of *X. cathaicus* based on 4 specimens collected in Pekin, and in 2002 Iwata & Kusakabe reported *X. cathaicus*, as new for Japan, from Tsushima Islands. Six years later Borowski & Węgrzynowicz (2008), unaware of Iwata & Kusakabe's publication, consider another specimen from Tsushima Islands as new for Japan.

L-Y. Liu's viewpoint

In 2010 Liu published a faunistic paper on the Bostrichidae. It is an "odd" publication in many (mainly faunistic) aspects, and the data on some species rise serious – to say it mildly – doubts[1]. Liu mentions *X. geoffroyi* from Australia (1 ex.) and Papua New Guinea (19 ex.). Having examined the respective specimens we found that they belong, in fact, to *X. religiosus*. Maybe the Author has incorrectly recognized the sex of *Xylothrips* species, what could have led to misinterpretation and misidentification.

It is quite probable that also Montrouzier made similar mistake, and – having before him a specimen of a sex different from Boisduval's type of *X. religiosus* – described it as a new species, *X. geoffroyi*. Interestingly, Montrouzier claims that *X. geoffroyi* is common in forests, whereas several (also Polish) expeditions to New Caledonia have ascertained that the species frequently occurring there is *X. religiosus*. For surety Montrouzier's type specimens should be examined, but they have probably been destroyed.

Viewpoint of Park *et al.*

Recently a new paper on Korean Bostrichidae (Park *et al.* 2015) has appeared. The Authors consider *X. cathaicus* Reichardt as a synonym of *C. pekinensis* Lesne, treating both under the common name *Xylothrips pekinensis* (Lesne), what seems perfectly right. However, the most important character distinguishing it from other representatives of the genus, namely the lack of lateral carina of pronotum, has not been mentioned either in the key to the identification of Asiatic species of *Xylothrips* or in the description of *X. cathaicus*, although just this was the main feature both Lesne and Reichardt quoted in describing the new genus and species. To distinguish *X. pekinensis* from *X. religiosus* and *X. flavipes* Park *et al.* used the pubescence of anterior part of pronotal sides, what may certainly serve as an auxillary trait but its interpretation being often difficult – fine recumbent pubescence on (mainly lower part of) pronotal sides occurs also in *X. religiosus* – for diagnostic purposes the structural features of pronotum and elytra seem much more appropriate.

Whereas the inclusion of *Calophagus pekinensis* to the genus *Xylothrips* is fully warranted, its assignation to the same subgenus seems questionable: presence *vs.* absence of lateral carina of pronotum was used by Lesne to join or separate genera. Also the geographical distribution is significant: while *X. flavipes* is Oriental, and *X. religiosus* Melanesian species, with areas meeting at the Weber (Northern part) and Wallace's Line (Southern part), *X. pekinensis* shows definitely Palaearctic affinities.

So, the morphological characters of imagines, supplemented by geographical distribution of other species, make the separation of *X. pekinensis* in the distinct subgenus – *Xylothrips* (*Calophagus*) n. comb. – perfectly reasonable.

[1] One information exceeded any imagination. The Author reports *Apate geayi Lesne*, extremely rare Madagascar endemit, from Corsica on Mediterranean Sea. Perhaps it could be considered acceptable (introduction with wood, albeit improbable, cannot be fully excluded) had only females been reported – Lesne described *A. geayi* in 1907 based on females, and males remain hitherto unknown – but the Author mentions (besides one female) two males and suggests successful acclimatization of the species on Corsica. Verification of the specimens by the first author (JB) has revealed that in fact they belong to *Apate monachus* F., one of the commonest African species of the genus, rather frequently encountered in the Mediterranean area.

Key to the identification of subgenera of *Xylothrips* Lesne

1. Lateral carina of pronotum well developed, sharp, extending from basal angles at least to pronotal midlength (Figs 4-5) ……..... *Xylothrips* s. str.

- Lateral carina lacking, only basal angles of pronotum distinctly protruding; or, if discernible, then blunt, poorly marked, seen only shortly before base (Fig. 6) ..... *Calophagus* Lesne

Key to the identification of species of the subgenus *Xylothrips* Lesne

1. Lateral carina of elytral truncation joins the carina of elytral sides (Fig. 7) .... *X.* (*X.*) *flavipes* (Illig.)

- Lateral carina of truncation vanishes shortly before that of elytral sides without joining it (Figs 8-9) ..... *X.* (*X.*) *religiosus* (Boisduval)

A catalogue of the species of *Xylothrips* genus

Xylothrips* (*Xylothrips*) *flavipes (Illiger, 1801) (Fig. 1)

Apate flavipes Illiger, 1801: 171
Apate dominicana Fabricius, 1801: 380
Apate sinuata Stephens, 1830: 351, nec Fabricius 1792: 362
Bostrichus mutilatus Walker, 1858: 286
Bostrichus mutilatus Walker, 1859: 260
Bostrichus iracundus Snellen van Vollenhoven, 1869: 10

Geographical distribution (Map 1):

Asia: Southern China, Japan (South Isles), Taiwan, India, Sri Lanka, Andaman Isl., Nepal, Bhutan, Thailand, Laos, Cambodia, Myanmar, Vietnam, Malaysia, Indonesia, Filippines
Africa: Comoros, Madagascar, Reunion, Mauritius, Seychelles, Rodrigues.
Introduced: Socotra (Yemen), Africa (Natal), Israel, Europe, USA.

Xylothrips* (*Xylothrips*) *religiosus (Boisduval, 1835) (Fig. 2)

Apate religiosa Boisduval, 1835: 460
Apate destructor Montrouzier, 1856: 55, nec Burchell, 1822: 325
Apate geoffroyi Montrouzier, 1861: 266 **n. syn.**
Apate lifuana Montrouzier, 1861: 267

Geographical distribution (Map 2):

Asia: Indonesia
Australia: New Guinea, Australia, New Caledonia, Vanuatu, Solomon Isl., New Hebrides, Thaiti, Fiji, Samoa, Kiribati, Cook Is., French Polynesia, Hawaii.
Introduced: USA, Africa, Europe

Xylothrips* (*Calophagus*) *pekinensis (Lesne, 1902) **n. comb.** (Fig. 3)

Calophagus pekinensis Lesne, 1902: 109
Xylothrips cathaicus Reichardt, 1966: 82

Geographical distribution (Map 3):

Asia: South Korea, Japan (Tsusimina Archip.), China (Henan, Hebei, N. Sichuan)

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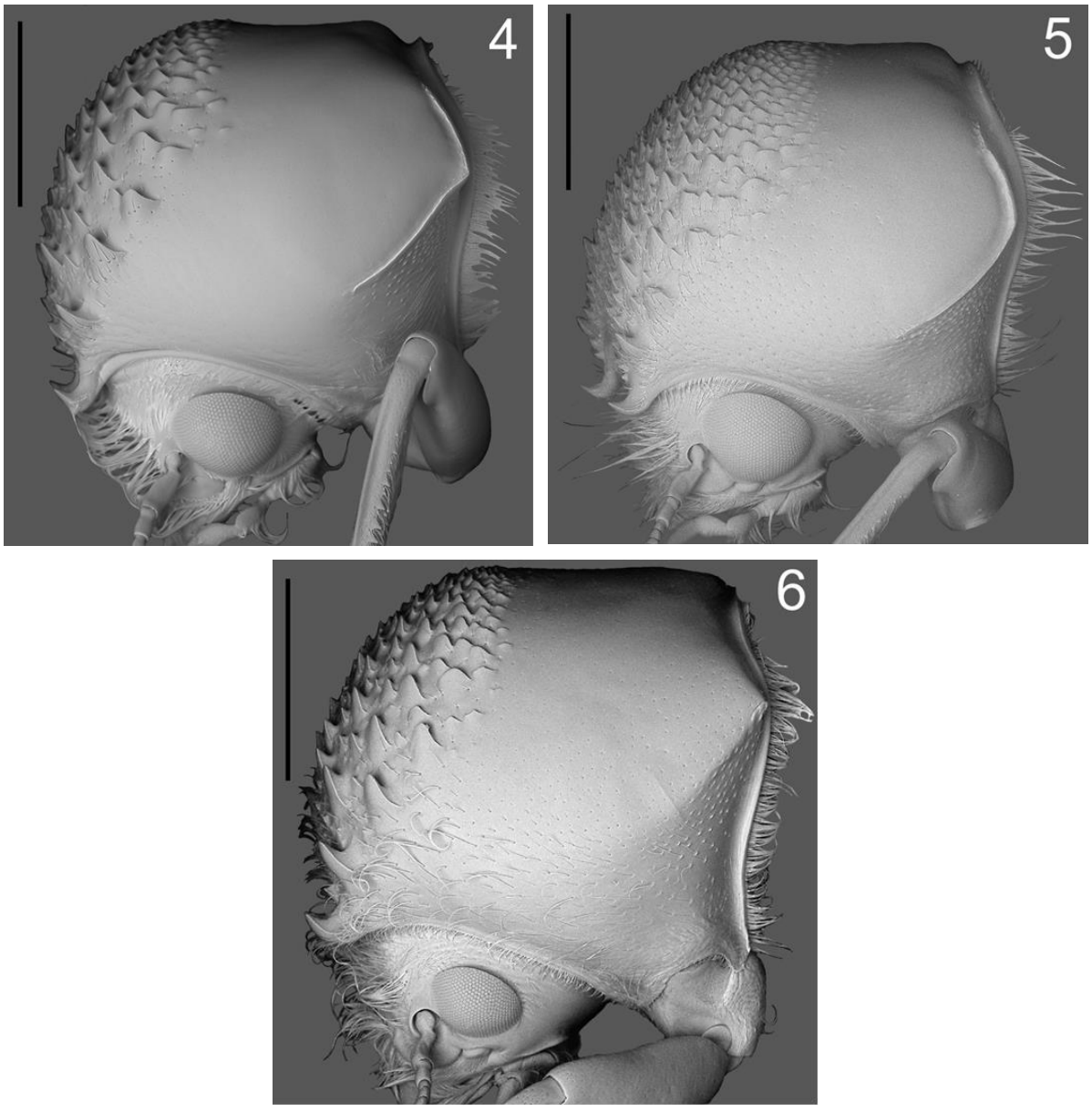
Fig. 1

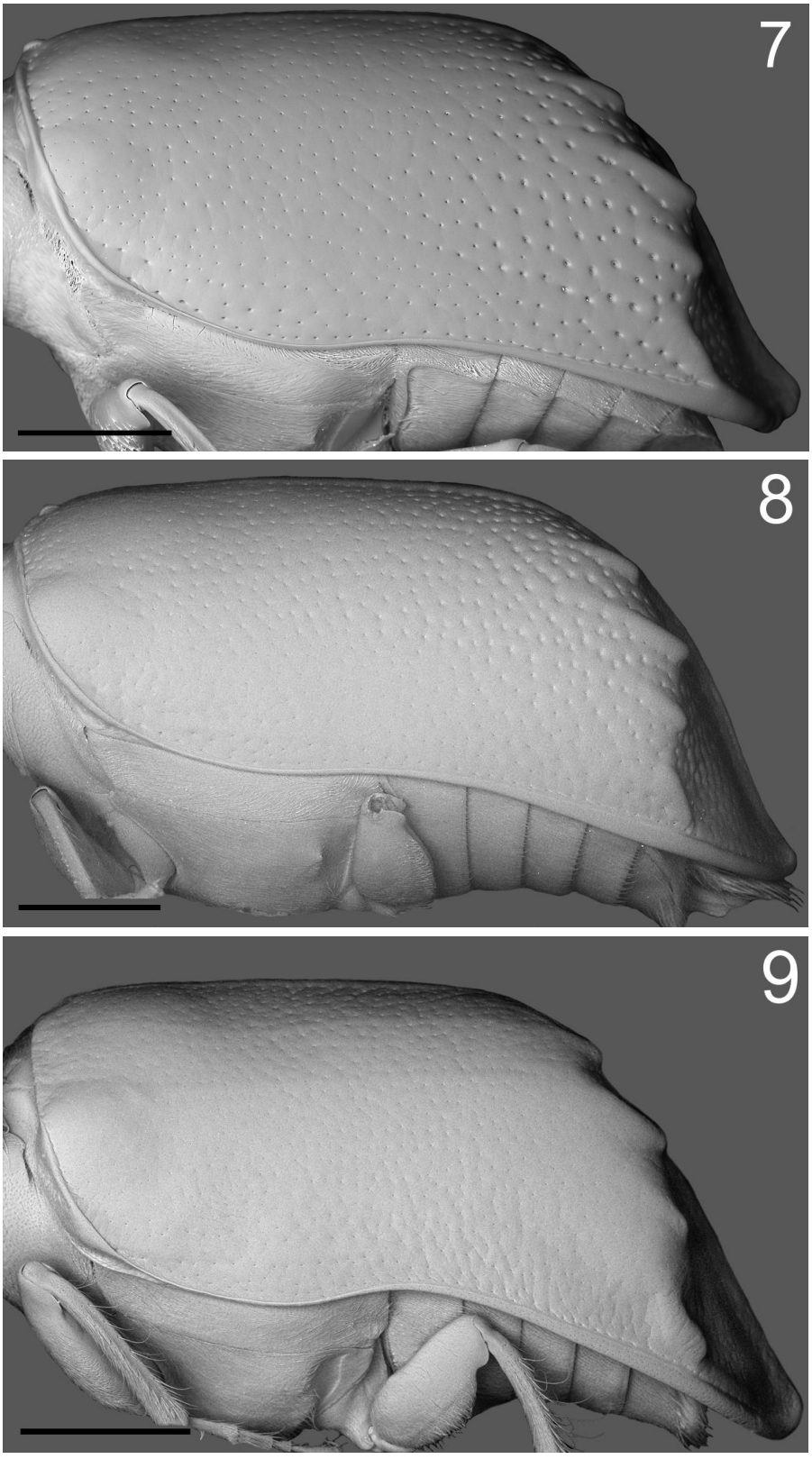
Fig. 2

Fig. 3

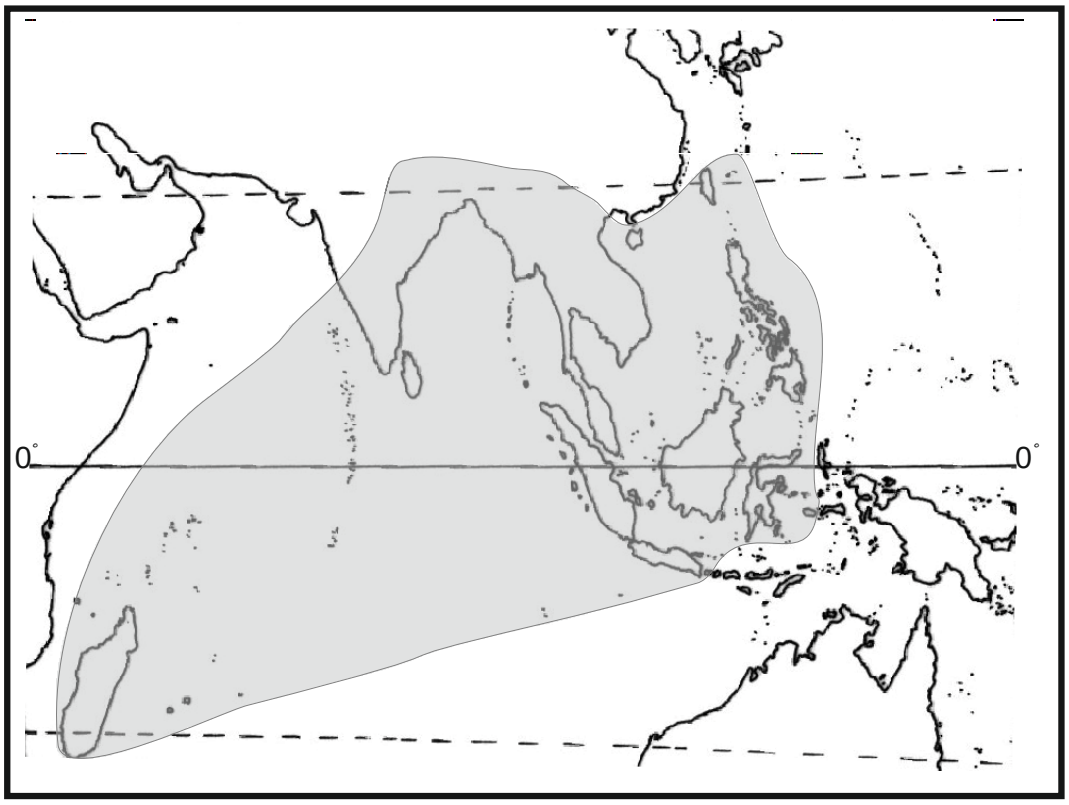
Figs 1-3. *Xylothrips* spp., dorsal view: 1 – *X*. (*X*.) *flavipes* (Illig.); 2 – *X*. (*X*.) *religiosus* (Boisduval); 3 – *X*. (*C*.) *pekinensis* (Lesne).



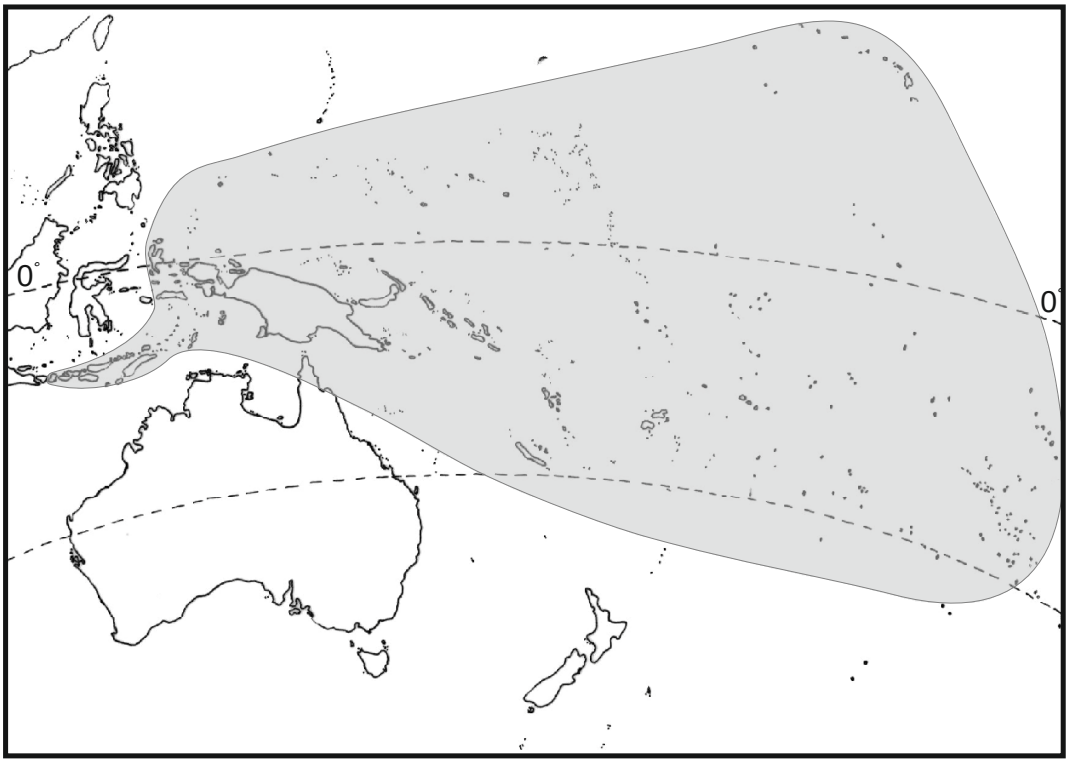
Figs 4-6. Pronotum of *Xylothrips* spp., lateral view: 4 – *X*. (*X*.) *flavipes* (Illig.); 5 – *X*. (*X*.) *religiosus* (Boisduval); 6 – *X*. (*C*.) *pekinensis* (Lesne). Scale bar = 1 mm.



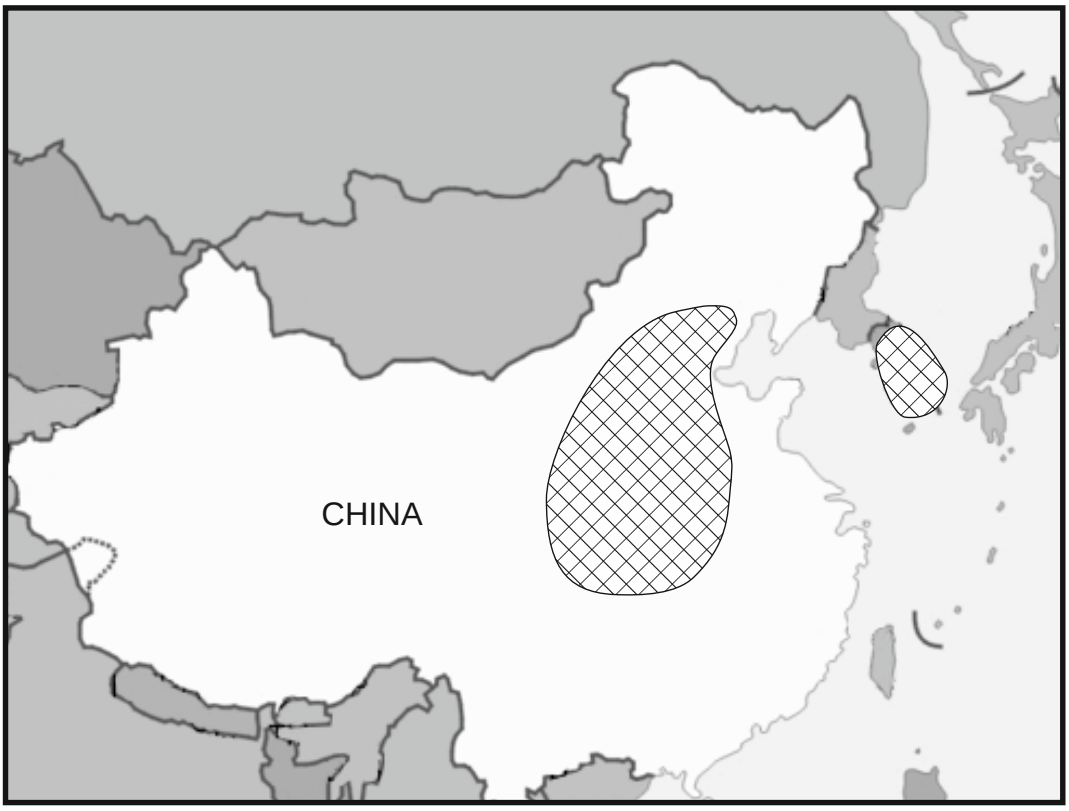
Figs 7-9. Truncations of elytra of *Xylothrips* spp., lateral view: 7 – *X*. (*X*.) *flavipes* (Illig.); 8 – *X*. (*X*.) *religiosus* (Boisduval); 9 – *X*. (*C*.) *pekinensis* (Lesne). Scale bar = 1 mm.



Map 1. Geographical distribution of *Xylothrips* (*X.*) *flavipes* (Illig.).



Map 2. Geographical distribution of *Xylothrips* (*X.*) *religiosus* (Boisduval).



Map 3. Geographical distribution of *Xylothrips* (*C.*) *pekinensis* (Lesne).