

SYNONYMIES OF BARK BEETLES (SCOLYTIDAE) IV

174. Contribution to the morphology and taxonomy of the Scolytoidea.

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This paper deals with some recently observed synonymies within the family Scolytidae mainly from North America and the Neotropical region. It represents the fourth contribution of that type and shall be continued.

***Liparthrum squamosum* (Blackman)**

Stephen L. Wood (Canadian Ent. LXXXIX, 1957) has dropped the genus *Erineosinus* Blackman transferring the genotype to *Liparthrum* Wollaston. This new synonymy seems to be correct but Wood's assumption of the close relationship of *L. squamosum* (Blkm.) with *L. mori* Aubé does not hold, probably because the author has not seen authentic specimens. A paratype of *Liparthrum* (*Erineosinus*) *squamosum* (Blkm.) I received from the author himself many years ago certainly is much closer related to *L. lowei* Woll. and *L. loweianum* Woll. than to the above mentioned species.

The genus *Liparthrum* Woll. belongs to the subfamily Hylesinae and has to be placed in the tribus Hypoborini.

***Pseudocryphalus* Swaine = *Renocis* Casey**

The synonymy of *Pseudocryphalus* Sw. with *Renocis* Csy. was first indicated by H. Eggers (Wien Ent. Zeitschr. 47, 1931: 185), later verified by Schedl (Rec. South. Australian Mus. VI, 1936: 525) and W. M. Blackman (Proc. United States Nat. Mus. 88, 1940: 374-375).

Lately St. L. Wood proved the synonymy of *Renocis* (*Pseudocryphalus*) *brittaini* Sw. and *R. criddlei* Sw. with *R. heterodoxus* Csy.

The genus *Renocis* Csy. is closely allied to *Hypoborus* Er. both genera belonging to the subfamily Hylesinae, tribus Hypoborini.

***Hexacolus* (*Erineophilus*) *guyanaensis* Schedl**

Schedl (Dusenja III, 1952: 346) proposed to drop the genus *Erineophilus* Hopk. in favour of *Hexacolus* Eichh. By this procedure not only the genotype *E. schwarzi* Hopk. has to be transferred to *Hexacolus* but also the second described species *E. guyanaensis* Schedl.

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Pagiocerus Eichhoff

According to the original description of *Pagiocerus* Eichh., *P. rimosus* Eichh. has to be designated as genotype. Eggers (Archiv. Inst. Biol. Sao Paulo I, 1928: 92) on the other hand, checked the type of *Bostrichus frontalis* Fabricius and found it perfectly agreeing with the types of *Pagiocerus rimosus* Eichh. originating from Colombia: Nevada Huila, leg. Stübel. and one specimen from Cuba collected by Riehl. Therefore *P. rimosus* Eichh. becomes a synonym to *Pagiocerus* (*Bostrichus*) *frontalis* (Fab.) and the latter the genotype of the genus *Pagiocerus* Eichh.

Pagiocerus frontalis (Fabricius)

Bostrichus frontalis Fabricius, Syst. Eleuth. II, 1801: 389.

Pagiocerus rimosus Eichhoff, Berl. Ent. Zeitschr. XII, 1868: 148.

Hylastinus fiorii Eggers, Ent. Bl. IV, 1908: 215.

Pagiocerus chiriquensis Eggers, Arch. Inst. Biol. Sao Paulo I, 1928: 92
(new synonymy).

Pagiocerus zeae Eggers, Arch. Inst. Biol. Sao Paulo I, 1928: 92.

Pagiocerus nitidus Eggers, Ent. Bl. XXVI, 1930: 170 (new synonymy).

Pagiocerus caraibicus Eggers, Arb. morph. tax. Ent. Berlin-Dahlem VII,
1940: 136 (new synonymy).

Two specimens of my collection have been compared with the type of *Bostrichus frontalis* Fab. in the Zool. Museum of the University in Kiel, one by Forstrat Eggers, the other by myself. They agree very well with about half of two large lots of this species I received during recent years; the first series has been reared from infested maize seeds imported into the Belgian Congo from La Malina, Lima, Peru, by J. Decelle, the other one collected by Dr. Kuschel in Tingo Maria, Peru, 17. XII. 1946. All these specimens are comparatively slender, the base of the pronotum is distinctly narrower than the elytra and its sides are subparallel on the basal half. The other half of both lots consists of specimens being somewhat stouter, the pronotum is relative broader, its sides more arcuate on the basal half and the strigose sculpture of the pronotal disc more conspicuous. Obviously these two forms represent the two sexes of *Pagiocerus frontalis* (Fab.), the more slender ones the females, the stouter ones the males. The females compare very well with a cotype of *Pagiocerus nitidus* Egg., the males with a cotype of *Pagiocerus zeae* Egg. and two metatypes of *Pagiocerus fiorii* Egg. all in my collection. To the same extent the males agree with two cotypes of *Pagiocerus caraibicus* Egg. and two metatypes of *Pagiocerus chiriquensis* Egg. The synonymy with all these species seems to be beyond doubts.

Aside of *P. frontalis* Fab. there remain two good species in the genus *Pagiocerus* Eichh. *P. granulatus* Egg. and *P. punctatus* Egg. and two species I have not seen yet *P. cribricollis* Eichh. and *P. luederwaldti* Egg.

On some North American Species of *Ips* DeGeer

In my paper "Die Kiefernborckenkäfer von Guatemala" (Zeitschr. f. angew. Ent. XXXVIII, 1955: 33-45) I have expressed some doubts about the validity of some of the North American species of *Ips* De Geer proposing in the same time a number of new synonyms based on my own large collection and the comparison with some loaned specimens. S. L. Wood two years later obviously under the influence of my publication checked some of my propositions confirming some of them coming to somewhat other results in other cases. Both studies lead to a more clear conception of some of the species of economic importance. The following remarks will add new facts for the same purpose.

Ips confusus (Leconte)

Late Forstrat Eggers, at the beginning of the war, has given to me a specimen of *Ips montanus* Eichh. ex coll. Schaufuss, of which collection the type originated also, bearing two labels, one saying "Cisco, Juli 69" and the other "*Ips montanus* Eichh. mit Type verglichen" written by Eggers himself. After the destruction of all other types in the Museum Hamburg during the war this single specimen seems to be the only representative of Eichhoff's *Ips montanus* left.

Comparing this type with my own material of *Ips confusus* Lec., partly compared with specimens of J. M. Swaine's collection, showed that they agree very well with regards of the sculpture, the vestiture and the position of the teeth on the elytral declivity. The only small difference to be noted is the fact that *Ips montanus* is but feebly larger than the average of *Ips confusus* Lec. Therefore there is no more doubt that *Ips montanus* Eichh. has to be regarded as a synonym of *Ips confusus* Lec.

The second accordance, that between *Ips montanus* Eichh. and *Ips vancouveri* Sw. I have reported on p. 40 of the publication mentioned above and this statement was repeated under "new synonymy" by Wood in 1957.

All these facts lead to the following synonymy: *Ips confusus* Lec. (*Ips montanus* Eichh., *Ips vancouveri* Sw.).

Ips concinnus (Mannerheim)

In my paper on the pine bark beetles of Guatemala I have drawn attention to the synonymy of *Ips concinnus* (Mannh.) with *Tomicus*

hirsutus Eichh., *Ips mexicanus*, *Ips chamberlini* Sw. and *Ips radiatae* Hopk. basing my conclusions on the comparison of authentic material of all species. I also stressed the fact that there do not exist any known differences in the breeding habits of any importance. Minor deviations in the seasonal history and even in the construction of breeding tunnels are common within the genus *Ips* when one and the same species breeds in different host-plants as we know it from *Ips typographus* (L.) when breeding in the preferred host, the different species of spruce on one side and in pine or larch on the other.

***Ips confusus* (Leconte), *I. cribricollis* (Eichhoff), *I. lecontei* Swaine**

Schedl (1955) has proposed the synonymy of *Ips cloudrofti* Sw., *Ips lecontei* Sw., *Ips vancouveri* Sw. and *Ips montanus* Eichh. with *Ips confusus* Lec. In the meantime it became obvious that only *Ips montanus* Eichh. and *Ips vancouveri* Sw. have to be referred to this species while *Ips cloudrofti* Sw. and *Ips lecontei* Sw. form a group for itself especially on account of the position of first small tooth on the upper margin of the declivity.

Ips cloudrofti Sw. has been placed as synonym to *Ips cribricollis* (Eichh.) by Wood. *Ips lecontei* Sw. shows exactly the same arrangement of teeth on the elytral declivity but is decidedly larger. It will take some future investigations to prove if these two species, *Ips cribricollis* Eichh. and *Ips lecontei* Sw., can be regarded as independent species or if they are merely geographical races of one and the same species. The specimens from Guatemala referred by Schedl to *Ips confusus* (Lec.) have to be transferred to *Ips lecontei* Sw.

***Xyleborus ferrugineus* (Fab.)**

Bostrichus ferrugineus Fabricius, Syst. Eleuth. II, 1801: 388 (♀)

Xyleborus amplicollis Eichhoff, Berliner Ent. Zeitschr. XII, 1868: 280.

Xyleborus argentinensis Schedl, Ann. Mag. Nat. Hist. (10) VIII, 1931: 345.

Xyleborus bispinatus Eichhoff, Berliner Ent. Zeitschr. XII, 1868: 146.

Xyleborus confusus Eichhoff, Berliner Ent. Zeitschr. XI, 1867: 401.

Xyleborus fuscatus Eichhoff, Berliner Ent. Zeitschr. XI, 1867: 400.

Xyleborus hopkinsi Beeson, Insects of Samoa, IV. Col., Fasc. 4, 1929: 246.

Xyleborus impressus Eichhoff, Berliner Ent. Zeitschr. XI, 1867: 400.

Xyleborus insularis Sharp, Trans. R. Soc. Dublin III, 1885: 192.

Xyleborus notatus Eggers, Arb. morph. tax. Ent. Berlin-Dahlem VIII, 1941: 107.

Xyleborus nyssae Hopkins, United States Dept. Agr. Rep. 99, 1915: 66.

Xyleborus schedli Eggers, Ent. Bl. XXX, 1934: 83.

Xyleborus subitus Schedl, Rev. Brazilian Biol. 9 (3), 1949: 280.

Xyleborus tanganus Hagedorn, Deutsche Ent. Zeitschr. 1910: 8.

Tomicus trypanaeoides Wollaston, Col. Hesperidum 1867: 114.

The type of *Xyleborus ferrugineus* Fab., a female, is deposited in the Fabricius Collection in the Zoological Institute of the University in Kiel, Germany, a cotype pinned in the same way in the Zoological Museum of the University in Berlin. Both specimens I have seen when Eggers made its comparison with a series from Nederland Guyana, Paramaribo, C. Heller leg. two of them now being in my collection. Eichhoff and Hagedorn obviously never have seen the types of *X. ferrugineus* Fab. and the same applies to Winn Sampson and C. F. C. Beeson.

For *Xyleborus confusus* Eichh. I have checked type specimens from Venezuela, Reitter (2.47 mm long) and Caracas (2.72 mm) and specimens marked as types from Brasilia mer., Dohrn (2.55 mm), Surinam, Wehrnecke (2.48 mm), Portorico, Germar (2.65 mm) and Madagascar (2.82 mm). The latter series might have been used by Eichhoff in drawing up his description in the Ratio Tomicinorum where these localities are mentioned.

Both series, that of *Xyleborus ferrugineus* Fab. and *X. confusus* Eichh. are very much alike, the former having the elytral disc less regularly striate-punctate and the interstices not so clearly defined than in *X. confusus* Eichh. characteristics used by Eggers to separate the two species.

During my investigations in the Belgian Congo I collected large series of *X. ferrugineus* Fab. in a good number of localities and from many host plants. The individual variation was very marked in one and the same locality as well as in the progeny of a single female. The smallest specimen taken measured 2.1 mm in length, the largest one 2.8 mm, a still larger specimen from Africa in my collection with 3.00 mm originates from Nyembwe-Bulungwa in the former Deutsch Ost Afrika. Very stout specimens are 2.7 times as long as wide, the most slender ones 3.00 times. The sculpture of the elytral disc varies from regularly and strongly striate-punctate with fine and sparsely placed interstitial punctures to more weakly developed striae, more irregularly placed striae and more numerous and larger punctures on the interstices. Other variations can be found in the steepness of the elytral declivity, in the relative size of declivital tubercles especially those on the third interstices and in the punctuation of the basal portion of the pronotum. The extremes of each one of these characteristics are connected by all grades

of intermediate forms so that they cannot be used to separate the confusus-type from that of *X. ferrugineus* as this has been done in the past and *Xyleborus confusus* Eichh. has to be dropped in favour of *X. ferrugineus* Fab.

From the already recognized synonyma the type of *Xyleborus insularis* Sharp (in the British Museum) has been checked by Blandford (Biol. Centr. Amer. Col. IV, 1898: 217-218), that of *Tomicus trypanaeoides* Woll. (Brit. Mus.) and *Xyleborus tanganus* Hag. (Museum Hamburg) by Eggers (Wien. Ent. Zeit. 46, 1929: 48).

A great part of the many specimens I have seen from Central and South America show the same variations as those from Central Africa, others are somewhat larger than the average with the elytral disc more irregularly sculptured being closer to *Xyleborus fuscatus* Eichh. and *X. bispinatus* Eichh. The first mentioned name was commonly used by North American students, the second especially by Eggers and Schedl for specimens from the neotropical region. The types of both species have been studied by Eggers and Schedl several times but in spite of the possibility of direct comparison it become more and more unsatisfactory to keep them apart on well founded characteristics. They certainly represent not more than narrow limited individual variations.

Xyleborus amplicollis Eichh. according to the description seems to be a small beetle regularly striate-punctate on the elytral disc and with subimpunctate interstices. It might be regarded as the other extreme of the individual variation within the *Xyleborus ferrugineus* Fab.

A single specimen in my collection has been compared with the type of *Xyleborus impressus* Eichh. by late Forstrat Eggers in 1933. This specimen perfectly agrees with the metatypes of *X. ferrugineus* Fab. from Paramaribo, C. Heller leg. mentioned before.

In 1949 I received a specimen of the type series of *Xyleborus nyssae* Hopk. checked against the type itself by W. H. Anderson. This specimen corresponds exactly with the medium sized coarsely sculptured series of *X. ferrugineus* Fab. from Central Africa.

The specimens of *X. ferrugineus* Fab. from the Pacific Islands including Hawaii as a rule are rather large, about as long as the largest from Africa and South America. Some such large specimens have been described by C. F. C. Beeson as *Xyleborus hopkinsi*. *Xyleborus schedli* Egg., *X. argentinensis* Schedl and *X. subitus* Schedl are medium sized specimens of varying sculpture on the elytral disc. In the light of our present knowledge they all are without taxonomic value. The same applies to *X. notatus* Egg. and the two *in literis* names *X. obtusipennis*

Egg. and *X. biuncus* Schedl. Types of all these species are either in my collection or have been studied lately.

The *Xyleborus ferrugineus* (Boheman) sometimes confused with *X. ferrugineus* Fab. has nothing to do with this species but is a synonym to *Xyleborus similis* Ferr.

The male of *X. ferrugineus* Fab. has been described by A. D. Hopkins (United States Dept. Agric. Rept. 99, 1915: 67) under the name of *Xyleborus fuscatus* Eichh.

Xyleborus ferrugineus Fab. and its relatives have been arranged in a special group of the genus called *Xylebori bispinati*. After this synonymical study there remain but two more species besides *X. ferrugineus* Fab., the rather large species of *X. rufopiceus* Egg. from the Aethiopian region and the extremely large *X. sextuberculatus* Schedl from Argentine. It will take some more material and probably a certain extent of field observations before a final decision about their validity can be given.

***Xyleborus* (*Anisandrus*) *dispar* (Fabricius)**

Apate dispar Fabricius, Ent. Syst. I, 1792: 363 (♀ ♂)

Scolytus pyri Peck, Massachusetts Agric. Journ. IV, 1817: 205.

Although already E. A. Schwarz in the Proc. Ent. Soc. Washington II, 1890-1892: 198 indicated the synonymy of *Scolytus pyri* Peck to *Xyleborus* (*Apate*, *Anisandrus*) *dispar* Fabricius and Hagedorn in his Coleopterorum Catalogus (1910: 102) stressed this synonymy, the two names are still used separately, *Xyleborus pyri* Peck by American students, *X. dispar* in Eurasia. I have collected specimens on both continents having not found any significant difference in size or sculpture in either sex. I have also seen specimens of *X. pyri* Peck checked by late J. M. Swaine in the Canadian National Collection and compared them with my own European material. It seems advisable to use an uniform nomenclature especially as biological studies and observations are carried on on both continents.

***Xyleborus xylographus* (Say)**

Bostrichus xylographus Say, Journ. Acad. Nat. Sci. Philadelphia V, 1826: 256.

Bostrichus saxeseni Ratzeburg, Die Forstinsekten I, 1837: 167.

S. L. Wood dealt with *Xyleborus saxeseni* Ratz. and *X. xylographus* (Say) lately, transferring to the former as synonyms *X. arbuti* Hopk., *X. tsugae* Sw. and *X. librocedrus* Sw. to the latter *X. canadensis* Sw. I have collected *Xyleborus saxeseni* Ratz. many times in various parts of Europe and had at hand thousands of specimens from other collectors in

the course of forty years experience and from the North American *Xyleborus xylographus* (Say) I have also examined a good number of series among them specimens which served Eichhoff in preparing his description in his *Ratio Tomicinorum*. Although I was carefully searching for any significant differences all my efforts were made in vain. I am personally convinced that in the Holarctic Region we have only one common species for which by priority has to be used Say's name *Xyleborus xylographus* (Say).

***Xyleborus femoratus* Egg. = *Xyleborus curtus* Egg.**

The type of *Xyleborus curtus* Egg. had been compared with two co-types of *Xyleborus femoratus* Egg. studying especially the differences Eggers had given in his key for separating the two species. Although greatest care had been taken the differences mentioned by Eggers are of no taxonomic value and the synonymy seems to be beyond doubt.

THE TENEBRIONID *Diaclina fagi* AS A MEDICINE IN THE ORIENT

The medicinal use of *Diaclina fagi* (Panzer), a species commonly found in stored products in the Orient, came to my attention on receiving specimens for identification from the Philippines. I have scanned the entomological literature concerned with entomophagy and found no mention of this beetle. The brochure in Chinese on the therapeutic uses of the beetle that was sent with the specimens provided much of the information that follows. The beetles are evidently used in many parts of China and Korea, and a transliteration of its Chinese name is yong-chun. The beetle is eaten after it has been fed on those Chinese herb medicines ordinarily used as a tonic. Or, to cure a particular disease, the beetle is fed on the medicines that are usually used to cure that disease. It is claimed that the curative powers of the medicines will thus be increased some tenfold. The recommended dosage is 5 to 7 beetles, chewed slowly, followed by a drink of water, just before bedtime; this dosage can be increased to 10 beetles three times a day. They are said to have a peppery taste. However, the patient is warned against taking too many at one time; this could cause irritation of the nasal passages and tongue. Of the 50 or more diseases against which this beetle is said to be effective, I might mention asthma, arthritis, tuberculosis, bed-wetting, and impotence. In addition, the beetle is used in the manufacture of wine, but not as the principal ingredient. It is an additive, making the wine into a tonic.—T. J. SPILMAN, *Entomology Research Division A.R.S., U.S.D.A., Washington, D. C.*



Schedl, Karl E. 1960. "Synonymies of Bark Beetles (Scolytidae) IV: 174. Contribution to the Morphology and Taxonomy of the Scolytoidea." *The Coleopterists' Bulletin* 14(1), 5–12.

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