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Revision of the American species of the genus *Prionus* Geoffroy, 1762 (Coleoptera, Cerambycidae, Prioninae, Prionini)

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Abstract

A revision of the American species of *Prionus* Geoffroy, 1762 is presented. *Prionus* (*Neopolyarthron*) Semenov, 1899 and *Prionus* (*Antennalia*) Casey, 1912 are synonymized with *Prionus* Geoffroy, 1762. *Homaesthesis* LeConte, 1873 is considered a true subgenus of *Prionus*. *Prionus* (*Homaesthesis*) *rhodocerus* Linsley, 1957 and *Prionus* (*Homaesthesis*) *linsleyi* Hovore, 1981 are synonymized with *Prionus simplex* (Casey, 1912). *Prionus beauvoisi* Lameere, 1915 and *Prionus* (*Neopolyarthron*) *debilis* Casey, 1924 are synonymized with *P. imbricornis* (Linnaeus, 1767). *Prionus* (*Neopolyarthron*) *townsendi* Casey, 1912 and *Prionus* (*Neopolyarthron*) *curticollis* Casey, 1912 are synonymized with *Prionus mexicanus* Bates, 1884. *Prionus batesi* Lameere, 1920 is synonymized with *Prionus aztecus* Casey, 1912. *Prionus hintoni* Linsley, 1935 is synonymized with *Prionus flohri* Bates, 1884. *Prionus* (*Antennalia*) *fissicornis parviceps* Casey, 1912 is excluded as the synonym of *Prionus fissicornis* Haldeman, 1846 and instead synonymized with *P. imbricornis* (Linnaeus, 1767). *Prionus* (*Prionus*) *validiceps* Casey, 1912 is excluded from the synonymy of *P. pocularis* Dalman, 1817, and synonymized with *P.* (*P.*) *californicus* Motschulsky, 1845. *Prionus* (*Prionus*) *tumidus* Casey, 1912 is excluded from the synonymy of *P. heroicus* Semenov, 1907, and synonymized with *P.* (*P.*) *californicus*. The lectotype female and the paralectotype male of *Prionus* (*Prionus*) *tristis* are excluded from the synonym of *P.* (*P.*) *heroicus* and transferred to the synonym of *P.* (*P.*) *californicus*; the paralectotype female of *P.* (*P.*) *tristis* is maintained in the synonymy of *P.* (*P.*) *heroicus*. *Prionus* (*Prionus*) *fontinalis* Casey, 1914 is excluded from the synonymy of *P.* (*P.*) *heroicus* and synonymized with *P.* (*P.*) *californicus*. *Prionus simplex* is formally excluded from the Cerambycidae fauna of Oklahoma, USA. Comments on the page, plate, and figure of publication of *Cerambyx laticollis* Drury, 1773 are presented. *Prionus* (*Trichoprionus*) Fragoso & Monné, 1982 is considered a genus different from *Prionus*. *Hypoprionus* is designated as a replacement name for *Prionellus* Casey, 1924 and *Cerambyx laticollis* Drury, 1773 is designated as the type species. Comments on the type localities of *Prionus emarginatus*, *Prionus palparis* Say, 1824, and *Prionus* (*Neopolyarthron*) *aztecus* Casey, 1912 are presented. *Prionus* (*Homaesthesis*) *integer sensu* Linsley (1962) and Chemsak (1996) is described as *P.* (*H.*) *geminus*, new species. Comments on the date of publication of *Prionus fissicornis* Haldeman, 1846 are presented. Comments on the status of the syntypes of *Cerambyx imbricornis* Linnaeus, 1767 are also presented. Lectotype specimens for *Prionus flohri* Bates, 1884, *Prionus* (*Prionus*) *tristis*, and *Prionus lecontei* Lameere, 1912 are designated. Comments on the number of specimens used in the original description of *Prionus californicus* are presented, and a lectotype for this species is designated. New state records

are presented for *Prionus emarginatus* Say, 1824; *P. imbricornis* (Linnaeus, 1767); *P. aztecus* Casey, 1912; *P. poultoni* Lameere, 1912; *P. pocularis* Dalman, 1817; and *P. mexicanus* Bates, 1884.

Key words: key, Nearctic, Neotropical, taxonomy

Material and methods

The collection acronyms used in the text are as follows:

ACMT	American Coleoptera Museum (James Wappes), San Antonio, TX, USA;
BMNH	The Natural History Museum, London, England, UK;
CNC	The Canadian National Collection of Insects, Arachnids and Nematodes, Ottawa, Canada;
ENPC	Eugenio H. Nearns Private Collection, at the PERC, West Lafayette, IN, USA;
ERM	Entomology Research Museum, University of California, Riverside, CA, USA;
ESSIG	Essig Museum of Entomology, University of California, Berkeley, CA, USA;
IMCQ	Insectarium de Montréal, Québec, Canada;
IRSN	Institut Royal des Sciences Naturelles de Belgique, Brussels, Belgium;
LSL	The Linnean Society of London, London, England, UK;
MCZ	Museum of Comparative Zoology, Harvard University, Cambridge, MA, USA;
MSB	Museum of Science, Boston, MA, USA;
MZSP	Museu de Zoologia, Universidade de São Paulo, São Paulo, Brazil;
NHMW	Naturhistorisches Museum, Vienna, Austria;
NHRS	Naturhistoriska Riksmuseet, Stockholm, Sweden;
OXUM	Hope Entomological Collections, University Museum, Oxford, England, UK;
PERC	Purdue Entomological Research Collection, Department of Entomology, Purdue University, West Lafayette, IN, USA;
TNM	Texas National Museum, Austin, TX, USA;
UNAM	Universidad Nacional Autónoma de Mexico, Mexico, D. F., Mexico;
UNESP	Departamento de Proteção de Plantas, Universidade Estadual Paulista, Campus de Ilha Solteira, São Paulo, Brazil;
USNM	National Museum of Natural History, Smithsonian Institution, Washington, DC, USA;
UUZM	Uppsala University, Museum of Evolution, Zoology section, Uppsala, Sweden;
ZMHB	Museum für Naturkunde, Berlin, Germany;
ZMUC	Zoological Museum, University of Copenhagen, Copenhagen, Denmark;
ZMUK	Zoologisches Museum, Univeristat Kiel, Kiel, Germany;
ZMUM	Zoological Museum, Moscow State University, Moscow, Russia.

The work listed after the country/state in "Geographical Distribution" refers to the first record of the species for that location. To determine who first recorded the species in a state, we chose who actually mentioned the state by name, and not who generically listed the states as, for example, Doane *et al.* (1936): "southern and western states". Linsley (1962) and Chemsak (1996) also used a similar style to indicate the geographical distribution of species, as for example: "Great Plains east of the Rocky Mountains, from Montana to Minnesota south to Texas."

The references under each species follow the original spelling. Under *Prionus* we added only the work giving the original description of the genus.

The redescription of *Prionus* is based on the type species, *P. coriarius* (Linnaeus, 1758), as well as on the American (*i.e.*, Nearctic and Neotropical) species of the genus. The concept of *Prionus* is somewhat controversial, so it is necessary to base the redescription on only those species. Nearly all subgenera from outside of the Nearctic and Neotropical regions are currently considered distinct genera by most European and Asian authors. However, species from some countries are still considered in *Prionus* (*Prionus*), although, apparently, they belong to different genera or subgenera (Alain Drumont, personal communication).

Taxonomic history

Geoffroy (1762) described *Prionus* to allocate a single specimen [translation]: "The 'prione' was so called, because of the shape of its antennae, which form a saw. This is what its Latin name means, derived from the Greek word. The character of this genus is, therefore, first the antennae saw-like, as in the previous genus; but it differs from the 'melolontes' [*Melolontha*] by a second feature, that is the position of the antennae, which surrounds the base of eyes, seeming implanted in the middle of the eye. I do not know more than one species around Paris, however it is rare; and I have not found its chrysalis or its larvae. I suspect, however, that the latter lives in trunks of trees." Geoffroy (1762) indicated five works where the species was mentioned: Ray (1710); Frisch (1738); Rösel (1746); Linnaeus (1746); Linnaeus (1758).

ICNZ (1954) rejected Geoffroy's work for nomenclatural purposes, considering it as not consistently binominal (Opinion 228): "Names published by Geoffroy (E.L.) in 1762 in the work entitled *Histoire abrégée des Insectes qui se trouvent aux Environs de Paris* are not available for nomenclatorial purposes, for in that work Geoffroy did not apply the principles of binominal nomenclature, as required by Proviso (b) to Article 25 of the Règles."

Kerzhner (1991) proposed the conservation of 24 generic names published by Geoffroy (1762). He recorded on *Prionus*: "***Prionus*** Geoffroy, 1762, vol. 1, p. 198. Seven nominal species were first included in the genus by Scopoli (1772, pp. 99–100), three of which were new and seem never to have been clarified subsequently. The remaining four are now known as *Strangalina* [*sic*] *attenuata* (Linnaeus, 1758), *Strangalia quadrifasciata* (Linnaeus, 1758), *Pachyta quadrimaculata* (Linnaeus, 1758) (= *Cerambyx timidus* Scopoli, 1763) and *Leptura sanguinolenta* (Linnaeus, 1758). None of these species was designated subsequently as type of *Prionus* and I think none of them was included in *Prionus* after Scopoli's work. Latreille (1810, p. 431) designated as type *Cerambyx coriarius* Linnaeus, 1758 (p. 389), the only taxonomic species included in this genus by Geoffroy (1762) and one of the nominal species subsequently included by Fabricius (1775, p. 161). In accordance with general current usage I propose that *Prionus* Geoffroy, 1762 be ruled an available name and placed on the Official List, with *Cerambyx coriarius* Linnaeus, 1758 as the type species by designation under the plenary powers."

ICZN (1994: Opinion 1754) considered *Prionus* as by Geoffroy (1762), and *Cerambyx coriarius* Linnaeus, 1758 its type species, under plenary powers.

Monné (1995, 2006) and Sama (2002), respectively, recorded on the type species of *Prionus*: "Type-species - *Cerambyx coriarius* Linnaeus, 1758 (Latreille designation, 1810) [see also Kerzhner, 1991: 123, designation under the plenary powers]"; "Type species: *Cerambyx coriarius* Linnaeus, 1758, designated by Latreille (1810)." Actually, Boddaert (1770) was the first to clearly associate a species to *Prionus* Geoffroy: "(q) LINN. *Syst*. XII. p. 620. Ceramb. Coriarius. SCHAEFF. *elem. entom. tab. 103. Insect. Ratisb. tab. X. fig. 1. tab. 47.fig. 7*. Prionus. GEOFFR. *Hist. des Insect. I. p. 198. tab. 3. fig. 5*. Prionus." According to British Museum (Natural History) (1913): "5. De groote Zandkoker, een nieuw zoort van Tor, en eene verhandeling over, de oost-indische Buidelrat en Miereneeter. pp. 30: 1 pl. 1770 (Pp. 1–11 & 25–30 are from "Miscellanea Zoologica." pp. 139–145 & 59–65. Pp. 12–24 contain original descriptions of Coleoptera by Boddaert.]." Thus, Kerzhner (1991) was wrong, because Scopoli (1772) was not the first to include a nominal species. In the same way, Latreille (1810) did not designate type species for Prionus, because only one species was originally included in the genus by Geoffroy (1762): *P. coriarius*. It is possible to affirm this because he clearly indicated the work by Linnaeus (1758), and the number of the species in this work, as correctly pointed out by Kerzhner (1991): "p. 389, n. 4 [*Cerambyx coriarius*]." Thus, this would be type species by monotypy (ICZN, 1999: Article 69.3). According to ICZN (1999: Article 67.2.3): "Mere reference in the original publication to a publication containing the name of a species does not by itself constitute an express reference of a nominal species to a nominal genus." However, according to ICZN (1999: Article 12.2.5): "in the case of a new genus-group name, the use of one or more available specific names in combination with it, or clearly included under it, or clearly referred to it by bibliographic reference, provided that the specific name or names can be unambiguously assigned to a nominal species-group taxon or taxa;" As Geoffroy (1762) clearly referred to a species in the work by Linnaeus (1758) ("Linn. Syst. nat. edit. 10, p. 389, n. 4."), we believe that the Article 12.2.5 can be applied. Even if the type species is not considered by monotypy in Geoffroy (1762), because he did not formally used the name of the species, it must be by monotypy in Boddaert (1770). In any case, the designation of type species by the ICZN "under plenary powers" does not make sense.

Linnaeus (1767) maintained *Cerambyx coriarius*, not considering *Prionus* as valid. Scopoli (1772), as

recorded by Kerzhner (1991), used *Prionus*, but did not include any species currently belonging to this genus. Fabricius (1775) used *Prionus* as a valid genus, including *P. coriarius* among its species.

LeConte (1873) described *Homaesthesis* for two species: *H. integra* (LeConte, 1852); and *H. emarginata* (Say, 1824).

Lameere (1912a) considered *Homaesthesis* a synonym of *Prionus* [translation]: "Second subgroup.—The antennae do not reach the middle of the elytra in male, and they have 13 or 14 segments, the segments from the third are sinuate or emarginated, forming two lobes; the anterolateral angle of prothorax is erased. This subgroup corresponds to the genus *Homaesthesis* LeConte, Smiths. Misc. Coll., VI, 1862 [*sic*], p. 288." Only *Prionus integer* and *P. emarginatus* were considered part of this subgroup. It is not possible to affirm that the subgroups of *Prionus sensu* Lameere (1912a) are subgenera, because he divided the genus in two "branches", the latter in "groups", and the groups in "subgroups". Thus, to affirm that the subgroups are subgenera is, in our opinion, controversial.

Casey (1912) considered *Homaesthesis* as distinct from *Prionus*, and allocated to it: *H. integra*; *H. emarginata*; *H. innocua* LeConte, 1862; *H. pubicollis* Casey, 1912; and *H. debiliceps* Casey, 1912.

Linsley (1957), without explanation, considered *Homaesthesis* as a subgenus of *Prionus*. Linsley (1962) included five species in it: *P.* (*Homaesthesis*) *emarginatus*; *P.* (*H.*) *integer*; *P.* (*H.*) *palparis* Say, 1824, *P.* (*H.*) *simplex* (Casey, 1912); and *P.* (*H.*) *rhodocerus* Linsley, 1957.

Casey (1912) described *Prionina* for the following species: *Prionina palparis*, and *P. simplex*. Lameere (1919) listed *Prionina* as synonym of *Prionus*.

Semenov (1899) erected *Prionus* (*Neopolyarthron*) [translation]: "There is a group of species (similar to *Pr. imbricornis* L. and *fissicornis* Hald.) in the genus *Prionus* Geoffr. characterized by big number of antennal joints in both sexes as in *Polyarthron* (up to 30 in *Pr. fissicornis* Hald.). That group, also differing by the presence of articulated appendages on male antennal joints, is totally analogues to *Polyarthron* of Old World. It would be a mistake to regard American species of that type (which could be delimited in a special subgenus that could be named by me as *Neopolyarthron*) to be closely related to *Polyarthron* of Old World. Basing on geographical distribution and on closely relations of all *Neopolyarthron* characters to the characters of other American *Prionus* of subgenus *Prionus* s. str. B. Jak., excluding antennal structures, I'd like to conclude, that *Neopolyarthron* is quite an independent, but totally parallel branch of *Prionus* much less than *Polyarthron* went forward evolutionarily. *Neopolyarthron* is derivate from some form of subgenus *Prionus s. str.* B. Jak., which represents, according to my opinion, the most ancient type of genus *Prionus* Geoffr., while the genus *Polyarthron* Serv. is a very far gone forward sprout of same genus, which probably lost already his connection with it, and originated from another subgenus like *Lobarthron* Sem. or *Psilotarsus* Motsch. (*Otiartes* J.Thoms. = *Brachyprionus* B. Jak.). The text by Semenov (1899) suggests that he considered *Neopolyarthron* as encompassing more than two species ("similar to *Pr. imbricornis* L. and *fissicornis* Hald.).

Lameere (1912a) synonymized *P.* (*Neopolyarthron*) under *Prionus* [translation]: "But Mr. Semenow followed a different path (Horae Rossicae, XXXIV, 1899, p. 255): he founded a subgenus *Neopolyarthron* for the *Prionus* 'polyarthriques' from the United States, citing as belonging to this group *P. imbricornis* L. and *fissicornis* Hald. Mr. Semenow recognized that those insects, related to the common *Prionus* of North America, cannot be incorporated in *Polyarthron* (Revue russe d'Entom., 1904, p. 39), but if he had considered all the American species, he would have seen that the various forms 'polyarthriques' are related to different common *Prionus*, that there was therefore in America polygenism in increasing the number of antennomeres, as elsewhere in the Old Continent. If we accept the subgenus *Neopolyarthron*, reducing it to the two species, *imbricornis* and *fissicornis*, which appear near each other, we would have to create a subgenus for *P. Flohri* and *mexicanus*, that are 'polyarthriques' and we would need to separate them from *P. californicus*, with antennae with 12 antennomeres, from which they are slightly different. Finally, the two *Homaesthesis*, *P. integer* and *emarginatus*, also 'polyarthriques', should be separated from their congener with antennae with 12 antennomeres, *P. palparis*. I think it is better to remove the subgenus *Neopolyarthron*, as it is also preferable to abandon all subgenera created to *Prionus* or *Polyarthron*, and the genus *Polyarthron* itself."

Casey (1912) erected *Prionus* (*Riponus*) to allocate *P.* (*R.*) *townsendi* Casey, 1912, *P.* (*R.*) *aztecus* Casey, 1912, *P.* (*R.*) *curticollis* Casey, 1912, *P.* (*R.*) *diversus diversus* Casey, 1912, *P.* (*R.*) *diversus cuneatus* Casey, 1912, *P.* (*R.*) *imbricornis imbricornis*, *P.* (*R.*) *imbricornis mimus* Casey, 1912, *P.* (*R.*) *imbricornis brunneus* Casey, 1912, and *P.* (*R.*) *debilis* Casey, 1912. Casey (1912) also erected *Prionus* (*Antennalia*) to accommodate *P.* (*A.*) *fissicornis fissicornis* Haldeman 1848, *P.* (*A.*) *fissicornis parviceps* Casey, 1912, and *P.* (*A.*) *fissicornis transversus* Casey, 1912.

Casey (1924) divided *Prionus* in four subgenera. Without any explanation, he considered *Prionus* (*Neopolyarthron*) as valid and synonymized *Prionus* (*Riponus*) with it. The following species was considered in *Prionus* (*Neopolyarthron*): *P.* (*N.*) *robustus* Casey, 1924; *P.* (*N.*) *imbricornis imbricornis*; *P.* (*N.*) *imbricornis brunneus*; *P.* (*N.*) *imbricornis mimus*; *P.* (*N.*) *cuneatus*, *P.* (*N.*) *diversus*; and *P.* (*N.*) *debilis*. *Prionus* (*Riponus*) *townsendi*, and *Prionus* (*Riponus*) *aztecus* were not included in *Prionus* (*Neopolyarthron*) or in any other subgenera used by Casey (1924): it is possible that the author excluded the species described from Mexico. *Prionus laevigatus* Harris, 1837 and *P.* (*P.*) *pocularis prolixus* Casey, 1912 were considered synonyms of *Prionus pocularis*. *Prionus curticornis* LeConte, 1851 and *P. obliquicornis* LeConte, 1851 were also considered synonyms of *Prionus* (*Prionus*) *pocularis*, but Casey indicated that he had doubt about the synonymy, using (?) after each name. *Prionus* (*Prionellus*) Casey, 1924 included: *P.* (*Prionellus*) *laticollis* (Drury, 1773); *P.* (*P.*) *brevicornis* Fabricius, 1801; *P.* (*P.*) *frosti* Casey, 1924; *P.* (*P.*) *oblongus* Casey, 1912 (described as subspecies of *P. laticollis*, and considered as species without any explanation); *P.* (*P.*) *nigrescens* Casey, 1924; *P.* (*P.*) *densus* Casey, 1924; *P.* (*P.*) *parvus* Casey, 1912; and *P.* (*P.*) *kempi* Casey, 1912. *Prionus* (*Prionus*) included: *P.* (*Prionus*) *heroicus* Semenov, 1907; *P.* (*P.*) *tristis* Casey, 1912; *P.* (*P.*) *tetricus* Casey, 1912; *P.* (*P.*) *vastus* Casey, 1912; *P.* (*P.*) *tumidus* Casey, 1912; *P.* (*P.*) *pocularis* Dalman, 1817; *P.* (*P.*) *bicolor*, Casey, 1912; *P.* (*P.*) *validiceps* Casey, 1912; *P.* (*P.*) *consors* Casey, 1912; *P.* (*P.*) *texanus* Casey, 1912; *P.* (*P.*) *solidus* Casey, 1912; *P.* (*P.*) *serriger* Casey, 1924; *P.* (*P.*) *suspectus* Casey, 1924; *P.* (*P.*) *orbiceps* Casey, 1924; *P.* (*P.*) *humeralis* Casey, 1924; *P.* (*P.*) *alutaceus* Casey, 1912; *P.* (*P.*) *californicus* Motschulsky, 1845; *P.* (*P.*) *californicus crassicornis* LeConte, 1852 (considered as subspecies without explanation); *P.* (*P.*) *californicus compar* Casey, 1924; *P.* (*P.*) *californicus curvatus* LeConte, 1859 (considered as subspecies without explanation); *P.* (*P.*) *curvatus ovipennis* Casey, 1924; *P.* (*P.*) *spiculosus* Casey, 1912; *P.* (*P.*) *fissifrons fissifrons* Casey, 1912; *P.* (*P.*) *fissifrons coloradensis* Casey, 1924; *P.* (*P.*) *acomanus acomanus* Casey, 1912 (described as subspecies of *P. consors*, and considered as species without explanation); *P.* (*P.*) *proximans* Casey, 1912 (described as subspecies of *P. consors*, and considered as subspecies of *P.* (*P.*) *acomanus* without any explanation); *P.* (*P.*) *scutellaris* Casey, 1924; *P.* (*P.*) *ineptus ineptus* Casey, 1912 (described as subspecies of *P. californicus*, and considered as species without any explanation); *P.* (*P.*) *ineptus ambiguus* Casey, 1924; *P.* (*P.*) *ineptus angustulus* Casey, 1912 (described as species and considered as subspecies of *P.* (*P.*) *ineptus* without explanation); *P.* (*P.*) *angustulus uintanus* Casey, 1924; *P.* (*P.*) *terminalis* Casey, 1912; *P.* (*P.*) *punctulatus* Casey, 1912 (described as subspecies of *P. californicus*, and considered as species without explanation); *P.* (*P.*) *spaldingi* Casey, 1924; *P.* (*P.*) *fontinalis* Casey, 1924; *P.* (*P.*) *stultus stultus* Casey, 1924; *P.* (*P.*) *stultus parvicollis* Casey, 1924; and *P.* (*P.*) *nanus* Casey, 1924. And finally, *Prionus* (*Antennalia*) with the following species: *P.* (*Antennalia*) *fissicornis* Haldeman, 1845; *P.* (*A.*) *transversus* Casey, 1912 (described as subspecies of *P. fissicornis*, and considered as distinct species with a short comment); *P.* (*A.*) *parviceps* Casey, 1912 (described as subspecies of *P. fissicornis*, and considered as distinct species with a short comment); and *P.* (*A.*) *thoracicus* Casey, 1924. Casey (1924) provided a key to the groups of species of *Prionus*, considered by him as subgenera. In that key, *Prionus* (*Neopolyarthron*) (= Group III) was considered as having antennae 13–18 jointed. However, in the same work, Casey described *Prionus* (*Neopolyarthron*) *robustus*, based on a female with antennae 19-jointed.

Linsley (1962) designated *Prionus pocularis* Dalman, 1817 as the type species of *Prionus* (*Prionellus*), and considered the genus as a synonym of *Prionus* (*Prionus*). Linsley (1962) gave no explanation regarding the synonymy.

Finally, Fragoso & Monné (1982) established *Prionus* (*Trichoprionus*) to allocate their new species *P.* (*T.*) *aureopilosus*.

In summary, *Prionus* is a widespread genus, occurring in the Palearctic Region, Indomalayan Region, Nearctic Region, and Neotropical Region (Dominican Republic, to the central area of Mexico). Currently, 54 species and three subspecies are described in *Prionus* (accepted names), of which 27 species occur in America.

On *Prionus* (*Prionellus*) Casey, 1924

Prionellus Casey, 1924 is a junior homonym of *Prionellus* Kieffer, 1895 (Diptera, Cecidomyiidae). Thus, although we agree that *Prionus* (*Prionellus*) is a synonym of *Prionus*, as indicated by Linsley (1962), the name must be replaced.

Linsley (1962) designated *Prionus pocularis* Dalman, 1817 as the type species of *Prionus* (*Prionellus*), and considered the genus as a synonym of *Prionus* (*Prionus*). Linsley (1962) gave no explanation as to the reason for the synonymy. The designation of *Prionus pocularis* as the type species of *Prionus* (*Prionellus*) was a mistake.

Prionus pocularis was not included in *Prionus* (*Prionellus*) by Casey (1924): it was included in *Prionus* (*Prionus*). Thus, it cannot be the type species of the subgenus (ICZN, 1999: Article 67.2).

To solve these nomenclatural issues, we designate:

1. *Hypoprionus* as a replacement name for *Prionellus* Casey, 1924, masculine gender. Etymology: *Hypo*, a prefix from Greek, meaning "sub", "under"; relative to the "small" size of the species commented on by Casey (1924) in the description of *Prionellus*.
2. We choose as the type species of *Prionus* (*Prionellus*), and consequently for *Hypoprionus nom. nov.*, *Cerambyx laticollis* Drury, 1773, the first species listed by Casey (1924) in his subgenus *Prionus* (*Prionellus*).

On *Prionus* (*Trichoprionus*) Fragoso & Monné, 1982

Fragoso & Monné (1982) described *Prionus* (*Trichoprionus*) to allocate their new species *P.* (*T.*) *aureopilosus* (Figs. 126–127), from Dominican Republic. According to them [translation]: "It differs from the other subgenera of *Prionus*, of American occurrence, by the antennae with 11 segments, by the pronotum penta-tuberculate on disc, and by the dense elytral pubescence in males."

Prionus (*Trichoprionus*) is not a true *Prionus*. It is much closer to *Derobrachus* Audinet-Serville, 1832 than *Prionus*. It is particularly closer to the "Apterous species group" of *Derobrachus*, *sensu* Santos-Silva (2007). The general appearance of *P.* (*Trichoprionus*) *aureopilosus* Fragoso & Monné, 1982 superficially resembles that of *Prionus corpulentus* Bates, 1878, and *P. siskai* Drumont & Komiya, 2006, both known from the Palearctic Region. However, it clearly differs by antennomeres III–X with large, spiniform projection at outer angle in males (flabellate or almost so in *Prionus*, and the flabellum is usually wide, rounded at apex or distinctly emarginated), by the antennae with 11 segments (with at least 12 segments in *Prionus*), by the pronotum distinctly tuberculate (not or very slightly tuberculate in *Prionus*), and by tarsomeres IV–V together about as long as I–III together (shorter in *Prionus*). *Trichoprionus* also resembles *Priotyrannus* (*Kinibalua*) *megalops* Bates, 1889, from Borneo, Malaysia (Sumatra) and Philippines, but differs as follows: head slender; eyes notably smaller; distance between upper eye lobes equal to, at least, length of one lobe; scape distinctly surpassing posterior ocular edge in males; antennomeres III–XI without poriferous area dorsally. In *Priotyrannus* (*Kinibalua*) *megalops* the head is wider, the eyes are very large, the distance between upper eye lobes is distinctly smaller than length of one lobe (contiguous or nearly so), the scape does not surpass posterior ocular edge in males, and antennomeres III–XI have a poriferous area on the dorsal surface.

As the males of *Trichoprionus* have antennomeres III–X strongly spiniform at outer angle and not striolate, two characters not present in *Derobrachus*, we consider it as a distinct genus.

Fragoso & Monné (1982) did not comment on the short metasternum in females, a feature that suggests that they are brachypterous. The examination of a female that belongs to the USNM collection confirms the shortness of the wings in females of *Trichoprionus aureopilosus*.

On *Homaesthesis* LeConte, 1873

When LeConte (1873) established *Homaesthesis* he pointed out: "In *Prionus* ♂ and ♀ the sensitive surface is reticulate, with fine elevated lines, but in *Homaesthesis* ♂, the surface is quite uniform. The sides of the prothorax are armed with 3 acute teeth in *Prionus*, but in *Homaesthesis integra* and *emarginata* the apical and basal teeth are obsolete, so that the sides become unidentate." And he noted on *P. palparis*: "*P. palparis* Say, has the form of *Prionus*, but the antennae are as in *Homaesthesis*." The same appears in LeConte & Horn (1883).

According to Leng (1884): "This genus [*Prionus*] and *Homaesthesis* constitute the group *Prionini*, all the species of which resemble one another closely in superficial appearance… The thorax as noted above is tridentate in *Prionus*, unidentate in *Homaesthesis*…" Leng (1884) only followed LeConte's (1873) opinion. In his key to the species of *Prionus* he separated them into two groups: "Sensitive surface antennae ♂ and ♀ reticulate with fine elevated lines. Antennal joints 12; soles hind tarsi densely pubescent", leading to *P. laticollis* (Drury, 1773), *P. pocularis* Dalman, 1817, *P. californicus* Motschulsky, 1845, *P. imbricornis* (Linnaeus, 1767), and *P. fissicornis* Haldeman, 1846; and "Sensitive surface ♂ uniform. Antennal joints 12; soles of hind tarsi concave and sparsely pubescent", leading to *P. palparis* Say, 1824. And, before the key to the species of *Homaesthesis*, he recorded: "Sensitive surface ♂ uniform; soles of hind tarsi concave and sparsely pubescent; antennae 13–14 jointed." As it is

possible to see, the concept of *Prionus* both in LeConte (1873) and Leng (1884), differentiated this genus from *Homaesthesis* only by the shape of lateral sides of prothorax. As LeConte (1873), Leng (1884) wrote on *P. palparis*: "The tables are exhibited in the above form for the purpose of clearly showing the close relation between the genera, and also the intermediate position with *palparis* occupies." Thus, for LeConte (1873) and Leng (1884), it is not the texture of the surface of antennomere III that separates *Prionus* from *Homaesthesis*, but only the prothoracic shape.

Casey (1912) separated *Prionus* from *Homaesthesis* and *Prionina* in his key: "Antennae having the outer joints sculptured with a longitudinal reticulation of anastomosing raised lines, stout and imbricate (♂) or slender (♀); sides of the prothorax with two acute teeth and an acutely prominent to obtuse or rounded basal angle", leading to *Prionus*; and "Antennae having the surface of the outer joints even and not reticulate with raised lines", leading to *Homaesthesis* and *Prionina*. *Homaesthesis* was separated from *Prionina*: "Sides of the prothorax as in *Prionus*; antennae (♂) with the joints not sinuate beneath at their apices, 12-jointed; posterior tarsi distinctly shorter and broader than in *Prionus* and more scantily clothed beneath", leading to *Prionina*; and "Sides of the prothorax rounded, without trace of teeth, except occasionally a small median denticle; antennae (♂) formed as in *Prionus*, the joints deeply sinuate beneath at their apices or strongly bilobed, closely imbricate, 13- to 14-jointed; posterior tarsi as in *Prionus* but less padded beneath and with more evident long hairs intermingled", leading to *Homaesthesis*. In other words, Casey (1912) saw the main feature separating those genera as the presence of striae in *Prionus*, and their absence in *Homaesthesis* and *Prionina*. There are species currently known (allocated in *Homaesthesis*) with sides of prothorax distinctly explanate (as in many species of *Prionus*), and without striae on the antennomeres. The inclusion of *P. palparis* and *P. simplex* in a different genus (*Prionina*), as proposed by Casey (1912), based mainly in the sides of prothorax, is not coherent. For example, at least in *P. simplex*, the sides of the prothorax can be as in *Homaesthesis* (without distinct anterolateral angle). Casey (1912) also affirmed that the antennomeres in *Prionina* are not sinuate or bilobed, while in *Homaesthesis* they are. However, both forms are present in *Homaesthesis*, rendering this feature useless. Regarding the posterior tarsi, they are not as mentioned by Casey (1912) in *Prionus palparis,* type species of *Prionina*. There are many species in *Prionus* with the length of metatarsi similar to that of the true *P. palparis*, which are not short, although they are broader than usually observed in *Prionus*. However, the metatarsi are quite short in *P. simplex*, but they are not broad. The ventral side of the metatarsi of *P. palparis* and *P. simplex* is more scantily clothed beneath than usually observed in *Prionus*, but it is also so in the species of *P.* (*Homaesthesis*) listed by Casey (1912). The metatarsal spongy pad in species of *Prionus* (*Prionus*) is quite different from those currently placed in *P.* (*Homaesthesis*). For example, in the metatarsomeres of *P. californicus*, the central glabrous area is narrower and well defined and the setae of the pad are dense and uniform, while in *P. emarginatus* the central glabrous area is distinctly less defined and the setae of the pad are not dense and uniform. Thus, since the only remaining character to separate *Homaesthesis* from *Prionina* is prothoracic shape, and we have specimens of at least one species (*P. simplex*) that can be allocated in both genera, we concluded that Linsley (1962) was right when he synonymized *Prionina* with *Homaesthesis*.

Lameere (1912a) considered *Homaesthesis* a synonym of *Prionus* [translation]: "Second subgroup.—The antennae do not reach the middle of the elytra in male, and they have 13 or 14 segments, the segments from the third are sinuate or emarginated, forming two lobes; the anterolateral angle of prothorax is erased. This subgroup corresponds to the genus *Homaesthesis* LeConte, Smiths. Misc. Coll., VI, 1862, p. 288 [*sic*]." Only *Prionus integer* and *P. emarginatus* were considered in the subgroup. However, antennal length is variable, at least in *Prionus emarginatus*. The antennae in this species can distinctly surpass the middle of elytra, although usually they only reach or almost reach the middle. As seen above, Lameere (1919) listed *Prionina* as another synonym of *Prionus*, but it was Linsley (1962) who synonymized the former with *Homaesthesis*. To Lameere (1919), *Prionina* corresponded to his first subgroup of the same group of *Homaesthesis* in Lameere (1912a), and included only *P. palparis*. Thus, to Lameere (1919), *Homaesthesis* and *Prionina* belonged to the same group, but they formed different subgroups.

Linsley (1957) considered *Homaesthesis* as a subgenus of *Prionus*, but did not provide an explanation of his reasoning. Linsley (1962) included five species in this subgenus: *P.* (*Homaesthesis*) *emarginatus*; *P.* (*H.*) *integer*; *P.* (*H.*) *palparis* Say, 1824, *P.* (*H.*) *simplex* (Casey, 1912); and *P.* (*H.*) *rhodocerus* Linsley, 1957. Currently, *Homaesthesis* remains as a subgenus of *Prionus*.

Homaesthesis encompasses species very heterogeneous in general appearance, sharing two features: the absence of striae on antennomeres, and the spongy pad of metatarsomere not dense and not uniform. Hovore &

Turnbow (1984) commented on this: "The number of characters by which *Homaesthesis* may be distinguished has been reduced by the inclusion of *arenarius* (possessing strongly produced and reflexed anterior pronotal angles). For the present, the 12 to 14-segmented antennae, with non-striolate poriferous areas will suffice to differentiate all known *Homaesthesis* from other nearctic subgenera of *Prionus*." Actually, the species currently allocated in the other subgenera of *Prionus*, including non-American species, have striolate antennomeres. However, in some species the striae are slightly marked, and in other they are absent on basal antennomeres, as for example, in *Prionus gahani* Lameere, 1912 (from China), and *P. laticollis* [if the descriptions by Linsley (1962) and Chemsak (1996) are accurate]. This suggests that the complete absence of striae on antennomeres is just an extreme condition, present in species that do not form a monophyletic group based on that feature. Regarding the number of antennal segments, we will comment on that feature below, where we comment on the validity of *Prionus* (*Neopolyarthron*). However, we believe it is possible to keep *P.* (*Homaesthesis*) distinct from *P.* (*Prionus*), based on the combined presence of two features: absence of striae on antennomeres of males; and spongy pad of metatarsomeres sparse (not dense) and uniform in both sexes.

On *Prionus* (*Neopolyarthron*) Semenov, 1899

As seen above, Semenov (1899) erected *Prionus* (*Neopolyarthron*) based on a single feature: the number of antennal segments. In addition, according to him, the "appendages" of antennal joints are articulated. This is not true as the projections of antennomeres are not independently articulated from the antennal segment.

According to Linsley (1962), *Prionus* (*Neopolyarthron*) is characterized by: "Antennae 15- to 20 segmented, poriferous system striolate; posterior tarsi with posterior lobes of third segment without spine at apex, metasternum of male densely pubescent, of female glabrous." Chemsak (1996) followed the same description.

However, the description of metatarsomere III is true (partially) only for species from USA. In Mexican species, currently placed in *Prionus* (*Neopolyarthron*), at least *P.* (*N.*) *aztecus* has metatarsomere III with a very distinct spine at apex. This feature, tarsal shape, also is highly variable among the species of *Prionus*. Thus, it cannot be used as a generic or subgeneric differentiation, because it is not constant in *Prionus* (*Neopolyarthron*) or *Prionus* (*Prionus*). For example, in *Prionus* (*Prionus*) *mexicanus* Bates, 1884, the projection or spine at apex of metatarsomere III is slightly distinct.

The other character used by Linsley (1962) and Chemsak (1996), pubescence of metasternum, also is not a good feature to separate *Prionus* (*Neopolyarthron*) from *Prionus* (*Prionus*). For example, Linsley (1962) wrote on *Prionus* (*Prionus*) *laticollis* (Drury, 1773): on male—"metasternum densely pubescent"; on female—"metasternum glabrous". Thus, as the character also occurs in species of other subgenera, it cannot be used as distinctive. It cannot be used even if combined with the tarsal shape, because this combination (metasternum pubescent in males and glabrous in females, and metatarsomere III not spinose) also occurs in species of *Prionus* (*Prionus*).

Now, using Linsley's concept of *Prionus* (*Neopolyarthron*), we have a single character to separate it from *Prionus* (*Prionus*): the number of antennal segments. However, here we have more inconsistencies. According to Linsley (1962) and Chemsak (1996), *Prionus* (*Prionus*) have antennae with 12 or 13 segments, but in *P.* (*P.*) *mexicanus*, for example, the antennae have 14 segments. Thus, only one more antennomere would separate the two subgenera [at least 15 in *P.* (*Neopolyarthron*); at most 14 in *P.* (*Prionus*)].We believe that this is arbitrary and insufficient to separate two subgenera. Although Linsley (1962) and Chemsak (1996) did not comment on the shape of the projection of antennomeres in males, they are highly variable in the species of *Prionus*. It can be wide, from slightly emarginated to distinctly bilobed, to moderately narrow and not emarginate. Thus, the projection of antennomeres in *P.* (*Neopolyarthron*) is similar to many species of *P.* (*Prionus*).

As all characters used to separate *Prionus* (*Neopolyarthron*) from *Prionus* (*Prionus*) are useless, and there are no other differential character (including the general appearance), we propose the former-as a junior synonym of the latter.

On *Prionus* (*Antennalia*) Casey, 1912

Casey (1912) defined *Prionus* (*Antennalia*): "This group is given subgeneric rank, not solely because of the large and very complex, closely imbricated male antennae, which could very well be considered a simple development of the preceding types, but because of the distinctly different structure of the female antennae, the outer joints being transverse and bilaterally symmetrical. There seems to be but one species, though several forms

represented in my collection by the female alone, which may be held to be subspecific for the present though possibly of higher value, are appended. The preceding group is characterized in one way by the relative scarcity of the females, while here this condition is reversed, the male being apparently much rarer than the female, denoting perhaps a difference in life habits of the two groups."; and "In this group the eyes seem to be much more widely separated in the female than in the male, a feature not particularly evident in the other groups." One more time, the subgenus was defined mainly based on the antennae. Casey (1912) was correct when he suggested that the antennae in males of *Prionus fissicornis* Haldeman, 1846 could be considered a simple development of preceding types [*Prionus* (*Riponus*) = *Prionus* (*Neopolyarthron*)]. Regarding the differences pointed out by Casey on the female antennae (i.e., "the outer joints being transverse and bilaterally symmetrical"), this does not make sense. Apparently, Casey (1912) was talking about the distal portion of antennomeres that are wide, projected and similar on both sides (outer and inner side). This is just a specific feature, and it is not very different from the antennae in females of some other species of *Prionus* mainly on distal antennomeres, as for example in *P. imbricornis*. As to the distance between upper eye lobes, it is not as wide as suggested by Casey (1912). In fact, the distance between upper eye lobes is somewhat variable in the species of *Prionus* (males and females).

Linsley (1962) and Chemsak (1996) redefined the group: "Antennae 25- to 30 segmented, poriferous system striolate; posterior tarsi with posterior lobes without spine at apex." This description encompasses two mistakes. First, the antennae in females of *P. fissicornis* may have less than 25 segments. For example, Casey (1912) affirmed that the antennae in females of *P. fissicornis* have 23- to 24 joints; Casey (1912) described the holotype female of *P.* (*Antennalia*) *fissicornis parviceps* having antennae with 22 segments [this subspecies was synonymized by Linsley (1957)]; Casey (1912) described the holotype female of *P.* (*Antennalia*) *fissicornis transversus* as having antennae with 20 segments [this subspecies was synonymized by Linsley (1957)]; and Casey (1924) described the holotype female of *P.* (*Antennalia*) *thoracicus* as having antennae with 20 segments [this species was synonymized by Linsley (1947)]. The second problem is the tarsal shape. The apex of the metatarsomere III is, at least in some specimens, very distinctly spinose.

Once again, the only difference between *Prionus* (*Neopolyarthron*) and *Prionus* (*Antennalia*) would be the number of antennal segments (metatarsal shape variable in the former). As seen in *Prionus* (*Neopolyarthron*), the number of antennal segments is not sufficient for differentiating among subgenera in *Prionus*. Also, the holotypes of *P.* (*Antennalia*) *fissicornis transversus* and *P.* (*A.*) *thoracicus* have antennae 20-segmented. Thus, the number of antennal segments in *Prionus* (*Neopolyarthron*) and *P.* (*Antennalia*) may be the same (20 segments).

Based on these considerations, it is not possible to separate *Prionus* (*Antennalia*) from *Prionus* (*Neopolyarthron*), and thus, also from *Prionus* (*Prionus*).

***Prionus* Geoffroy, 1762**

Prionus Geoffroy, 1762: 198.

Type species: *Cerambyx coriarius* Linnaeus, 1758 [designation by Latreille (1810)—(see also Kerzhner, 1991: 123, designation under the plenary powers)].

Size from moderately small (about 18 mm) to large (about 50 mm). Integument from light brown to blackish.

Male. Head from slightly to distinctly elongate behind eyes; dorsal longitudinal sulcus distinct from clypeus to pronotal margin or, at most, only surpassing posterior ocular edge, deep or not between antennal tubercles; dorsal surface coarsely, abundantly punctate, often coarser and more abundant behind upper eye lobes. Eyes large; width interspecific variable; distance between upper eye lobes from distinctly smaller than width of a lobe to distinctly larger. Ocular carina absent or present; when present, usually slightly more elevated near apex. Submentum well-marked; from slightly to distinctly depressed. Palpi long; labial palpus from distinctly shorter to almost the same length of maxillary palpus; apex of last palpomeres equal in width to about 0.4 times its length, but interspecifically variable when compared with its base: from slightly wider to more than twice or even triple in width. Postclypeus dorsally concave. Mandibles coarsely punctate laterally, shorter than head, usually as long as one-half length or a little longer; outer distal one-third curved forming a right angle, or nearly so, with basal two-thirds (except in *P. arenarius*); apex distinctly acute; inner margin without teeth, but as a continuous plate from apex to near base, where there is an abrupt slope; dorsal carina distinct, moderately narrow or wide. Antennae from 12- to 30-

segmented (sometimes variable intraspecifically); reaching from just after middle to distal one-fourth; scape from about 1.4 times to twice longer than distal width, short or elongate, shorter than antennomeres III, not or slightly surpassing posterior ocular edge, ventrally depressed; antennomeres III–X imbricate, more so at basal ones, sometimes distinctly bi-flabellate, bilobed or very slightly projected at apex; antennomeres XI often variable in length and shape, including intraspecifically; poriferous system of antennomeres III–XI distinctly finely longitudinally striolate or dull.

Prothorax transverse; antero- and posterolateral angles variable; side with distinct tooth laterally. Pronotum convex, with callosities slightly marked (sometimes absent or almost so), punctation variable, from glabrous to distinctly setose. Prosternum distinctly elevated toward center. Apex of prosternal process rounded, with long, abundant setae. Scutellum glabrous or distinctly setose (sometimes only on lateral base). Elytra glabrous, punctate; longitudinal carina from slightly to very distinct; sutural apex denticulate or, at least, projected. Membranous wings well-developed, with complete venation. Prosternal process surpasses procoxae. Metasternum not reduced, setose. Metepisterna not distinctly narrowed toward apex, about 2.5–3 times longer than wide. Process of ventrite I acute at apex, usually attaining middle of metacoxae. Ventrites glabrous or pubescent (all or part of them); center-distal one-half to one-third of ventrite V depressed, and distal edge emarginated. Legs not distinctly long; pro- and mesotibiae about as long as pro- and mesofemora; metatibiae from 1.2 to 1.4 times longer than metafemora. Tarsi variable in size and shape.

Female: Distance between upper eye lobes from equal to distinctly wider than in males (quite variable intraspecifically). Antennae shorter than in male, not or slightly imbricate at basal antennomeres, 12- to 33-segmented (sometimes variable intraspecifically). Membranous wings as in male. Metasternum about as long as mesofemur to distinctly shorter than mesofemur. Metasternum and metepisterna from glabrous to setose. Ventrites glabrous, or partially setose (mainly I); ventrite V trapezoidal, with posterior edge from not to slightly emarginated.

American distribution: from southern Canada to central Mexico.

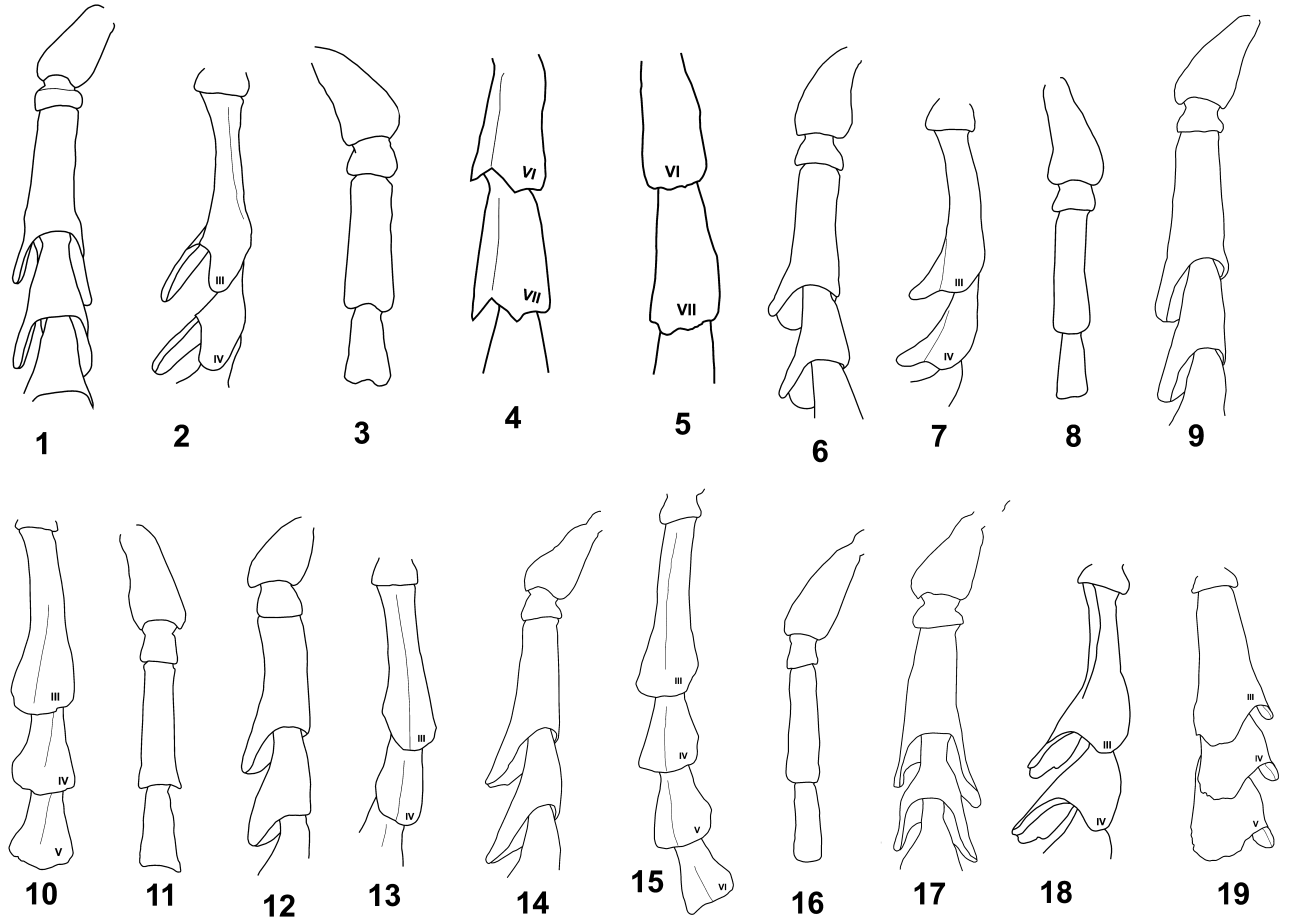
Remarks. We believe American *Prionus* are best divided into two subgenera which can be separated in the key below:

1. Poriferous system of antennomeres not striolate in males; spongy setal pad of metatarsomeres not dense or uniform, and not separated by a well-marked longitudinal sulcus in both sexes . . . . . *Prionus* (*Homaesthesis*)
   Poriferous system of antennomeres, at least in part, striolate in males; spongy setal pads of metatarsomeres dense, uniform, and separated by a narrow, well-marked longitudinal sulcus in both sexes. . . . . *Prionus* (*Prionus*)

Provisional key to species of *Prionus* (*Homaesthesis*)

(Observations: specimens without antennae usually are not identifiable; nor are we able to separate females of *P. integer* and *P. geminus* with confidence)

1. Antennae with 12 segments. 2
- Antennae with 13 or 14 segments 5
2(1). Metatarsomeres broadly expanded, flattened 3
- Metatarsomeres narrow, elongate 4
3(2). Imbrication of antennae in males strongly bifurcate; metatarsomeres fimbriate laterally with long setae in both sexes. . . . . *P.* (*H.*) *arenarius*
- Imbrication of antennae in males not bifurcate; metatarsomeres without long setae laterally in both sexes . . . . . *P.* (*H.*) *spinipennis*
4(2). Distance between upper eye lobes equal to, at most, one-fourth of the greatest width of the head . . . . . *P.* (*H.*) *palparis*
- Distance between upper eye lobes equal to more than one-third of the greatest width of the head . . . . . *P.* (*H.*) *simplex*
5(1). Pronotum pubescent, at least laterally (males) 6
- Pronotum glabrous (females) 8
6(5). Pronotum in males only distinctly pubescent laterally . . . . . *P.* (*H.*) *integer*
- Pronotum in males distinctly pubescent throughout 7
7(6). Imbrication of antennae in males strongly bifurcate . . . . . *P.* (*H.*) *emarginatus*
- Imbrication of antennae in males not bifurcate. . . . . *P.* (*H.*) *geminus* **sp. nov.**
8(5). Antennomeres IV–XII with imbrication distinctly emarginated centrally (mainly after VI) (Fig. 4) . . . . . *P.* (*H.*) *emarginatus*
- Antennomeres IV–XII with imbrication not centrally emarginated (Fig. 5) (sometimes slightly emarginated). . . . . *P.* (*H.*) *integer* and *P.* (*H.*) *geminus*



FIGURES 1–19. Antennae. **1–4**, *Prionus* (*Homaesthesis*) *emarginatus*: **1**, male, scape, pedicel, antennomeres III–V, dorsal view; **2**, male, pedicel, antennomeres III–IV, latero-ventral view; **3**, female, scape, pedicel, antennomeres III–IV, dorsal view; **4**, female, antennomeres VI–VII, ventral view. **5–8**, *P.* (*H.*) *geminus* sp. nov.: **5**, female, antennomeres VI–VII, ventral view; **6**, male, scape, pedicel, antennomeres III–IV, dorsal view; **7**, male, pedicel, antennomeres III–IV, latero-ventral view; **8**, female, scape, pedicel, antennomeres III–IV, dorsal view. **9–11**, *P.* (*H.*) *palparis*: **9**, male, scape, pedicel, antennomeres III–IV, dorsal view; **10**, male, antennomeres III–V, ventral view; **11**, female, scape, pedicel, antennomeres III–IV, dorsal view. **12–13**, *P.* (*H.*) *simplex*, male: **12**, scape, pedicel, antennomeres III–IV, dorsal view; **13**, pedicel, antennomeres III–IV, ventral view. **14–16**, *P.* (*H.*) *spinipennis*: **14**, male, scape, pedicel, antennomeres III–IV, dorsal view; **15**, male, pedicel, antennomeres III–VI, ventral view; **16**, female, scape, pedicel, antennomeres III–IV, dorsal view. **17–19**, *P.* (*H.*) *arenarius*, male: **17**, scape, pedicel, antennomeres III–IV, dorsal view; **18**, pedicel, antennomeres III–IV, latero-ventral view; **19**, pedicel, antennomeres III–V, ventral view.

***Prionus* (*Homaesthesis*) *arenarius* Hovore, 1981**

(Figs. 17–19, 52–53)

Prionus (*Homaesthesis*) *arenarius* Hovore, 1981: 453; Hovore & Turnbow, 1984: 4; Chemsak *et al.*, 1992: 21 (checklist); Monné & Giesbert, 1994: 15 (checklist); Monné, 1995: 56 (cat.); Chemsak, 1996: 117; Monné & Hovore, 2005: 19 (checklist); 2006: 19 (checklist); Özdikmen & Turgut, 2009: 410; Bezark & Monné, 2013: 26 (checklist).

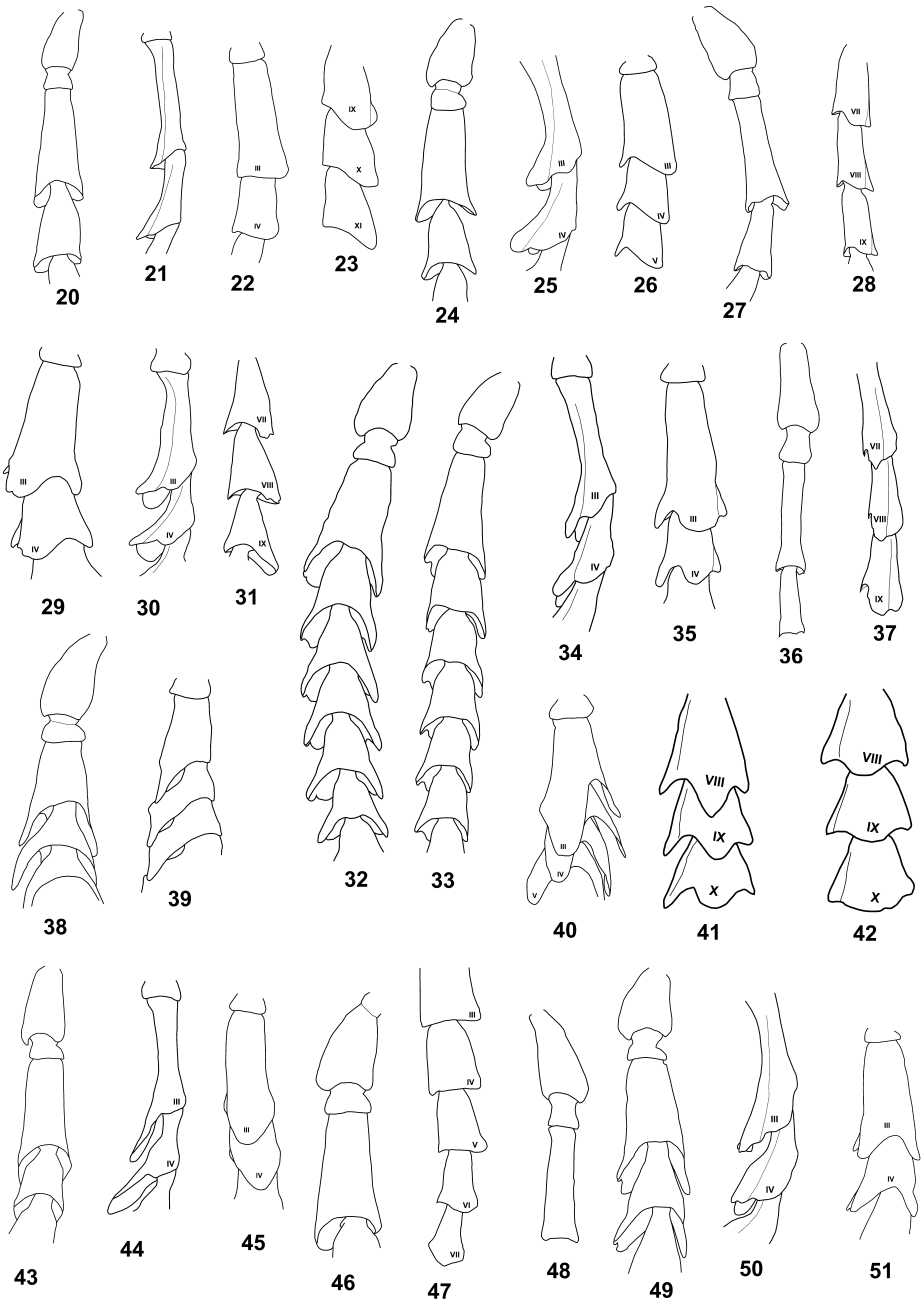
Male (Figs. 52–53). Integument from reddish-brown to brown (occasionally, pale-brown); parts of mandibles, genal apex, parts of scape and pedicel, pronotal margins, inferior margins and distal extremity of femora, margins of tibiae, from dark-brown to black (in pale-brown specimens, usually only the mandible is partially black with other areas reddish-brown).

Head, excluding mandibles, from 1.0 to 1.1 times as long at central area as prothorax, moderately elongate behind eyes (distance from posterior ocular edge to the prothorax from slightly shorter to slightly longer than greatest length of upper eye lobe). Longitudinal dorsal furrow distinct from clypeus to near prothoracic edge

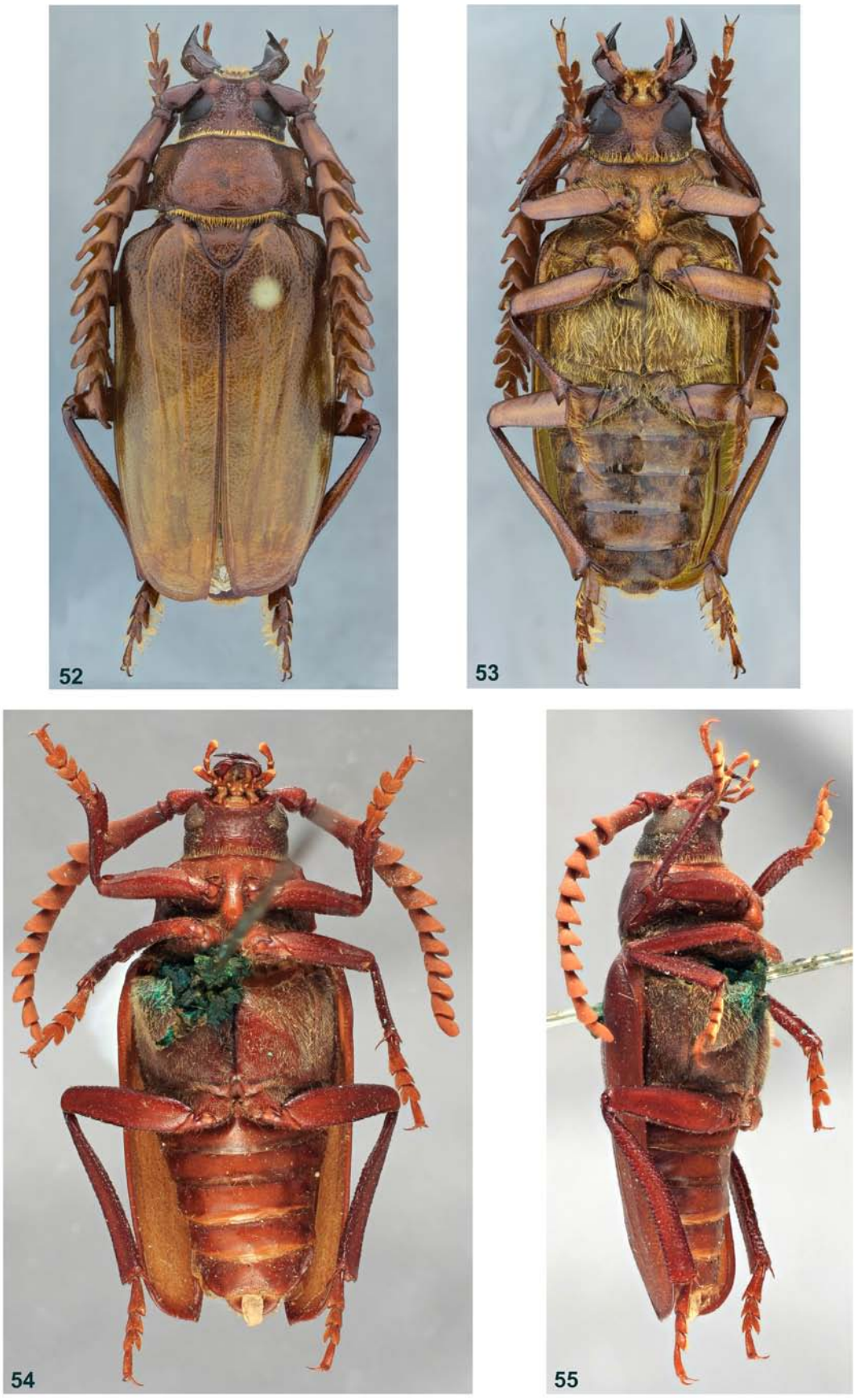
(occasionally reaching anterior margin of prothorax), between middle of eyes (often almost posterior ocular edge) and clypeus placed inside a moderately, wide sulcus (broader and deeper toward clypeus) (sometimes slightly or not distinct). Area on each side of longitudinal sulcus, between clypeus and level of posterior ocular edge, coarsely, deeply, confluently punctate; area around longitudinal furrow, between posterior ocular edge and prothorax, with sub-rhombus (sometimes irregular), impunctate region; dorsal area close to the prothorax coarsely, confluently punctate, but distinctly finer than area between eyes and antennal tubercles; area close to ocular carinae slightly depressed, coarsely, confluently, deeply punctate; dorsal surface with short, sparse setae between clypeus and posterior ocular edge, distinctly more abundant near prothorax; area behind eyes coarsely, confluently punctate (occasionally vermiculate near apex of lower eye lobe), with long, moderately sparse setae, more abundant on some regions. Antennal tubercles coarsely, abundantly punctate on basal one-half, gradually sparser and finer toward base of distal one-fourth, that usually is smooth. Postclypeus centrally narrowed at inner margin (sometimes this area is flat or depressed); uniformly oblique toward anteclypeus, or with distal one-third distinctly inclined downward; coarsely, abundantly punctate, more abundant laterally, with long, moderately abundant setae; from almost impunctate to coarsely, abundantly punctate centrally, with long, sparse setae (occasionally almost glabrous). Anteclypeus with anterior edge concave; shining, glabrous and impunctate (often with long, sparse setae on latero-basal region). Labrum centrally depressed; with long, dense setae, mainly laterally and near anterior edge. Eyes proportionally large; distance between upper eye lobes and between lower eye lobes from 0.8 to 0.9 times length of scape. Submentum trapezoid, centrally depressed; coarsely, confluently, shallowly punctate; with moderately long, sparse setae (usually more abundant laterally); anterior edge distinctly carinate. Apex of labial palpi attaining about middle of maxillary palpomere IV. Mandibles about as long as 0.9 times length of head; latero-basal one-third depressed; outer distal one-third not strongly curved forming an obtuse angle with basal two-thirds. Antennae with 12 segments; attaining about base of distal one-third of elytra (occasionally reaching almost distal one-fourth). Scape, at most, attaining posterior ocular edge, enlarged toward apex; dorsally moderately coarsely, sparsely punctate on basal two-thirds, finer and sparser on distal one-third; on latero-outer face coarsely, confluently punctate; on latero-inner face finely, very sparsely punctate. Antennomere III (including distal projection) from 1.9 to 2.4 times longer than scape, distinctly enlarged toward apex (distal width at apex of projection from 2.0 to 2.8 times basal width); on dorsal view, imbrication very distinct and projected (Fig. 17); on ventral view, apex of imbrication distinctly emarginated (Figs. 18, 19), mainly on inner side; moderately coarsely, sparsely punctate dorsally. Antennomere IV about as long as 0.8 times III; microsculptured on basal half dorsally, and with fine, sparse punctures on distal half; imbrication as in III. Antennomeres V–XI dorsally microsculptured; imbrication as in III. Antennomere XII elongate; on dorsal view with two lobes: the first about middle of outer face (usually the largest); the second about distal one-third (sometimes at the same level of the first one) of inner side that could be absent or almost so, or as large as the first one.

Maximum prothoracic width from 0.7 to 0.9 times width of elytral base; anterolateral angle slightly projected forward, from slightly rounded to truncate toward first lateral tooth; first lateral tooth small or moderately large, acute (sometimes only projected and obtuse), placed close to anterolateral angle; second lateral tooth large, distinctly acute, usually placed just before middle; margin between second tooth and posterolateral angle from subparallel to slightly convergent (often sinuous at middle); posterolateral tooth projected, acute; basal margin sinuous; distal margin almost straight. Pronotum centrally from flat to slightly convex, not strongly explanate laterally; callosities usually distinct; disc coarsely, moderately abundantly punctate; more abundantly laterally, confluently punctate; lateral areas with short, sparse setae. Prosternum finely asperate; with long, abundant setae. Prosternal process not longitudinally sulcate; with long, abundant setae. Elytra finely, moderately sparsely punctate; each elytron with two carinae, fused at distal one-fourth; sutural spine short. Metasternum microsculptured, less so around metasternal suture; with long, abundant setae throughout. Metepisterna with sculpture and setae as metasternum.

Ventrites I–IV microsculptured, finely, sparsely punctate (usually, coarser, more abundant on central area near apex); ventrites I–IV sparsely (sometimes moderately abundant) setose (setae gradually shorter and sparser from I to IV); ventrite V moderately finely, abundantly punctate throughout, with moderately long, abundant setae laterally, shorter and sparser toward middle. Tarsomeres I–III wide, distinctly flattened; tarsomeres I–II acute at apex (I often with short spine); pro- and mesotarsomeres I–III with spongy setal pads on ventral surface (on I only on distal one-third; on II only on distal two-thirds); spongy setal pads of metatarsi present only laterally on distal one-third of III; metatarsomere I about as long as 0.7 times II–III together; tarsomeres I–III with long, abundant setae laterally (mainly at metatarsi).



FIGURES 20–51. Antennae. **20–23**, *Prionus* (*Prionus*) *pocularis*: **20**, male, scape, pedicel, antennomeres III–IV, dorsal view; **21**, male, antennomeres III–IV, lateral view; **22**, male, antennomeres III–IV, ventral view; **23**, female, antennomeres IX–XI, ventral view. **24–28**, *P.* (*P.*) *poultoni*: **24**, male, scape, pedicel, antennomeres III–IV, dorsal view; **25**, male, antennomeres III–IV, latero-ventral view; **26**, male, antennomeres III–V, ventral view; **27**, female, scape, pedicel, antennomeres III–IV, dorsal view; **28**, female, antennomeres VII–IX, ventral view. **29–32**, *P.* (*P.*) *aztecus*: **29**, male, antennomeres III–IV, ventral view; **30**, male, antennomeres III–IV, latero-ventral view; **31**, female, antennomers VII–IX, ventral view; **32**, male, scape, pedicel, antennomeres III–VIII, dorsal view. **33–37**, *P.* (*P.*) *mexicanus*: **33**, male, scape, pedicel, antennomeres III–VIII, dorsal view; **34**, male, antennomeres III–IV, latero-ventral view; **35**, male, antennomeres III–IV, ventral view; **36**, female, scape, pedicel, antennomeres III–IV, dorsal view; **37**, female, antennomeres VII–IX, ventral view. **38–41**, *P.* (*P.*) *fissicornis*: **38**, male, scape, pedicel, antennomeres III–V, dorsal view; **39**, male, antennomeres III–V, lateral view; **40**, male, antennomeres III–V, ventral view; **41**, female, antennomeres VIII–X, ventral view. **42–45**, *P.* (*P.*) *imbricornis*: **42**, female, antennomeres VIII–X, ventral view; **43**, male, scape, pedicel, antennomeres III–IV, dorsal view; **44**, male, antennomeres III–IV, lateral view; **45**, male, antennomeres III–IV, ventral view. **46–48**, *P.* (*P.*) *laticollis*: **46**, male, scape, pedicel, antennomere III, dorsal view; **47**, male, antennomeres III–VII, ventral view; **48**, female, scape, pedicel, antennomere III, dorsal view. **49–51**, *P.* (*P.*) *lecontei*, male: **49**, scape, pedicel, antennomeres III–IV, dorsal view; **50**, antennomeres III–IV, latero-ventral view; **51**, antennomeres III–IV, ventral view.



FIGURES 52–55. **52–53**, *Prionus* (*Prionus*) *arenarius*, male: **52**, dorsal habitus; **53**, ventral habitus. **54–55**, *Prionus* (*Prionus*) *simplex*, holotype male: **54**, ventral habitus; **55**, lateral habitus.

Female. Not examined.

Dimensions in mm (male). Total length (including mandibles), 18.1–34.5; prothoracic length at center, 2.3–4.9; greatest prothoracic width, 4.5–10.0; humeral width, 6.3–12.7; elytral length, 12.6–22.5.

Geographical distribution. USA [Texas (Hovore, 1981), New Mexico (Hovore, 1981)].

Types, type locality. Holotype male described from USA (Texas, Ward County, Monahans Sandhills State Park), deposited at CAS; 140 paratypes, males and females, from USA (Texas), deposited at CAS, ESSIG, TNM, MZSP, and in the following private Collections: N. Rulien, R. Duff, F. T. Hovore (currently at CAS), R. L. Penrose, D. C. Carlson, D. G. Marqua, W. H. Tyson, A. E. Lewis, J. Cope, R. L. Surdick, J. M. Cicero, and J. Micheli. Paratype figured at Bezark (2016).

Hovore (1981) recorded on the type locality: "…from Texas, Webb County, Monahans Sandhills State Park, …" Hovore & Turnbow (1984) corrected the mistake: "Hovore (1981) incorrectly cited Monahans Sandhills State Park as located in "Webb County;" it is in Ward County, Texas."

Material examined. USA, *Texas*: Monahans Sandhills State Park, 14 males, V.26.1997, J. E. Wappes col. (ESSIG); 2 males, VI.2.1997, J. E. Wappes col. (MZSP); 4 males, VI.2.1997, J. E. Wappes col. (ESSIG); (Ward County), 7 paratypes male, V.29.1977, N. Rulien col. (ESSIG); paratype male, V.29.1977, N. Rulien col. (MZSP); 2 males, V.30.2003, B. D. Streit col. (ESSIG). *New Mexico*: Mescalero Sands (Chaves County), 3 males [no date or collector indicated], (ENPC); 2 males, same except: VI.9.1998, J. E. Wappes col. (ESSIG); 1 male, VII.13.1999, J. E. Wappes col. (ESSIG); (Eddy County), 1 male, V.31.2003, B. D. Streit col. (ESSIG).

Remarks. *Prionus* (*H.*) *arenarius* is easily recognized by the broad, flattened posterior tarsi with conspicuous setal fringes.

***Prionus* (*Homaesthesis*) *spinipennis* Hovore & Turnbow, 1984**

(Figs. 14-16, 69-72)

Prionus (*Homaesthesis*) *spinipennis* Hovore & Turnbow, 1984: 1; Chemsak *et al.*, 1992: 22 (checklist); Monné & Giesbert, 1994: 16 (checklist); Monné, 1995: 57 (cat.); Chemsak, 1996: 121; Monné & Hovore, 2005: 21 (checklist); 2006: 20 (checklist); Özdikmen & Turgut, 2009: 410; Bezark & Monné, 2013: 27 (checklist).

Male (Figs. 69-70). Head dorsally from brown to reddish-brown; ventrally always lighter than dorsally; area behind middle of eyes from dark-brown to brown; excluding mandibles, longer than prothorax at central area (occasionally, as long as prothorax), slightly elongate behind eyes (distance from posterior ocular edge to the prothorax smaller than greatest length of upper eye lobe). Longitudinal dorsal furrow distinct from clypeus to prothoracic edge; between antennal tubercles (sometimes from middle of eyes) placed inside a moderately deep sulcus (sometimes slightly distinct). Area between middle of antennal tubercles and eyes coarsely, confluently, deeply punctate; area from middle of antennal tubercles and clypeus distinctly less coarsely and more sparsely punctate; dorsal area close to apex of upper eye lobe slightly depressed; setae between clypeus and posterior ocular edge very short and sparse; punctures on dorsal area between eyes and prothorax, coarse, abundant, gradually finer toward prothorax; setae on this latter area from almost absent to moderately abundant, but always short; area behind upper eye edge coarsely, confluently punctate (finer from eyes to prothorax), with short, sparse setae (sometimes almost glabrous); area behind lower eye lobes moderately coarsely punctate (punctures confluent near eyes, less so toward prothorax), with setae longer and more abundant than area behind upper eye lobes. Antennal tubercles coarsely, moderately abundantly punctate on basal half, impunctate on distal half (usually with punctures on the side facing the eyes). Postclypeus centrally brown to reddish-brown, moderately coarsely punctate on base, impunctate toward apex; dark-brown to black laterally, coarsely, usually partially confluently punctate. Anteclypeus usually not well separated from postclypeus, shining, glabrous, impunctate. Labrum coarsely, moderately abundantly punctate; with long, sparse setae, denser centrally close to apex. Eyes large; distance between upper eye lobes from 0.5 to 0.6 times length of scape; distance between lower eye lobes from 0.6 to 0.8 times length of scape. Submentum trapezoid, elevated from base toward mentum (sometimes slightly sloped toward middle and elevated toward anterior margin); surface coarsely, confluently punctate, usually somewhat vermiculate; with short, sparse setae; anterior edge from dark-brown to black, distinctly carinate. Apex of labial palpi attaining from basal one-third to middle of maxillary palpomere IV. Mandibles from dark-brown to reddish-brown, usually slightly lighter on inner side, except inner margin from about middle to apex, that are dark-brown or

black; latero-basal one-third depressed. Antennae with 12 segments, nearly attaining base at distal one-third of elytra. Scape from brown to reddish-brown, usually darker laterally and distally; not attaining posterior ocular edge, enlarged toward apex; finely, sparsely punctate dorsally; on latero-outer face moderately coarsely punctate, mainly on basal one-third; on latero-inner face finely, sparsely punctate. Antennomere III from 1.7 to 2.0 times longer than scape, distinctly enlarged toward apex (distal width equal to about 1.8 times basal width); on dorsal view, imbrication distinct, clearly projected (Fig. 14); on lateral view, apex of imbrication not emarginated; on ventral view (Fig. 15), apex of imbrication widely emarginated; dorsal surface moderately finely, sparsely punctate, except on distal one-fourth which is microsculptured. Antennomere IV about as long as 0.8 times III; moderately finely, sparsely punctate near inner side; imbrication as in III. Imbrication of antennomeres V–XI as in III (occasionally, slightly emarginated laterally). Antennomere XII about as long as XI; not appendiculate or partially divided.

Maximum prothoracic width from shorter (0.8 times) to equal to elytral base; anterolateral angles slightly projected forward, rounded or truncate toward first lateral tooth; first lateral tooth large (occasionally somewhat small), acute at apex, placed close to anterolateral angle; second lateral tooth large, spined, apex usually slightly projected backwards, often distinctly larger than first tooth; posterolateral angle acute, projected; basal margin sinuous; distal margin centrally emarginated or not. Pronotum dark-brown, often lighter laterally; usually centrally convex, laterally explanate; on each side of latero-basal one-third with C-like callosity; disc moderately finely, abundantly punctate, impunctate on a triangular center-basal area; laterally coarsely, abundantly punctate; lateral areas close to the lateral angles with some setae. Prosternum densely punctate; with long, abundant setae, mainly near anterior margin. Prosternal process not sulcate; with moderately long, abundant setae laterally; center with short, sparse setae. Elytra from dark-brown to brown (often with black areas), coriaceous, moderately coarsely, abundantly punctate; each elytron with three carinae, the innermost two fused at distal one-fourth; sutural spine very distinct. Metasternum centrally depressed toward metacoxae; finely, very densely punctate, less so on a subtriangular area along distal one-half of metasternal suture; with long, dense setae throughout. Metepisterna with sculpture and setae as that along sides of metasternum.

Ventrite I with moderately long, sparse setae, mainly on process (occasionally with setae very sparse); ventrites I–IV microsculptured, finely, moderately abundantly punctate; ventrites II–IV with short, sparse setae (sometimes more abundant); ventrite V densely, moderately coarsely punctate centrally, with short, abundant setae, finely punctate laterally, with short, sparse setae. Legs from brown to reddish-brown. Tarsomeres I–III wide, not slender; tarsomeres I–II acute at apex (occasionally with short spine or somewhat rounded); pro- and mesotarsomeres I–III with spongy setal pads on ventral surface; spongy setal pads of metatarsi more or less distinct, only laterally on distal half of III; metatarsomere I about as long as II–III together; tarsomeres I–III without very long setae laterally.

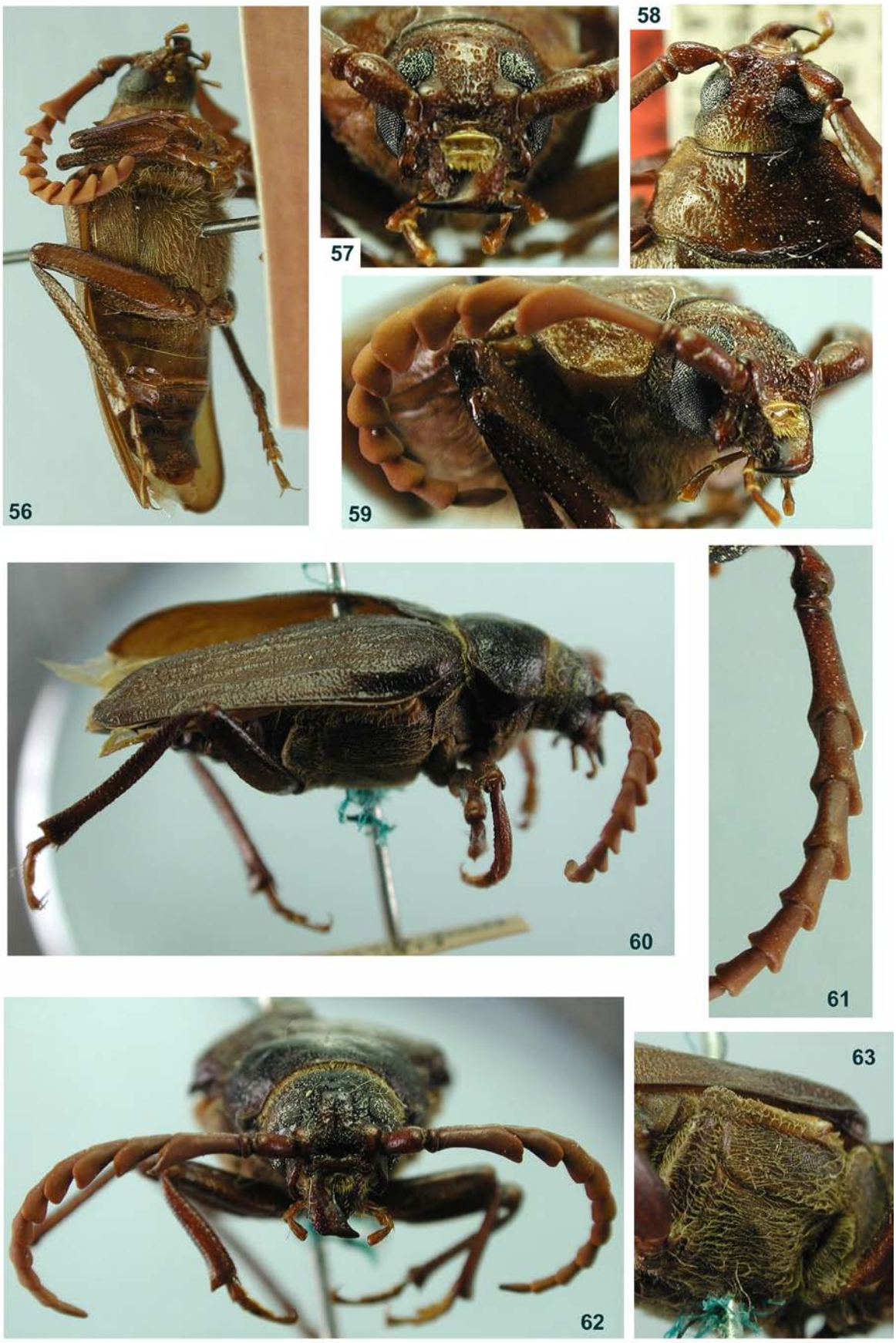
Female (Figs. 71-72). Head, excluding mandibles, shorter than prothorax at middle. Dorsal sculpture on face of head and area behind eyes sparser than in male. Distance between upper eye lobes equal to 0.75 times length of scape; distance between lower eye lobes equal to 0.8 times length of scape. Submentum as in male. Mandible as in male. Antennae nearly reaching middle of elytra; scape more slender than in male, also not attaining posterior ocular edge; antennomere III (Fig. 16) 1.1 times as long as scape; antennomeres III–XI without imbrications, distinctly projected only after VII at outer distal side. Prothorax as in male; pronotal disc more sparsely punctate than in male. Metasternum and metepisterna glabrous.

Dimensions in mm (male/female). Total length (including mandibles), 20.5–31.8/26.1; prothoracic length at center, 2.9–4.2/3.5; greatest prothoracic width, 6.0–9.0/8.0; humeral width, 7.0–11.5/9.0; elytral length, 14.5–21.3/18.7.

Geographical distribution. USA [Texas (Hovore & Turnbow, 1984), New Mexico (Chemsak, 1996)].

Types, type locality. Holotype male from USA (Texas, Ward County, Monahans Sandhills State Park), deposited at CAS. Thirty six paratypes deposited at: TAMU, ESSIG, USNM, MCZ, and in the following private collections: R. H. Turnbow, F. T. Hovore (now at CAS), R. L. Penrose, M. E. Rice, and J. E. Wappes.

Material examined. USA, *Texas*: Crane County, 2 males, VIII.21.1994, J. E. Wappes col. (MZSP); 1 mile E Monahans (Ward County), 2 males, VIII.21.1982, T. P. Friedlander col. (ESSIG); 11 males, IX.4.1994, F. T. Hovore col. (ESSIG); Sandhill (Crane County), 1 male, VII.16–17.1996, J. E. Wappes col. (ESSIG); 10 males, VIII.11–16.1996, J. E. Wappes col. (ESSIG); 12 miles NE Kermit (Winkler County), 1 male, IX.25.1997, J. E. Wappes col. (ESSIG); 12 miles NE Kermit (Winkler County), 1 female, IX.25.1997, J. E. Wappes col. (ESSIG). *New Mexico*: Chaves County, 2 males, Mescalero Sands [no collector or date indicated] (ENPC).



FIGURES 56–63. **56–59**, *Prionus* (*Homaesthesis*) *linsleyi*, holotype male: **56**, ventral habitus; **57**, head, frontal view; **58**, head, dorsal view, **59**, head, lateral view. **60–63**, *Prionus* (*Homaesthesis*) *rhodocerus*, holotype male: **60**, lateral habitus; **61**, antennomeres; **62**, head, ventral view; **63**, metepisternum and metasternum. Photographs by Larry G. Bezark.

Remarks. The metatarsi of *Prionus* (*H.*) *spinipennis* are similar to that of *P.* (*H.*) *arenarius* being expanded and flattened. However, in the latter the imbrication of antennomeres is not distinctly emarginate.

***Prionus* (*Homaesthesis*) *palparis* Say, 1824**

(Figs. 9-11, 73-76)

Prionus palparis Say, 1824: 327; Haldeman, 1847b: 31; LeConte, 1852a: 108; Melsheimer, 1853: 100 (cat.); White, 1853: 17; LeConte, 1859a: 48; LeConte, 1859b: 185 (distr.); Lacordaire, 1868: 61 (note); Horn, 1872: 390 (distr.); LeConte, 1873: 288, 289; LeConte & Horn, 1883: 274; Leng, 1884: 57, 59; Henshaw, 1885: 94 (checklist); Blanchard, 1887: 86; Fall & Cockerell, 1907: 191 (distr.); Lameere, 1912a: 246; 1913: 78 (cat.); 1919: 139; Knowlton & Wood, 1950: 10 (distr.); Alexander, 1958: 49 (distr.); Barbour *et al.*, 2011: 590.

Prionus (*Homaesthesis*) *palparis*; Linsley, 1962: 22; Hovore & Turnbow, 1984: 4 (key); Chemsak *et al.*, 1992: 22 (checklist); Monné & Giesbert, 1994: 16 (checklist); Monné, 1995: 57 (cat.); Chemsak, 1996: 120; Heffern, 1998a: 6 (distr.); Monné & Hovore, 2005: 20 (checklist); 2006: 19 (checklist); Özdikmen & Turgut, 2009: 410; Bezark & Monné, 2013: 27 (checklist).

Prionus palpalis; Crotch, 1873: 83; 1880: 83. [error]

Prionina palparis; Casey, 1912: 252.

Male (Figs. 73-74). Integument from dark-brown to nearly black (often dark-brown with nearly black areas); metasternum and ventrites from dark-brown to reddish-brown (distal margin of some ventrites frequently yellow-brown); antennomeres lighter from V to XII (from dark-brown to reddish-brown).

Head, excluding mandibles, about as long at central area as prothorax, moderately elongate behind eyes (distance from posterior ocular edge to the prothorax equal to about 0.7 times greatest length of upper eye lobe). Longitudinal dorsal furrow distinct from clypeus to prothoracic edge, between middle of eyes and clypeus placed inside wide sulcus (broader and deeper between antennal tubercles). Area on each side of longitudinal sulcus, between clypeus and level of posterior ocular edge, coarsely, deeply punctate (punctures confluent between antennal tubercles); area around longitudinal furrow, between posterior ocular edge and prothorax, with irregular shining, almost impunctate region; dorsal area close to the prothorax coarsely, confluently punctate, as on area between eyes, or distinctly finer around longitudinal furrow and coarser behind eyes; area close to the region at apex of ocular carinae slightly depressed, coarsely, confluently, deeply punctate; dorsal surface with short (sometimes slightly long), sparse setae between clypeus and posterior ocular edge (often more abundant between antennal tubercles or near prothorax); area behind eyes coarsely, confluently punctate (usually rugose near apex of lower eye lobe), with long, moderately sparse setae, more abundant on some regions. Antennal tubercles coarsely, abundantly punctate on base, gradually sparser and finer toward about middle, smooth toward apex. Postclypeus centrally narrowed at inner margin; laterally coarsely, abundantly punctate laterally, with long, moderately abundant setae; almost impunctate, glabrous or nearly so centrally. Anteclypeus with anterior edge concave; tumid on center-basal one-half; shining, glabrous and impunctate. Labrum not depressed centrally; with long, dense setae, mainly laterally and near anterior edge. Eyes large; distance between upper eye lobes equal to about 0.6 times length of scape; distance between lower eye lobes equal to about 0.7 times length of scape. Submentum trapezoid, distinctly depressed; coarsely punctate-rugose; with moderately long, sparse setae; anterior edge distinctly carinate. Apex of labial palpi nearly attaining middle of maxillary palpomere IV; apex of last maxillary and labial palpomere about as wide as 3.0 times its basal width. Mandibles slightly longer than 0.5 times length of head; latero-basal one-third depressed; outer distal one-half not strongly curved forming an obtuse angle with basal one-half. Antennae with 12 segments; nearly attaining middle of elytra. Scape not attaining posterior ocular edge, slightly enlarged toward apex; finely, sparsely punctate dorsally (more abundant on basal one-third); on latero-outer face slightly coarsely, more abundantly punctate; punctures on latero-inner face as outer face, but sparser. Antennomere III (including distal projection) 1.7 times longer than scape, distinctly enlarged toward apex (distal width at apex of projection twice basal width); on dorsal and ventral view, imbrication very distinct and projected (Figs. 9, 10); on ventral view, apex of imbrication not emarginated (Fig. 10); moderately finely, sparsely punctate dorsally. Antennomere IV about as long as 0.7 times III; moderately finely, sparsely punctate dorsally on inner side; imbrication as in III. Antennomeres V–XI dorsally microsculptured; imbrication as in III (slightly emarginated laterally, at apex of XI). Antennomere XII elongate, not appendiculate or partially divided.

Maximum prothoracic width about 0.8 times width of elytral base; anterolateral angle slightly or not projected forward, from slightly rounded to truncate toward first lateral tooth; first lateral tooth moderately small, acute, placed close to anterolateral angle; second lateral tooth large, distinctly acute, placed just before middle; margin between second tooth and posterolateral angle convergent; posterolateral tooth projected, obtuse; basal margin sinuous, centrally emarginated or not; distal margin almost straight centrally. Pronotum from flat to slightly convex centrally, laterally not strongly explanate; callosities not distinct; disc finely, moderately abundantly punctate; slightly coarser punctate laterally, mainly toward lateroposterior angle; lateral areas, near antero- and posterior angles with moderately long setae. Prosternum moderately coarsely, abundantly punctate; with long, abundant setae. Prosternal process not longitudinally sulcate; with long, abundant setae. Elytra finely, moderately sparsely punctate, usually partially finely rugose; each elytron with two carinae; area between carinae and close to distal one-half of outer carinae depressed; sutural spine short. Metasternum microsculptured, less so around metasternal suture; with long, abundant setae throughout. Metepisterna with sculpture and setae laterally as that on metasternum.

Ventrites I–IV microsculptured, finely, sparsely punctate (more abundant centrally and coarsely laterally); ventrite I with long, moderately abundant setae, mainly centrally; ventrite II–IV sparsely setose (setae gradually shorter and sparser from II to IV); ventrite V moderately coarsely, abundantly punctate throughout, with moderately short setae, more abundant on distal center. Tarsomeres I–III moderately slender, not distinctly flattened; pro- and mesotarsomeres I–II, and metatarsomeres I–III acute at apex; pro- and mesotarsomeres I–III with spongy setal pads on ventral surface; spongy setal pads of metatarsi distinctly less dense than on pro- and mesotarsi; metatarsomere I about as long as II–III together.

Female (Figs. 75-76). Head, excluding mandibles, slightly shorter than prothorax at middle. Dorsal sculpture on face of head and area behind eyes sparser than in male. Distance between upper eye lobes equal to about 0.8 times length of scape; distance between lower eye lobes equal to about length of scape. Submentum as in male. Mandible as in male. Antennae (Fig. 11) attaining basal one-third of elytra; scape slightly slenderer than in male, also not attaining posterior ocular edge; antennomere III about as long as scape; antennomeres III–XI without imbrications, more distinctly projected distally on outer edge of VI–XI. Prothorax as male, but posterolateral angles more rounded; pronotal disc more sparsely punctate than male. Metasternum and metepisterna glabrous.

Dimensions in mm (male/female). Total length (including mandibles), 29.4–32.1/35.3–38.0; prothoracic length at center, 4.7–4.8/5.5–5.6; largest prothoracic width, 9.3–9.4/11.3–11.5; humeral width, 11.5–12.6/13.0–13.2; elytral length, 21.3–22.6/24.1–25.6.

Geographical distribution. USA [Arizona (Linsley, 1962), Colorado (Say, 1824), Kansas (Horn, 1872), Nebraska (LeConte, 1852a), New Mexico (LeConte, 1852a), Oklahoma (Alexander, 1958), Utah (Knowlton & Wood, 1950)].

For New Mexico (LeConte, 1852a), see comment on *Prionus fissicornis*.

Type, type locality. Holotype male, described from USA ("Inhabits the upper part of the Arkansa river"—"I observed several specimens of this species on the Arkansa near the Mountains"). See comment on Say's Collection on *Prionus emarginatus*, and on the type locality.

Material examined. USA, *Colorado*: 8 km N Nunn (Weld County), 1 male, 1 female, VII.29.1976, Central Plains Exp. Range, col. (ESSIG). *New Mexico*: 6–8 miles SE Gladstone, 1 male, 1 female, VI.28–29.2000, J. E. Wappes col. (MZSP).

***Prionus* (*Homaesthesis*) *simplex* (Casey, 1912)**

(Figs. 12–13, 54–68)

Prionina simplex Casey, 1912: 252; Knaus, 1914: 91; Lingafelter *et al.*, 2014: 320 (type).

Prionus (*Homaesthesis*) *simplex*; Linsley, 1962: 53; Hovore & Turnbow, 1984: 4; Chemsak *et al.*, 1992: 22 (checklist); Monn & Giesbert, 1994: 16 (checklist); Monn, 1995: 57 (cat.); Chemsak, 1996: 123; Heffern, 1998b: 174 (distr.); Monn & Hovore, 2005: 21 (checklist); 2006: 20 (checklist); Özdikmen & Turgut, 2009: 410; Bezark & Monné, 2013: 27 (checklist).

Prionus palparis; Lameere, 1919: 139 (*syn.*).

Prionus (*Homaesthesis*) *rhodocerus* Linsley, 1957: 10; Linsley, 1962: 53; Hovore, 1981: 457 (distr.); Hovore & Turnbow, 1984: 4 (key); Chemsak *et al.*, 1992: 22 (checklist); Monné & Giesbert, 1994: 16 (checklist); Monné, 1995: 57 (cat.); Chemsak, 1996: 122; Heffern, 1998: 6 (distr.); Monné & Hovore, 2005: 21 (checklist); 2006: 20 (checklist); Özdikmen &

Turgut, 2009: 410; Bezark & Monné, 2013: 27 (checklist). ***Syn. nov.***

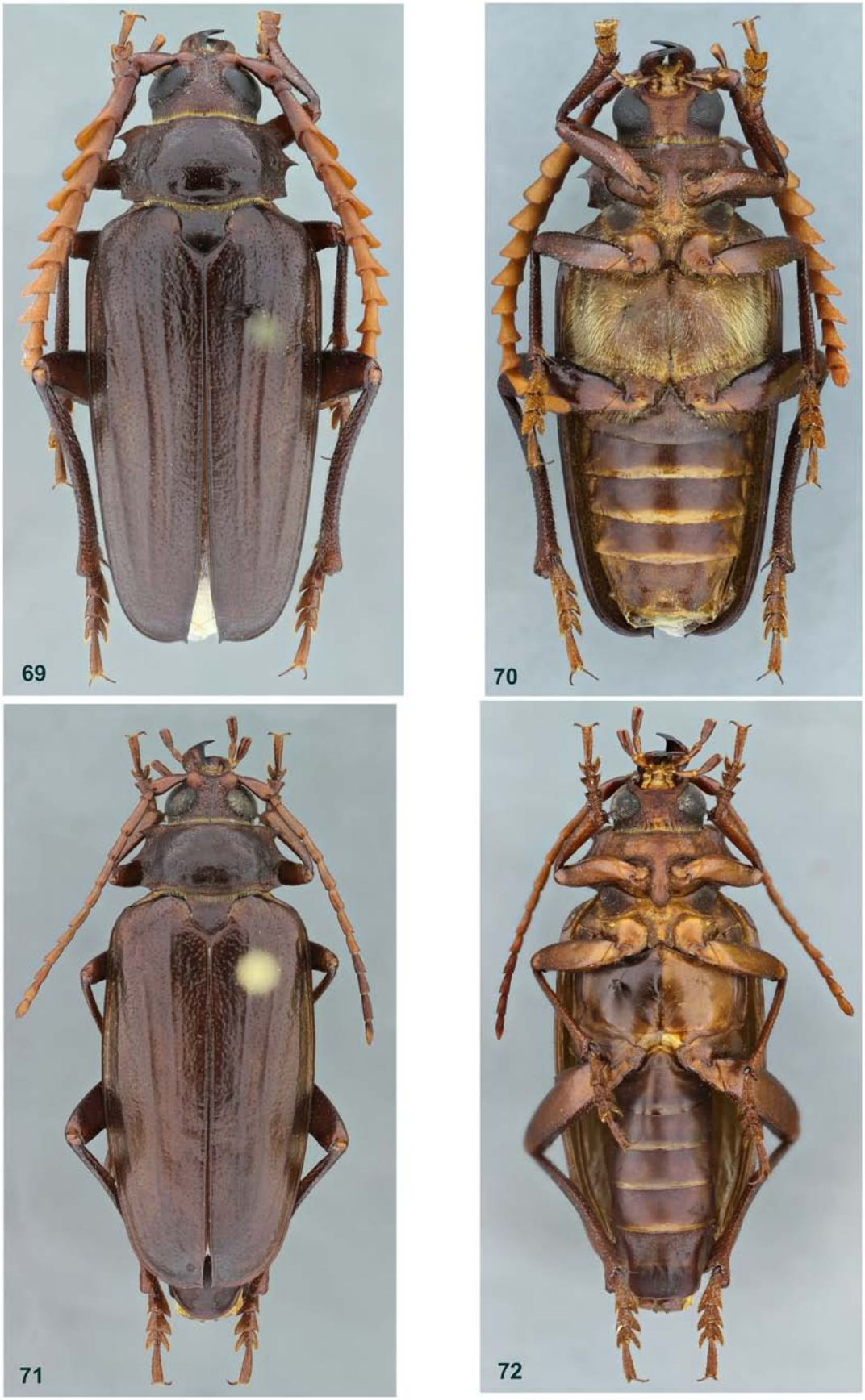
Prionus (*Homaesthesis*) *linsleyi* Hovore, 1981: 455; Hovore & Turnbow, 1984: 4 (key); Chemsak *et al.*, 1992: 22 (checklist); Monné & Giesbert, 1994: 16 (checklist); Monné, 1995: 57 (cat.); Chemsak, 1996: 124; Monné & Hovore, 2005: 21 (checklist); 2006: 19 (checklist); Özdikmen & Turgut, 2009: 410; Bezark & Monné, 2013: 27 (checklist). ***Syn. nov.***

Male (Figs. 54-68). Integument from reddish-brown (usually with parts brown or dark-brown) to dark-brown; antennae from reddish to dark-brown, always with basal segments darker; tarsi from reddish (usually with metatarsomere I darker) to dark-brown.

Head, excluding mandibles, from 0.8 to 1.1 times as long as prothorax at central area, elongate behind eyes (distance from posterior ocular edge to the prothorax from equal to it to longer than greatest length of upper eye lobe). Longitudinal dorsal furrow distinct from clypeus to near prothoracic edge (occasionally reaching anterior margin of prothorax), always more distinct from clypeus to posterior ocular edge. Area on each side of longitudinal sulcus coarsely, deeply, confluently punctate, usually more anastomosed near upper eye lobes and sparsely punctate on central area between posterior eyes and prothorax; dorsal surface with short, very sparse setae (sometimes slightly long and more conspicuous); area behind eyes moderately coarsely, punctate (usually somewhat vermiculate behind lower eye lobe), with long, moderately sparse setae behind upper eye lobes, more abundant behind lower eye lobes. Distance between antennal tubercles variable: from nearly contiguous to distinctly apart; coarsely, abundantly punctate on base, gradually sparser, finer toward apex, which usually is smooth. Postclypeus centrally narrowed, with or without transverse, deep sulcus near frons; posterior one-third distinctly, abruptly oblique toward anteclypeus (sometimes uniformly oblique); laterally coarsely, abundantly punctate laterally, with long, moderately abundant setae (often short and sparse); from smooth to moderately coarsely, abundantly punctate centrally, usually glabrous. Anteclypeus with anterior edge distinctly concave (sometimes slightly concave); shining, glabrous and impunctate. Labrum almost flat; with long, abundant setae laterally and near anterior edge. Eyes proportionally large, but upper eye lobes moderately narrow; distance between upper eye lobes from 1.0 to 1.3 times length of scape; distance between lower eye lobes from 1.2 to 1.7 times length of scape. Submentum trapezoid, slightly depressed; coarsely, confluently, shallowly punctate; with moderately short, sparse setae (distinctly sparser centrally); anterior edge distinctly carinate. Apex of labial palpi nearly attaining middle of maxillary palpomere IV (sometimes slightly surpassing). Mandibles (closed) from slightly shorter to slightly longer than 0.5 times length of head; latero-basal one-third with depression at inferior one-half (sometimes the depression almost reaches distal one-third); outer distal one-third strongly curved, forming an obtuse angle with basal two-thirds. Antennae with 12 segments; slightly surpassing middle of elytra. Scape, at most, attaining posterior ocular edge, enlarged toward apex; dorsally and laterally finely, sparsely punctate (laterally sparser); ventral surface very finely and sparsely punctate (sometimes almost smooth). Antennomere III (including distal projection) from 1.6 to 2.0 times longer than scape, distinctly enlarged toward apex (distal width at apex of projection from 1.6 to 2.0 times basal width); on dorsal view, imbrication distinct and projected (Fig. 12); apex of imbrication not emarginated (Fig. 13). Antennomere IV from 0.6 to 0.8 times as long as III; dorsally microsculptured and finely, sparsely punctate (sometimes only finely punctate toward inner side); imbrications as in III. Antennomeres V–XI dorsally microsculptured; imbrications as in III. Antennomere XII simple, without projections, flattened laterally. Antennomeres III–XII moderately carinate ventrally; imbrications from moderately to distinctly thickened; apex of imbrications from slightly to distinctly enlarged (mainly at antennomere XI).

Maximum prothoracic width from 0.7 to 0.8 times width of elytral base; anterolateral angle from distinct to absent (Figs. 66–67); middle lateral tooth acute, very distinct; posterolateral angle almost in a right angle, sometimes subrounded; margin between lateral middle tooth and posterolateral angle from slightly convergent to parallel; basal margin sinuous; anterior margin from concave to almost straight. Pronotum centrally subflat, frequently with slightly depression; not strongly explanate laterally; callosities distinct, but not strong; disc moderately abundantly punctate, but size and concentration of punctures highly variable throughout; with short, very sparse setae (sometimes absent). Prosternum finely asperate; with long, abundant setae (sometimes shorter throughout or toward prosternal process. Prosternal process not longitudinally sulcate; with short, abundant setae, longer at apex. Elytra moderately coarsely, abundantly punctate (general appearance can be somewhat rugose); each elytron with three carinae, fused at distal one-fourth (sometimes only two are fused); sutural spine short (sutural angle can be only projected). Metasternum microsculptured, less so toward metasternal suture; with long, abundant setae throughout. Metepisterna with sculpture and setae as those of metasternum laterally.

FIGURES 64–68. *Prionus* (*Homaesthesis*) *simplex*: **64**, male, dorsal habitus; **65**, male, ventral habitus; **66**, male, head and pronotum; **67**, male, head and pronotum; **68**, male, antennomeres.



FIGURES 69–72. *Prionus* (*Homaesthesis*) *spinipennis*: **69**, male, dorsal habitus; **70**, male, ventral habitus; **71**, female, dorsal habitus; **72**, female, ventral habitus.

Ventrites I–IV microsculptured, finely, sparsely punctate; ventrite I–IV with short, moderately abundant setae (sometimes somewhat longer on ventrite I). Tarsomeres I–III moderately slender (mainly metatarsomeres); pro- and mesotarsomeres I–III acute at apex (sometimes only tarsomeres I–II); metatarsomeres I–III spined at apex; pro- and mesotarsomeres I–III with spongy setal pads on ventral surface, with narrow subglabrous longitudinal area centrally (sometimes slightly wider); metatarsomeres I–III with spongy setal pads distinctly less conspicuous and with central longitudinal sulcus distinctly wider than on pro- and mesotarsomeres; metatarsomere I about as long as II–III together.

Female. Not examined.

Dimensions in mm (male). Total length (including mandibles), 18.6–26.4; prothoracic length at center, 3.0–4.3; greatest prothoracic width, 5.9–8.8; humeral width, 7.8–10.4; elytral length, 13.6–18.1. Dimensions according to Casey (1912): Length (♂) 22.5 mm.; width 9.0 mm." According to Linsley (1957): "Length, 19–25 mm. [male]"; "Length, 22.5 mm. [female]." According to Hovore (1981): "15.5 mm [male]"; "20 mm [female]."

Geographical distribution. *Prionina simplex* was known only from U.S.A. (Kansas). Monné (1995) recorded: "Eastern Kansas and eastern Oklahoma." According to Heffern (1998b): "Alexander (1958) reported *P. simplex* from two locations in Craig County, Oklahoma. Alexander's paper appears to be the basis for two localities shown in northeastern Oklahoma on the distribution maps given by Linsley (1962) and Chemsak (1996). The one locality shown in central Kansas on the map by Chemsak (1996) represents just a "state record" and not a specific collecting record (J. Beierl, Editor of Wolfsgarden Books, pers. comm.)"; "In 1997, the author borrowed three specimens identified as *P. simplex* from the K. C. Emerson Museum at Oklahoma State University, Stillwater, OK through the courtesy of its curator, Dr. D. C. Arnold. These specimens, all from Craig Co., bear determination labels from J. N. Knull in 1937. However, all of these specimens are *P.* (*Neopolyarthron*) *debilis* Casey"; and "The type specimen appears to be the only known example of this species." However, Alexander (1958) did not report two localities in Craig County, he only pointed out: "**Prionus simplex** Casey. Craig (OSU)." Nevertheless, following Heffern (1998b), the inclusion of *P. simplex* in Oklahoma by Linsley (1962) and Chemsak (1996) was a mistake.

The geographical distribution including those of *P. rhodocerus* and *P. linsleyi* are: USA [Utah (Linsley, 1957), Kansas (Casey, 1912), Nebraska (Linsley, 1957); Colorado (Hovore, 1981), New Mexico (Hovore, 1981); Arizona (Hovore, 1981); Wyoming (Chemsak, 1996)].

Type, type localities. Of *Prionina simplex* (Figs. 54–55): Holotype male, from Kansas, deposited at USNM. Figured at Lingafelter *et al.* (2016).

Of *Prionus* (*Homaesthesis*) *rhodocerus* (Figs. 60–63): Holotype male from USA (Utah, Red Creek) deposited at CAS. Three paratypes from Utah, deposited at CAS and USNM. Figured at Bezark (2016).

Of *Prionus* (*Homaesthesis*) *linsleyi* (Figs. 56–59): Holotype male and paratype female from USA (Arizona, "Coconimo County, 6.5 mi S. Moenkopi"), deposited at CAS. Figured at Bezark (2016).

Material examined. USA, no other data, 1 male (USNM). *Arizona*: Chino Valley, 1 male, 19.VII.1939, [no collector indicated] (ESSIG). *New Mexico*: Quay County (sand dunes, 1.5 mi. N San Jon), 1 male, V.20.1986, P. A. Opler col. (ESSIG). *Utah*: Fernow Valley, Juab County, 1 male, 03.VIII.1939, [no collector indicated] (USNM); Fort Duchesne, 1 male, 07.XII.1932, Lowell Cutler col. (USNM); Little Granite Mountain (Dugway Proving Grounds, Tooele County), 1 male, 24.VIII.1953, M. D. Baxter col. (ESSIG).

Remarks. Hovore (1981) recorded: "*Prionus* (*H.*) *linsleyi* is closely related to *P.* (*H.*) *simplex* (Casey), from the midwest, and *P.* (*H.*) *rhodocerus* Linsley, from the Rocky Mountain states. Based upon a comparison of holotype males, *linsleyi* differs from *simplex* by the shape of the scutellum (sides evenly rounded to apex in *simplex*), more pronounced elytral sculpture, longer, denser metasternal pubescence (finer, shorter and sparser in *simplex*), and by the longer, parallel-sided first posterior tarsal segment (3 times as long as the apical width in *linsleyi*, subtriangular in dorsal outline and less than twice as long as apical width in *simplex*)." Based on species with a large amount of specimens examined, we can affirm that the shape of the scutellum is notably variable in *Prionus*. The elytral sculpture is somewhat different in *P. simplex* (finer) and *P. linsleyi* (coarser). But, as it is possible to see in other species, the elytral sculpture is frequently variable. The metasternal pubescence could be a good difference among those species. However, metasternal pubescence is highly variable in other species of the genus and, in this case, it is not too different in both holotypes. Regarding the first metatarsomere: it is about twice as long as the apical width in *P. simplex*. Studying photographs of the holotype of *P. linsleyi* indicates the first metatarsomere is slightly longer than twice its apical width. Note: we have found that the width of first metatarsomere is frequently variable in species of *Prionus*.

FIGURES 73–76. *Prionus* (*Homaesthesis*) *palparis*: **73**, male, dorsal habitus; **74**, male, ventral habitus; **75**, female, dorsal habitus; **76**, female, ventral habitus.

Hovore & Turnbow (1984) separated *P. simplex* and *P. linsleyi* from *P. spinipennis* and *P. rhodocerus* in the couplet 5: "Coloration dark brown, castaneous, or piceous; antennae all or in part lighter reddish-brown"—*P. spinipennis* and *P. rhodocerus*; "Coloration concolorous light reddish-brown, antennae not contrasting"—*P. simplex* and *P. linsleyi*. However, the holotype of *P. simplex*, and the specimens examined are not light reddish-brown [they are dark-brown—"evenly red-brown, according to Casey (1912)], and the antennae, at least in one specimen, are in part distinctly contrasting ["the antennae paler and more ochraceous", according to Casey (1912)]. Linsley (1962) and Chemsak (1996) recorded on the color: "Integument red-brown throughout." The color in specimens of *Prionus* is frequently variable, including legs and antennae, as we could see examining specimens of *P. emarginatus*. Thus, the color is not useful in separating species of *Prionus*.

Lameere (1919), in doubt, synonymized, *P. simplex* under *P. palparis*. Linsley (1962), and all other authors who published on *P. simplex*, apparently, did not observe this doubtful synonym. We agree with Linsley (1962): *P. simplex* is not equal to *P. palparis*. The distance between upper eye lobes in the latter is distinctly smaller.

We found an interesting variation in the *P. simplex* specimens examined by us as the lateroanterior angle of pronotum may be absent (as in the holotype of *P. linsleyi*) or distinct (as in holotype of *P. simplex* and *P. rhodocerus*). This variation invalidates the difference pointed out in the three keys that included *P. simplex*. According to Linsley (1962): "anterior lateral angle of pronotum distinct or dentiform"—to *P. palparis*, *P. simplex*, and *P. rhodocerus*; "anterior lateral angle of pronotum rounded or indistinct"—to *P. integer*. In Chemsak (1996): "Pronotum with anterior angle distinct"—to *P. simplex*; "Pronotum with anterior lateral angle irregularly rounded"—to *P. linsleyi*. And according to Hovore & Turnbow (1984): "Anterior pronotal angle distinct"—to *P. simplex*; "Anterior lateral pronotal angle irregularly rounded"—to *P. linsleyi*.

According to Linsley (1957): "The specimens from Kansas and Nebraska have the integument, other than antennae, black rather than piceous, the metasternum thinly pubescent, the abdomen nearly glabrous, and the punctation of the pronotum and elytra finer. I have hesitated to designate them as subspecifically different in the absence of material from the intervening area." We saw the same kind of variation in the specimens examined. Also, we noted that the projection of the antennomeres is highly variable in the specimens: it could be distinctly enlarged (including antennomeres X–XI), or distinctly slender (mainly in antennomeres X–XI). The antennomeres can also be distinctly tumid or less so.

Based on comparison of the specimens examined by us, original descriptions, and photographs of the holotypes with good resolution of details, we conclude that *Prionus linsleyi* and *P. rhodocerus* are synonyms of *P. simplex*, and the latter differs from *P. integer* only by the number of antennomeres (respectively: 12 and 13).

***Prionus* (*Homaesthesis*) *integer* LeConte, 1852**

(Figs. 77–82)

Prionus integer LeConte, 1851: 107; Melsheimer, 1853: 100; White, 1853: 100; LeConte, 1859: 48 (distr.); Lacordaire, 1868: 61 (note); Lameere, 1912a: 246; 1913: 78; 1919: 139; Knowlton & Tratcher, 1936: 278 (distr.); Weissmann & Kondratieff, 1999: 74 (distr.).

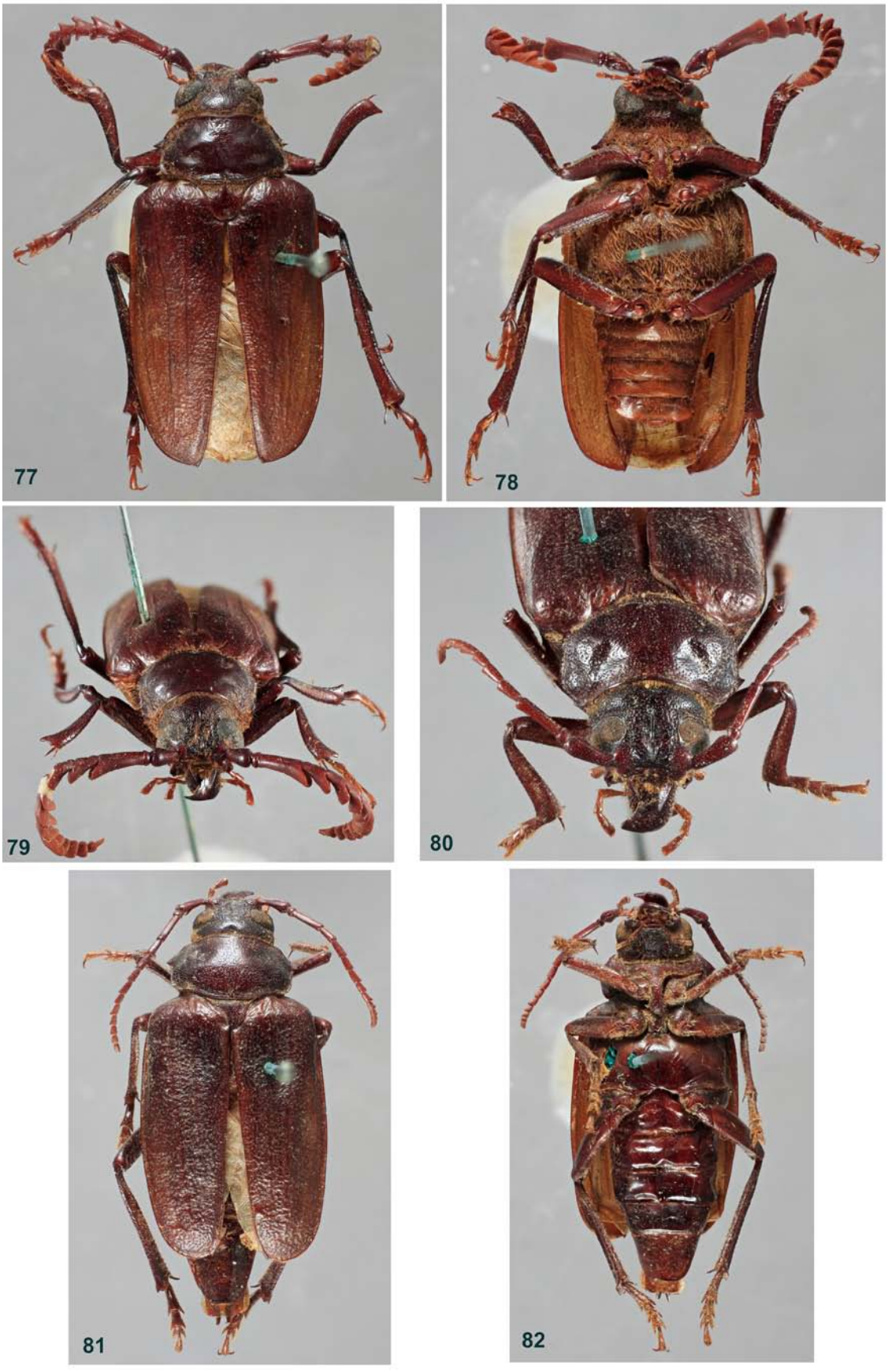
Homaesthesis integer; Popenoe, 1877: 32 (distr.); Leng, 1884: 57, 59; Blanchard, 1887: 86; Snow, 1903: 198 (distr.); Knaus, 1904: 156; Fall & Cockerell, 1907: 191 (distr.).

Homaesthesis integra; LeCone, 1873: 288; Lameere, 1883: 3 (checklist); LeConte & Horn, 1883: 273, 274; Casey, 1912: 253.

Prionus (*Homaesthesis*) *integer*; Barr & Penrose, 1969: 92 (distr.; host); Hatch, 1971: 94; Penrose & Westcott, 1974: 236 (distr.); Hovore & Turnbow, 1984: 4 (key); Chemsak *et al.*, 1992: 22 (checklist); Monné & Giesbert, 1994: 16 (checklist); Monné, 1995: 56 (cat.); Heffern, 1998: 6 (distr.); Monné & Hovore, 2005: 20; 2006: 19 (checklist); Özdikmen & Turgut, 2009: 410; Bezark & Monné, 2013: 27 (checklist).

Male (Figs. 77–79). Integument dark reddish-brown; head, scape, pronotum, and margins of femora and tibiae dark-brown; antennomeres lighter from III to XII; elytra darker on basal one-third.

Head, excluding mandibles, about 0.8 times as long as prothorax at central area, elongate behind eyes (distance from posterior ocular edge to the prothorax about 1.0 times as long as length of upper eye lobe). Longitudinal dorsal furrow distinct from clypeus to prothoracic edge. Area between antennal tubercles and posterior ocular edge distinctly, widely sulcate; inside of sulcus coarsely, confluently punctate. Area between sulcus and eyes, coarsely, abundantly punctate. Central area between posterior ocular edge and prothorax, moderately coarsely, sparsely punctate (punctures notably smaller than between eyes). Area behind upper eye lobes coarsely, confluently



FIGURES 77–82. *Prionus* (*Homaesthesis*) *integer*: **77**, holotype male, dorsal habitus; **78**, holotype male, ventral habitus; **79**, holotype male, head, ventral view; **80**, female, head, frontal view; **81**, female, dorsal habitus; **82**, female, ventral habitus.

punctate (punctures smaller than between eyes). Dorsal surface with abundant setae, except for centrally, between eyes and prothorax. Eyes proportionally large; distance between upper eye lobes about equal to length of scape; distance between lower eye lobes about equal to length of scape. Submentum trapezoid, punctate-vermiculated; with moderately long, abundant setae. Antennae with 13 segments; surpassing middle of elytra. Scape attaining posterior ocular edge; moderately finely, sparsely punctate, interspersed with a few coarse punctures. Antennomere III dorsally 1.4 times longer than scape, distinctly enlarged toward apex (distal width equal to 1.8 times basal width); on dorsal view, imbrication distinct, but not very projected; on ventral view, apex of imbrication slightly emarginate. Antennomere IV as long as 0.55 times III; imbrication dorsally similar to III, slightly more distinctly emarginated ventrally. Antennomeres V–VII with imbrication as in IV; apex of imbrication in VIII–XII not emarginate.

Maximum prothoracic width 0.75 times elytral base; anterolateral angle not projected forward, sublinear toward lateral tooth; lateral tooth large, acute, placed slightly before middle; margin between lateral tooth and posterolateral angle straight; posterolateral angle rounded. Pronotum convex, slightly explanate laterally; center of disc finely, sparsely punctate, almost glabrous; distinctly coarsely, densely punctate laterally, with long, abundant setae. Prosternum densely punctate, with long, abundant setae. Prosternal process finely, abundantly punctate, with long, abundant setae laterally and distally. Elytra moderately finely, abundant punctate, somewhat finely rugose throughout; each elytron with three carinae; outer apical angle rounded, sutural angle projected. Metasternum and metepisterna finely, densely punctate, with long, abundant setae throughout; metasternum slightly longer than ventrites I–IV together.

Ventrites finely, sparsely punctate, with short sparse setae (distinctly longer and denser on I and II laterally). Ventrite V truncate, surface depressed centrally on distal one-half. Metatarsomeres I–III notably spined at apex (most distinct on lobes of metatarsomere III).

Female (Figs. 80–82). Integument mostly dark-brown; antennomeres reddish-brown, lighter toward apex. Head, excluding mandibles, about as long as prothorax at middle. Sculpture on dorsal surface of head and area behind eyes similar to that in male, but punctures inside of sulcus finer. Distance between upper eye lobes about equal to length of scape; distance between lower eye lobes slightly larger than length of scape. Frons and vertex almost glabrous. Submentum similar as in male. Antennae with 13 segments, slightly surpassing basal one-third of elytra. Scape more slender than in male, not reaching posterior ocular edge. Antennomere III 0.9 times as long as scape; antennomeres III–XII without distinct imbrication, distinctly projected after VI at outer distal edge. Prothorax as in male, except glabrous. Metasternum glabrous, slightly longer than ventrite I. Ventrites almost glabrous.

Dimensions in mm (male/female). Total length (including mandibles), 24.0/25.5–21.0; prothoracic length at center, 4.0/4.5–3.0; greatest prothoracic width, 8.0/9.0–6.5; humeral width, 11.0/10.5–9.0; elytral length, 17.0/16.5–15.0.

Geographical distribution. LeConte (1859) included *P. integer* in a list of Coleoptera from Kansas and Nebraska. He did not specify if the species occurs in one or in both states. Knaus (1904) was the first after LeConte (1852) to give a detailed new record for *P. integer*, a location in New Mexico: "One specimen, Cloudcroft. N." Actually, it is not possible to know if the records after the original description really are of the species described by LeConte (1852). But we know that the redescriptions in Linsley (1962) and Chemsak (1996) do not agree with LeConte's species. Heffern (1998) listed the states in USA where the bibliography, at that time, mentioned *P. integer*: "CO, ID, KS, NM, NV, OR, UT." The only specimen examined by us from outside Colorado is from Idaho.

Type, type locality. Holotype male from USA ("near Pike's Peak, Rocky Mountains", Colorado). Figured at http://www.mcz.harvard.edu/

Material examined. USA, *Colorado*: Male holotype. *Idaho*: Atlanta, 1 female [no other data] (MCZ); Bent Co., 2 males, 2 females, 10.5 mi N CO-194 & 0.3 mi N C.R. UU on C.R. 10, N38.235201, W103.235015, 22.vi.2014, T.C. MacRae & J. Huether, crawling on ground along road in shortgrass prairie early evening in vicinity of prionic acid-baited trap (MZSP).

Remarks. The date of publication for the paper in which LeConte described *Prionus integer* is controversial. For example, Lameere (1912, 1913, 1919) and Linsley (1962) indicated 1852, while Monné (1995), Chemsak (1996) and Monné & Hovore (2005, 2006) indicated 1851. The "Contents" of the "Journal of the Academy of Natural Sciences of Philadelphia" recorded: "PART II. JANUARY, 1852" / "Art. XIII.—An attempt to classify the Longicorn Coleoptera of the part of America North of Mexico. By John L. Le Conte, M. D." In the same page, it

was indicated that extra copies were printed for the author in October, 1851. As there is no evidence that LeConte received and distributed his copies before the formal publication, we think that the correct date is 1852. Also, Skinner *et al.* (1913) recorded that the magazine was "presented to Academy meeting, February 3, 1852", and Henshaw (1878) recorded: "Journ. Acad. Nat. Sci. of Phil., 1852, s. 2, v. 2, p. 99–112."

Leng (1884) recorded: "Thorax slightly punctured, not pubescent, lateral tooth acute…**integer**."; and "The acute lateral tooth of thorax, and the lack of pubescence will serve to at once distinguish this species… Hab. Col. and West. States." Although LeConte (1852a) did not mention the presence of pubescence on the pronotum, it is possible to see in photographs of the holotype that there are distinct setae laterally.

Females of this species are very similar to females of *P. geminus* sp. nov., including shape of antennomeres. However, the females studied of *P. geminus* sp. nov. are distinctly lighter than females examined of this species. See remarks on *Prionus* (*Prionus*) *geminus* sp. nov.

Prionus (*Homaesthesis*) *emarginatus* Say, 1824

(Figs. 1–4, 83–86)

Prionus emarginatus Say, 1824: 327; Haldeman, 1847b: 31; LeConte, 1852a: 107; Melsheimer, 1853: 100 (cat.); White, 1853: 17; LeConte, 1859a: 19, 48 (pl. II, fig. 13); 1859b: 184; Lacordaire, 1868: 61 (note); Horn, 1872: 390 (distr.); Packard, 1877: 803 (pl. 70, fig. 6) (biol.); 1881: 161: fig. 73 (biol.); 1890: 703 (biol.); Lameere, 1912a: 247; 1913: 78 (cat.); 1919: 139; Gwynne & Hostetler, 1978: 347 (biol.); Weeks & McIntyre, 1997: 270; Weissmann & Kondratieff, 1999: 74 (distr.); Cervantes *et al.*, 2006: 721.

Prionus (*Homaesthesis*) *emarginatus*; Linsley, 1957: 10; 1958: 110; 1962: 50 (fig. 17); Hatch, 1971: 94; Hovore & Turnbow, 1984: 4 (key); Chemsak *et al.*, 1992: 21 (checklist); Monné & Giesbert, 1994: 15 (checklist); Monné, 1995: 56 (cat.); Chemsak, 1996: 118; Heffern, 1998a: 6 (distr.); Monné & Hovore, 2005: 20 (checklist); 2006: 19 (checklist); Özdikmen & Turgut, 2009: 410; Bezark & Monné, 2013: 26 (checklist).

Homaesthesis emarginata; LeConte, 1873: 288, 289; Lameere, 1883: 3 (cat.); LeConte & Horn, 1883: 273, 274.

Homaesthesis emarginatus; Crotch, 1873; 83 (checklist); LeConte, 1876: 520 (distr.); Snow, 1877: 19 (distr.); Crotch, 1880: 83 (checklist); Snow, 1883: 42 (distr.); Leng, 1884: 57, 59; Blanchard, 1887: 86; Beutenmüller, 1896: 74 (host plant); Snow, 1906b: 179 (distr.); Fall & Cockerell, 1907, 191 (distr.); Casey, 1912: 254; Craighead, 1923: 28 (larvae); 1950: 239 (larvae).

Prionus innocuus LeConte, 1862: 43; Lacordaire, 1868: 61 (note).

Homaesthesis innocua; Casey, 1912: 254; Henshaw, 1881: 247.

Homaesthesis innocuus; Crotch, 1873; 83 (checklist; syn.).

Homaesthesis pubicollis Casey, 1912: 254; Lameere, 1919: 139 (*syn.* in doubt); Linsley, 1957: 10 (syn.); Lingafelter *et al.*, 2014: 304 (type).

Homaesthesis debiliceps Casey, 1912: 255; Lameere, 1919: 139 (*syn*. in doubt); Linsley, 1957: 10 (syn.); Lingafelter *et al.*, 2014: 50 (type).

Integument from pale reddish-brown to dark-brown, frequently with dorsal side darker than ventral; antennae usually reddish-brown (in a female dark-brown).

Male (Figs. 83–84). Head, excluding mandibles, from 0.8 to 1.0 as long as prothorax at central area, moderately elongate behind eyes (distance from posterior ocular edge to the prothorax from 0.45 to 0.85 times greatest length of upper eye lobe). Longitudinal dorsal furrow distinct from clypeus to middle of area between posterior ocular edge and prothoracic edge (sometimes reaching, or almost reaching, prothoracic edge). Area between base of antennal tubercles and middle of upper eye lobes with sub-rhombus depression (sometimes slightly marked). Dorsal side of head moderately coarsely, confluently punctate (sometimes distinctly coarsely punctate, mainly near eyes), usually finer, somewhat sparsely punctate near prothorax; with long, moderately abundant setae throughout. Area behind upper eye lobes, moderately coarsely, shallowly, confluently punctate; with long, moderately sparse setae; area close to eye with very long, abundant setal brush (sometimes sparser). Area behind lower eyes lobes moderately rugose, with sparse, long setae; area close to eye with very long, abundant setal brush. Antennal tubercles coarsely, confluently punctate on base, gradually finer toward middle, smooth toward apex; with long, sparse setae on base, anteriorly and posteriorly, centrally glabrous. Postclypeus coarsely, abundantly punctate laterally, gradually finely, sparsely punctate toward middle that is shallow or almost so; with long, moderately abundant setae laterally, gradually shorter, sparser toward almost glabrous middle. Anteclypeus with anterior edge concave; glabrous or with long, sparse setae. Labrum centrally flat or depressed;

with long, sparse setae; anterior edge with long setal brush. Eyes proportionally large; distance between upper eye lobes equal from 0.8 to 1.0 times length of scape; distance between lower eye lobes from 1.0 to 1.1 times length of scape. Submentum trapezoid, from distinctly to slightly depressed; moderately coarsely, shallowly punctate-rugose; with long, moderately abundant setae. Apex of labial palpi nearly attaining middle of maxillary palpomere IV; apex of last maxillary and labial palpomere from 2.3 to 2.8 times as wide as its basal width. Mandibles from 0.45 to 0.55 times as long as head; latero-basal one-third distinctly depressed; narrow on lateral view; inferior outer margin usually sinuous; outer distal one-half distinctly curved, forming an obtuse angle with basal one-half (sometimes right angle). Antennae (Figs. 1, 2) with 14 segments, frequently with last segment fused with 13th; last segment complex (rarely simple); nearly attaining middle of elytra. Scape nearly attaining middle of upper eye lobe, not strongly enlarged toward apex; finely, sparsely punctate dorsally and laterally (more abundant on basal one-third). Antennomere III (including outer distal projection) from 1.9 to 2.1 times as long as scape, distinctly enlarged toward apex (distal width at apex of projection about twice basal width); on dorsal and ventral view, imbrication very distinct and projected (Figs. 1, 2); on lateral view, imbrication bifurcated; moderately finely, sparsely punctate dorsally. Antennomere IV about as long as 0.7 times III; moderately finely, sparsely punctate dorsally on inner side; imbrication as in III. Antennomeres V–VI with sculpture and imbrication as on IV. Antennomeres VII–XI/XII microsculptured dorsally; imbrication as in III.

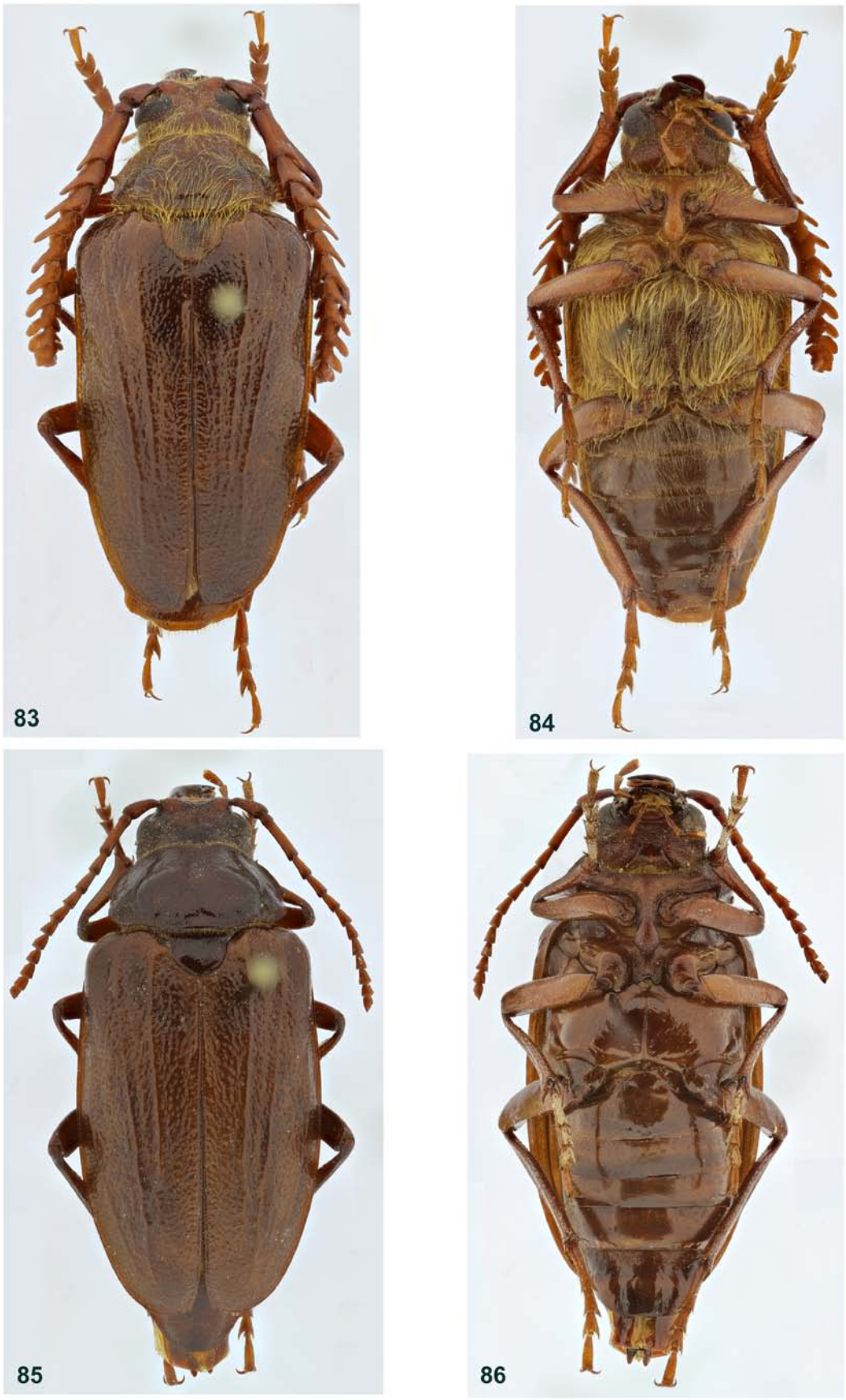
Maximum prothoracic width from 0.60 to 0.65 times width of elytral base; anterolateral angle rounded; lateral tubercle placed between anterolateral angle and middle, from distinctly rounded to with short, acute spine; posterolateral angle slightly projected, from rounded to somewhat acute; margin slightly divergent from posterolateral angle and lateral tubercle; basal margin sinuous, usually distinctly emarginated centrally; distal margin from sublinear to concave. Pronotum from flat to slightly convex centrally, not strongly explanate laterally; callosities slightly marked; disc finely, abundantly punctate (sometimes moderately sparsely punctate); moderately coarsely, abundantly punctate laterally (usually with part of punctures confluent); with long, moderately abundant setae throughout. Prosternum moderately finely, abundantly punctate (usually slightly rugose laterally); with long, moderately abundant setae. Prosternal process not longitudinally sulcate; with long, moderately abundant setae. Scutellum with long, moderately sparse setae. Elytra coarsely, moderately abundant punctate-rugose; each elytron with three carinae (sometimes with additional carina between innermost; sometimes outermost almost absent); with long, sparse setae near humerus laterally; remaining surface glabrous. Metasternum and metepisterna with long, abundant setae.

Ventrites I–II with long, moderately abundant setae (longer and more abundant on I); ventrite III–IV with long, sparse setae on basal one-half, with short sparse setae on distal one half (sometimes absent, mainly on IV); ventrite V with moderately short setae, usually denser centrally, with long, sparse setae intermixed. Tarsomeres I–III moderately slender, not distinctly flattened; apices of tarsomeres I–III spined at apex (sometimes part of them just projected); pro- and mesotarsomeres I–III with spongy setal pads on ventral surface divided by moderately distinct, moderately narrow glabrous longitudinal sulcus; spongy setal pads of metatarsi distinctly less dense than on pro- and mesotarsi; metatarsomere I from slightly shorter to as long as II–III together.

Female (Figs. 85–86). Dorsal surface frequently darker. Head, excluding mandibles, from slightly shorter to as long as prothorax at middle. Dorsal sculpture on face of head and area behind eyes finer, distinctly sparser than in male. Distance between upper eye lobes from 1.2 to 1.5 times length of scape; distance between lower eye lobes from 1.1 to 1.5 times length of scape. Head, pronotum, scutellum, metasternum and metepisterna glabrous; prosternum with very short, sparse setae; prosternal process mostly glabrous, with short, moderately abundant setae at apex; apex of mesosternal process variable: from distinctly emarginate to distinctly truncate. Antennae (Fig. 3, 4) nearly attaining apex at basal one-third of elytra; scape more slender than in male, from 0.70 to 0.85 as long as antennomere III, nearly attaining middle of upper eye lobe; antennomeres IV–XII with short imbrication, distinctly emarginated centrally (mainly after VI) (Fig. 4), carinate ventrally. Prothorax as in male, but punctures usually finer. Metathorax distinctly shorter than in male.

Dimensions in mm (male/female). Total length (from mandibles to elytral apex), 18.8–23.6/21.4–26.0; prothoracic length at center, 2.9–3.3/3.6–3.9; greatest prothoracic width, 5.5–7.1/7.2–7.3; humeral width, 8.1–10.5/8.8–10.8; elytral length, 14.1–18.0/15.1–18.5.

Geographical distribution. USA [Colorado (Say, 1824), Arizona (Chemsak, 1996), Idaho (Linsley, 1962), New Mexico (LeConte, 1859a), Kansas (LeConte, 1859a), Wyoming (Linsley, 1962), Missouri (Chemsak, 1996), Nebraska (Chemsak, 1996), Utah (Packard, 1881), Texas (**new state record**)].



FIGURES 83–86. *Prionus* (*Homaesthesis*) *emarginatus*: **83**, male, dorsal habitus; **84**, male, ventral habitus; **85**, female, dorsal habitus; **86**, female, ventral habitus.

Types, type localities. Of *Prionus emarginatus*—syntypes (at least one male and one female) from Arkansas River ("near mountains"). According to Mawdsley (1993), only 10 specimens of Cerambycidae from Say's Collection survived: "*Moneilema inaequalis* Say 1835:193 (One specimen); 9 undetermined specimens." Unfortunately, we were unable to determine if there were any *Prionus* among the undetermined specimens.

Say (1824) recorded as type locality: "Inhabits Arkansa"; and "I obtained it on the Arkansa river near to Mountains." Between 1819 and 1824, Arkansas Territory comprised, mainly, the area that now forms Oklahoma and Arkansas. Arkansas River rises in Colorado. As Say (1824) recorded "near to Mountains", the state of the type locality is Colorado, and not Arkansas.

Of *Prionus innocuus*—holotype female, from New Mexico (USA), deposited at MCZ. Figured at http://www.mcz.harvard.edu/

Of *Homaesthesis pubicollis*—holotype male, from Colorado (USA), deposited at USNM. Figured at Lingafelter *et al.* (2016).

Of *Homaesthesis debiliceps*—holotype male, from Colorado (USA), deposited at USNM. Figured at Lingafelter *et al.* (2016).

Material examined. USA, *Colorado*: male, [no detailed place, date and collector indicated] (USNM); [no detailed place indicated], 1 male, 14.VII.1914, W.D. Edmonston col. (USNM); Boulder, 1 male, 7.VIII.1951, S. Shushan col. (ESSIG); El Paso County, 1 male, 21.VI.1950, [no collector indicated] (ESSIG); Great Sand Dunes National Monument (Alamosa County), 2 males, 1 female, 5.VII.1977, D. Guynne col. (ESSIG); Larkspur, 3 males, 14.VII.1915, W. D. Edmonston col. (USNM); 3 males, 15.VII.1915, W. D. Edmonston col. (USNM); 2 males, 1 female, 25.VII.1915, W. D. Edmonston col. (USNM); Littleton (5350 ft.), 1 male, 4.VII.1938, C.W. Dawson col. (ESSIG); Mesa Verde National Park, 1 male, 8.VII.1964, W. F. Chamberlain col. (USNM); Norwood, 4 males, 12.VI.1955, D. E. Bright col. (ESSIG); 1 male, 12.VI.1955, D. E. Bright col. (MZSP); Plainview (Jefferson County;7–8000 ft.), 2 males, 9–14.VII.1922, [no collector indicated] (USNM); Weld County (near Owl Creek, 15 km NNE of Nunn, Pawnee National Grassland), 1 male, 24.VI.1977, D. L. Wagner col. (ESSIG); 2 males, 27.VI.1977, D. L. Wagner col. (ESSIG). *Missouri*: Boone County, 1 male, 15.VIII.1968, Frederick Johannsen col. (ESSIG). *New Mexico*: female holotype of *Prionus innocuus*; Las Vegas (San Miguel County), 1 male, 12.VII.1959, E. G. Linsley col. (ESSIG); McGaffey (Zuni Mountains, McKinley County, 7500 ft.), 1 male, 22.VII.1962, E. & I. Munroe col. (ESSIG); Harding County, 1 male, 2 females, 29.VI.2000, J. Wappes col. (MZSP); 2 males, 10 females, 29.VI.2000, J. E. Wappes col. (USNM); Nogal Lake, 1 male, 9.VII.1964, W. F. Chamberlain col. (USNM); Capulin Volcano National Monument (Union County, 7500'), 1 male, 14.VII.1968, [no collector indicated] (USNM); Santa Fe County, 15 males, 166 Nugent Rd., Edgewood, 35°7'38.08"N, 106°13'14.52"W, 20-VII-2009, A. Johnson (ENPC); 4 males, same data except: 1-VII-2009 (ENPC); 1 female, same data, except: 15.VII.2009.

Remarks. Monné (1995) did not indicate who placed *Prionus innocuus* as a synonym of *P. emarginatus*. LeConte (1873) suggested the synonym between these species: "*Homaesthesis* (*P. integer* Lec., *emarginatus* Say) found in Colorado and New Mexico. *P. innocuus* Lec. is the female of one of these species, probably *emarginatus*." However, the formal synonym is by Crotch (1873), who listed *P. innocuus* under synonym of *P. emarginatus* (both mentioned in *Homaesthesis*).

Linsley (1962) wrote on the female of *P. emarginatus*: "Form very robust; integument rufopiceous; antennae 13-segmented, external processes deeply cleft; pronotum with or without distinct lateral tooth; elytra with apices separately rounded". Chemsak (1996) repeated this description. The description of the antennae is, at least, strange. The antennomeres in females of *Prionus* lack an external processes as distinct as in males and, frequently, they are absent or nearly so. Females of *P. emarginatus* have the outer apical projection of antennomeres from slightly emarginated to irregularly dentate.

The holotype of *P. innocuus* has the elytral apices separately rounded. However, we examined females of that species with a small, but distinct, sutural tooth at the elytral apices. The holotype of *P. innocuus* is particularly notable by its very wide body, but specimens were also examined with a slender body.

Lameere (1919) was the first who considered *P. debiliceps* and *P. pubicollis* as synonyms of *P. emarginatus* (in doubt). Linsley (1957) formalized the synonym: "Casey's types of *pubicollis* and *debiliceps* fall well within the usual range of individual variation of *emarginatus*. The median lateral angle of the pronotum may be spiniform, acutely produced, obtuse, or absent. The photographs of the holotypes of *P. debiliceps* and *P. pubicollis* prove that Lameere and Linsley were right.

***Prionus* (*Homaesthesis*) *geminus* sp. nov.**
(Figs. 5–8, 87–90)

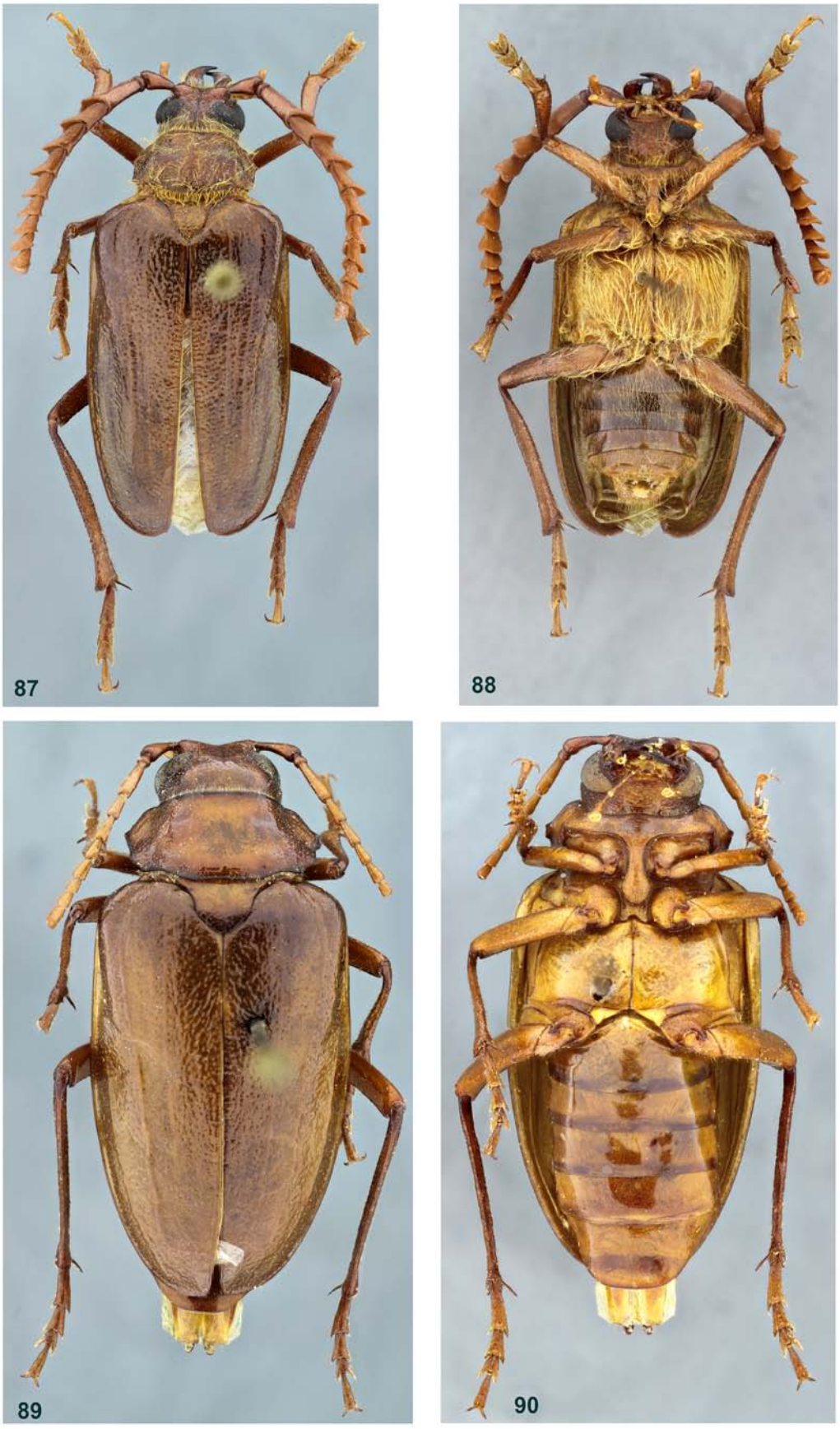
Prionus (*Homaesthesis*) *integer*; Linsley, 1962: 51; Chemsak, 1996: 119.

Integument from reddish-brown to brown, with dorsal surface darker than ventral.

Male (Figs. 87–88). Head, excluding mandibles, from slightly shorter to slightly longer at central area than prothorax, moderately elongate behind eyes (distance from posterior ocular edge to the prothorax slightly shorter than width of upper eye lobe). Longitudinal dorsal furrow distinct from clypeus to near prothoracic edge. Area between base of antennal tubercles and middle of upper eye lobes with sub-rhombus depression (sometimes slightly marked). Dorsal side of head coarsely, confluently punctate (sometimes almost smooth between eyes and prothorax centrally); with long, moderately abundant setae throughout. Area behind upper eye lobes, moderately coarsely, shallowly, confluently punctate; with long, moderately sparse setae; area close to eye with brush having long, abundant setae. Area behind lower eyes lobes moderately rugose, with sparse, long setae; area close to eye with brush having long, abundant setae. Antennal tubercles coarsely, confluently punctate at base, gradually finer toward middle, smooth toward apex; with long, sparse setae on base, anteriorly and posteriorly, centrally glabrous. Postclypeus laterally coarsely, abundantly punctate, gradually finely, sparsely punctate toward middle that is shallow or nearly so; with long, moderately abundant setae laterally, gradually shorter, sparser toward middle. Anteclypeus glabrous; anterior edge concave. Labrum centrally flat or depressed; with long, sparse setae; brush with long setae on anterior edge. Eyes proportionally large; distance between upper eye lobes equal from 0.75 to 1.00 times length of scape; distance between lower eye lobes from 0.65 to 1.10 times length of scape. Submentum trapezoid, slightly depressed; moderately coarsely, shallowly punctate-rugose; with long, moderately abundant setae. Apex of labial palpi nearly attaining middle of maxillary palpomere IV; apex of last maxillary and labial palpomere from 2.0 to 3.8 times as wide as its basal width. Mandibles from 0.45 to 0.65 times as long as head; latero-basal one-third distinctly depressed; narrow on lateral view; inferior outer margin usually sinuous; outer distal one-half distinctly curved, forming an obtuse angle with basal one-half (sometimes right angle). Antennae (Figs. 6, 7) with 13 segments, sometimes with last segment fused with 12th segment; last segment from simple to slightly complex; attaining about middle of elytra. Scape slightly surpassing middle of upper eye lobe, not strongly enlarged toward apex; finely, sparsely punctate dorsally and laterally (more abundant on basal one-third). Antennomere III (including outer distal projection) from 1.6 to 1.9 times as long as scape, distinctly enlarged toward apex (distal width at apex of projection from 1.7 to 2.0 times basal width); on dorsal and ventral view, imbrication very distinct and projected (Fig. 6); on lateral view, imbrication slightly emarginated (Fig. 7); moderately finely, sparsely punctate dorsally. Antennomere IV from 0.6 to 0.7 times as long as III; moderately finely, sparsely punctate dorsally on inner side; imbrication as in III. Antennomeres V–VI with sculpture and imbrication as on IV. Antennomeres VII–XI/XII microsculptured dorsally; imbrication as in III.

Maximum prothoracic width from 0.65 to 0.75 times width of elytral base; anterolateral angle rounded; lateral tubercle placed between anterolateral angle and middle, acutely projected; posterolateral angle from acutely projected to slightly obtuse; margin between lateral tubercle and posterolateral angle from concave to sublinear; basal margin sinuous; distal margin from sublinear to sinuous. Pronotum moderately flat centrally, not strongly explanate laterally; callosities slightly marked; disc finely, abundantly punctate; moderately coarsely, abundantly punctate laterally; with long, moderately abundant setae throughout. Prosternum moderately finely, abundantly punctate (usually slightly rugose laterally); with long, moderately abundant setae. Prosternal process not longitudinally sulcate; with long, moderately abundant setae. Scutellum with long, moderately sparse setae (sometimes somewhat glabrous toward apex). Elytra coarsely, moderately abundantly punctate-rugose; each elytron with three carinae (sometimes outermost almost absent); with long, sparse setae near humerus laterally; remaining surface glabrous. Metasternum and metepisterna with long, abundant setae.

Ventrites I–II with long, moderately abundant setae (longer and more abundant on I); ventrite III–IV with long, sparse setae on basal one-half, with short sparse setae on distal one-half (sometimes absent, mainly on IV); ventrite V with moderately short setae, usually denser centrally, with long, sparse setae intermixed. Tarsomeres I–III moderately slender, not distinctly flattened; apices of tarsomeres I–III spined at apex (sometimes part of them just projected); pro- and mesotarsomeres I–III with spongy setal pads on ventral surface divided by distinct, moderately narrow glabrous longitudinal sulcus; spongy setal pads of metatarsi distinctly less dense than on pro- and mesotarsi; metatarsomere I from slightly shorter to as long as II–III together.



FIGURES 87–90. *Prionus* (*Homaesthesis*) *geminus* **sp. nov.**: **87**, holotype male, dorsal habitus; **88**, holotype male, ventral habitus; **89**, female, dorsal habitus; **90**, female, ventral habitus. Female specimen of the figures 88 and 89 was identified by John Chemsak as *Prionus integer*.

Female (Figs. 89–90). Head, excluding mandibles, about as long as 0.8 times length of prothorax at middle. Sculpture on dorsal face of head and area behind eyes finer, distinctly sparser than in male. Distance between upper eye lobes from 0.7 to 0.8 times length of scape; distance between lower eye lobes from 1.0 to 1.3 times length of scape. Head, pronotum, scutellum, metasternum and metepisterna glabrous; prosternum with short, sparse setae; prosternal process mostly glabrous, with short, moderately abundant setae at apex. Antennae nearly attaining apex of basal one-third of elytra; scape more slender (Fig. 8) than in male, from as long as to slightly longer than antennomere III, nearly attaining middle of upper eye lobe; antennomeres IV–XII with short imbrication, not emarginated centrally (Fig. 5), not carinate ventrally. Prothorax as in male, but punctures usually finer. Metathorax distinctly shorter than in male.

Dimensions in mm (male/female). Total length (from mandibles to elytral apex), 19.0–23.5/22.3–24.2; prothoracic length at center, 2.8–3.8/3.6–4.0; greatest prothoracic width, 5.2–7.8/7.4–7.8; humeral width, 7.8–10.5/9.5–9.7; elytral length, 14.3–17.5/15.2–15.6.

Type material. Holotype male, from USA, *Idaho*: Pocatello (Bannock County), 20.VI.1973, G. W. Ulrich col. (ESSIG). Paratypes—USA, *Utah*: Logan, 1 male, 3.VII.1937, G. F. Knowlton & W. P. Nye col. (USNM). *Idaho*: Pocatello (Bannock County), 1 male, 3.VIII.1993, [no collector indicated] (USNM); 1 male [identified as *P. integer* by Chemsak], 20.VI.1973, G. W. Ulrich col. (ESSIG). *Arizona*: Williams, 1 male, 23–28.VII.1957, Neal McFarland col. (MZSP). 1 male, 6 mi. E, Twin Falls, Twin Falls Co., IDA. 7-20-71, A.L. Antonelli collector (ACMT).

Additional material examined (females—not paratypes). USA, *Texas*: Fort Stockton, 1 female, 15.V.1966, Michelb. col. (ESSIG). *Colorado*: Fremont County, 1 female, 12.VII.1967, Scott col. (ESSIG) [identified and figured as *P. integer* by Chemsak (1996)]. *Colorado* (?), 1 female, [no detailed place, date and collector indicated) (USNM). 1 female, Star Lake, Lincoln Co. Ida., 7-15-59 (ACMT).

Remarks. *Prionus* (*Homaesthesis*) *geminus* differs from *P. (H.) emarginatus* by the: imbrication of antennomeres in males slightly emarginated at apex (distinctly bifurcated in *P.* (*H.*) *emarginatus*); last antennomere in males simple or slightly complex (distinctly complex in *P. emarginatus*); ventral side of antennomeres in female not carinate (distinctly carinate in *P. emarginatus*); apex of imbrication of antennomeres in female not emarginated at apex (emarginated in *P.* (*H.*) *emarginatus*).

We have seen many specimens of this species identified as *P. integer*. In the key by Chemsak (1996) it can really be identified as *P. integer*, and his picture 7 of plate VIII correspond to this species, and not to LeConte's species. In the key by Linsley (1962), some male specimens (mainly those with pronotal pubescence lost or partially lost) can also be identified as *P. integer*. However, the pronotal pubescence in true males of *P. integer* is absent or almost so on center of pronotum, and this is the most important feature that can be used to separate both species. Furthermore, the punctation on center of the pronotal disc in males of *P. integer* is distinctly finer than in *P. geminus*.

Since it was not possible to separate females of *P. geminus* from those of *P. integer* with any confidence, we did not designate females of the former as paratypes.

Etymology. Latin, *geminus* = twin; relative to the similarity to *P.* (*H.*) *emarginatus*.

Provisional key to American species of *Prionus* (*Prionus*)

(Observations: specimens without antennae usually are not identifiable; female of *P.* (*P.*) *evoluticornis* unknown; as *P.* (*P.*) *poultoni* is provisionally kept as a valid species, it was not included in the key)

1.	Pronotum coarsely punctate-rugose throughout, bicolored; elytral color contrasting with remaining surface of the body (except for lateral portion of pronotum)	*P.* (*P.*) *howdeni*
-	Pronotum smooth or punctate centrally, unicolored; elytra concolorous or nearly so with remaining surface of the body	2
2(1).	Antennae with, at least, 14 segments	3
-	Antennae with, at most, 13 segments	11
3(2).	Imbrication of antennomeres distinctly projected. Males	4
-	Imbrication of antennomeres, at most, slightly projected. Females	8
4(3).	Imbrication of antennomere III slightly emarginate, with innermost portion much larger than outermost (frequently almost indistinct)	*P.* (*P.*) *imbricornis*
-	Imbrication of antennomere III strongly emarginate, with both lobes of similar size	5
5(4).	Antennae, at least, 25-segmented	*P.* (*P.*) *fissicornis*
-	Antennae, at most, 17-segmented	6
6(5).	Antennae 17-segmented	*P.* (*P.*) *evoluticornis*

- Antennae with less than 17 segments 7
7(6). Antennae notably wide (Fig. 32). . . . . *P.* (*P.*) *aztecus*
- Antennae not notably wide (Fig. 33). . . . . *P.* (*P.*) *mexicanus*
8(3). Antennomeres elongate, not clearly expanded toward apex (Fig. 37) . . . . . *P.* (*P.*) *mexicanus*
- Antennomeres proportionally short, clearly expanded toward apex (Fig. 31, 41, 42) 9
9(8). Antennae 14-segmented . . . . . *P.* (*P.*) *aztecus*
- Antennae, at least, 17-segmented 10
10(9). Antennomeres distinctly emarginate (Fig. 41) . . . . . (*P.*) *fissicornis*
- Antennomeres slightly emarginate (Fig. 42). . . . . *P.* (*P.*) *imbricornis*
11(2). Elytra rugose-punctate in both sexes. . . . . *P.* (*P.*) *laticollis*
- Elytra only punctate in both sexes. 12
12(11). Antennae 13-segmented 13
- Antennae 12-segmented 14
13(12). Antennomere III proportionally short, wide (Fig. 130) in male; metasternum nearly glabrous in female. . . . . *P.* (*P.*) *lecontei*
- Antennomere III narrow, elongate (Fig. 133); metasternum pubescent throughout . . . . . *P.* (*P.*) *flohri*
14(12). Body in males wide (Fig. 143); metasternum nearly glabrous in female (Fig. 151) . . . . . *P.* (*P.*). *heroicus*
- Body elongate in males (Figs. 139, 163); metasternum, at least laterally, densely pubescent in female (Fig. 159). 15
15(14). Eyes (Figs. 139, 141) wide dorsally . . . . . *P.* (*P.*) *pocularis*
- Eyes slender (Fig. 164–166) dorsally . . . . . *P.* (*P.*) *californicus*

Prionus (*Prionus*) *howdeni* Chemsak, 1979

(Figs. 91–93)

Prionus (*Prionus*) *howdeni* Chemsak, 1979: 127; McNamara, 1984: 734 (type); Monné & Giesbert, 1994: 15 (checklist); Monné, 1995: 52 (cat.); Monné & Hovore, 2005: 20 (checklist); 2006: 19 (checklist); Bezark & Monné, 2013: 28 (checklist); Monné, 2015: 176 (cat.).

Prionus howdeni; Chemsak *et al.*, 1992: 21 (checklist); Noguera & Chemsak, 1996: 396 (distr.); Monné, 2002: 24 (host); Özdikmen & Turgut, 2009: 410.

Original description (Chemsak 1979): "*Male*: Form moderate sized; integument piceous, elytra and lateral margins of pronotum orange brown. Head with front very short, deeply impressed; mandibles moderately long, finely punctate; median impression deep, extending onto neck; punctures rather fine, confluent with rounded pits on vertex; eyes separated on vertex by about length of fourth antennal segment; antennae 12-segmented, reaching to a little beyond middle of elytra, segments slightly produced at apices, segments to sixth finely, sparsely punctate, outer segments finely striate. Pronotum narrower than base of elytra; lateral teeth moderate, anterior pair short, median pair larger, basal margin almost right angles; disk very irregularly, densely punctate, punctures consisting of rounded, elevated protuberances of varying sizes; prosternum barely punctate, very sparsely pubescent; mesosternum very finely, shallowly punctate; metasternum finely, densely punctate, densely clothed with long, erect, yellowish hairs. Scutellum glabrous, finely, moderately densely punctate, rounded behind. Elytra less than twice as long as broad; punctures dense, rugose, confluent, becoming finer toward apex; pubescence absent; each elytron bicostate, costae extending from base and uniting at apical one fourth; apices rounded, sutural angles lightly dentate. Legs slender, sparsely punctate; front tibiae excavated and asperate beneath; posterior tarsi slender, segments finely punctate and sparsely pubescent dorsally, third segment with lobes dentate at apices. Abdomen shining, glabrous, finely, rather sparsely punctate; last sternite emarginate at apex. Length, exclusive of mandibles, 31 mm."

Geographical distribution. Mexico (Durango).

Type, type locality. Holotype male from Mexico (Durango), deposited at CNC.

Remarks. We could not examine specimens of this species, but we examined photographs of the male holotype and a female (this latter figured at Bezark (2016)).

According to Chemsak (1979): "The coloration and sculpturing of the elytra and the unusual protruding punctures of the pronotum make this one of the most distinctive New World species of *Prionus*." That statement is certainly correct.

As usual, ventrite I is not totally glabrous, having short, sparse setae laterally. Also ventrites I–IV are coarser and more abundantly punctate laterally than centrally.

FIGURES 91–94. **91–93**, *Prionus* (*Prionus*) *howdeni*, holotype male: **91**, dorsal habitus; **92**, lateral habitus; **93**, head, frontal view. **94**, *Prionus* (*Prionus*) *evoluticornis*, paratype male, dorsal habitus. Photographs 91–93 by Serge Laplante; photograph 94 by Ziro Komiya.

Prionus (*Prionus*) *imbricornis* (Linnaeus, 1767)

(Figs. 42–45, 95–98, 179–180)

Cerambyx imbricornis Linnaeus, 1767: 622; Villers, 1789: 224 (note).

Cerambyx (*Prionus*) *imbricornis*; Gmelin, 1790: 1815.

Prionus coriarius var. *imbricornis*; Fabricius, 1781: 206.

Prionus imbricornis; Olivier, 1795: 28 (replaced status); Palisot de Beauvois, 1805: 242; Schönherr, 1817: 340; Lepeletier & Audinet-Serville, 1825: 202; Audinet-Serville, 1832: 192; Burmeister, 1836: 68; Sturm, 1843: 239; Haldeman, 1847b: 31; LeConte, 1852a: 108; White, 1853: 17; Melsheimer, 1853: 100 (cat.); LeConte, 1859a: 48; Lacordaire, 1868: 61 (note); Riley, 1870: 89 (biol.); 1872: 140 (biol.); Horn, 1872: 390 (distr.); Crotch, 1873: 83 (checklist); Putnam, 1876: 172, 173 (distr.); Popenoe, 1877: 33 (distr.); Snow, 1878: 67 (distr.); Schwarz, 1878: 456; Webster, 1879: 20 (etology); Crotch, 1880: 83 (checklist); Riley, 1880: 238 (host); LeConte & Horn, 1883: 274; Leng, 1884: 57, 58; Horn, 1885: 89; 1886: 138; Hamilton, 1886: 112 (larva); Blanchard, 1887: 86; Marten, 1890: 60 (biol.); Riley & Howard, 1891: 407 (biol.); Bruner, 1891: 240 (biol.); Forbes, 1894: 106 (larva); Hamilton, 1895: 337 (distr.); Beutenmüller, 1896: 74 (host); Lugger, 1899: 194 (biol.); Ulke, 1903: 25 (distr.); Hebard, 1903: 261 (biol.); Tucker, 1906: 12 (distr.); Kellogg, 1906: 283; Wickham, 1909: 28 (distr.); Blatchley, 1910: 1012; Leng, 1911: 215 (distr.); Lameere, 1912a: 239; Fisher & Kirk, 1912: 309 (distr.); Lameere, 1913: 77 (cat.); Craighead, 1915: 18 (larva); Lameere, 1919: 137; Lutz, 1921: 338; Craighead, 1923: 29 (larva); Kirk & Knull, 1926: 21 (distr.); Leonard, 1928: 433 (distr.); Ware, 1929: 368 (distr.); Beaulne, 1932: 197 (host); Doane *et al.*, 1936: 165 (distr.); Brimley, 1938: 210 (distr.); Löding, 1945: 113 (distr.); Knull, 1946: 146; Craighead, 1950: 261 (host); Jaques, 1951: 251; Beal *et al.*, 1952: 71; Alexander, 1958: 49 (distr.); Anderson, 1960: 401; Dillon & Dillon, 1961: 580; Frost, 1969: 95 (distr.); Payne *et al.*, 1970: 3; Baker, 1972: 200 (biol.); Swan & Papp, 1972: 442; Kirk & Balsbaugh, 1975: 96 (distr.); Payne *et al.*, 1975: 680 (biol.); Mullins, 1975: 43 (biol.); Stein & Tagestad, 1976: 31; Payne *et al.*, 1976: 9 (biol.); Turnbow & Franklin, 1980: 338 (distr.); White, 1985: 281; Yanega, 1996: 27; Linsley & Chemsak, 1997: 424 (host); Hanks, 1999: 487, 493, 494; Robimson, 2005: 85; Buck *et al.*, 2005: 63; Kelley *et al.*, 2006: 252, 253, 254, 255; Lingafelter, 2007: 18 (key), 138; Barbour *et. al.*, 2011: 590, 591, 592; Hart *et al.*, 2013: 134, 139 (distr.).

Prionus? *imbricornis*; Chevrolat, 1852: 650.

Prionus (*Riponus*) *imbricornis*; Casey, 1912: 248 (key).

Prionus (*Neopolyarthron*) *imbricornis*; Casey, 1924: 222 (key); Ortenburger & Hatch, 1926: 146 (distr.); Hatch, 1930: 26; Gilmour, 1954: 45 (distr.); Linsley, 1957: 9; Linsley, 1962: 46; Arnett, 1985: 360; Hovore *et al.*, 1987: 294 (distr.); Chemsak *et al.*, 1992: 21 (checklist); Lingafelter & Horner, 1993: 164 (distr.); McRae, 1993: 227 (distr.); Monné & Giesbert, 1994: 16 (checklist); Monné, 1995: 54 (cat.); Chemsak, 1996: 111; Heffern, 1998a: 6 (distr.); Shiefer, 1998: 115 (distr.); Peck & Thomas, 1998: 116 (distr.); Monné & Hovore, 2005: 21 (checklist); 2006: 20 (checklist); Özdikmen & Turgut, 2009: 410; Bezark & Monné, 2013: 27 (checklist).

Prionus (*Riponus*) *imbricornis mimus* Casey, 1912: 248; Linsley, 1957: 9 (*syn.*); Lingafelter *et al.*, 2014: 78 (type).

Prionus (*Neopolyarthron*) *imbricornis mimus*; Casey, 1924: 222.

Prionus (*Riponus*) *imbricornis brunneus* Casey, 1912: 248; Linsley, 1957: 9 (*syn.*); Lingafelter *et al.*, 2014: 78 (type).

Prionus (*Neopolyarthron*) *imbricornis brunneus*; Casey, 1924: 222.

Prionus (*Riponus*) *diversus* Casey, 1912: 247; Linsley, 1957: 9 (*syn.*); Lingafelter *et al.*, 2014: 54 (type).

Prionus (*Neopolyarthron*) *diversus*; Casey, 1924: 222; Hatch, 1930: 26

Prionus robustus; Brimley, 1938: 210 (distr.);

Prionus (*Neopolyarthron*) *imbricornis diversus*; Ortenburger & Hatch, 1926: 146 (distr.).

Prionus imbricornis diversus; Alexander, 1958: 49 (distr.).

Prionus (*Riponus*) *diversus cuneatus* Casey, 1912: 247; Linsley, 1957: 9 (*syn.*); Lingafelter *et al.*, 2014: 54 (type).

Prionus (*Neopolyarthron*) *cuneatus*; Casey, 1924: 222.

Prionus (*Neopolyarthron*) *robustus* Casey, 1924: 222; Linsley, 1957: 9 (*syn.*); Lingafelter *et al.*, 2014: 310 (type).

Prionus debilis Casey, 1891: 21; Henshaw, 1895: 24 (cat.); Hamilton, 1896: 164 (*syn.*); Rice, 1981: 459 (distr.); Leng, 1927: 39; Yanega, 1996: 26; Lingafelter, 2007: 12 (key); 138; Lingafelter *et al.*, 2014: 50 (type). ***Syn. nov.***

Prionus (*Riponus*) *debilis*; Casey, 1912: 249.

Prionus (*Neopolyarthron*) *debilis*; Casey, 1924: 222; Linsley, 1962: 47 (revalidation); Chemsak *et al.*, 1992: 21; McRae, 1993: 227 (distr.); Monné & Giesbert, 1994: 16 (checklist); Monné, 1995: 54 (cat.); Chemsak, 1996: 112; Heffern, 1998b: 174 (distr.); Peck & Thomas, 1998: 116 (distr.); Monné & Hovore, 2005: 21 (checklist); 2006: 20 (checklist); Özdikmen & Turgut, 2009: 410; Bezark & Monné, 2013: 27 (checklist). ***Syn. nov.***

Prionus imbricornis debilis; Leng (1920): 266 (new status); Brimley, 1938: 210 (distr.).

Prionus imbricornis var. *debilis*; Knull, 1946: 146.

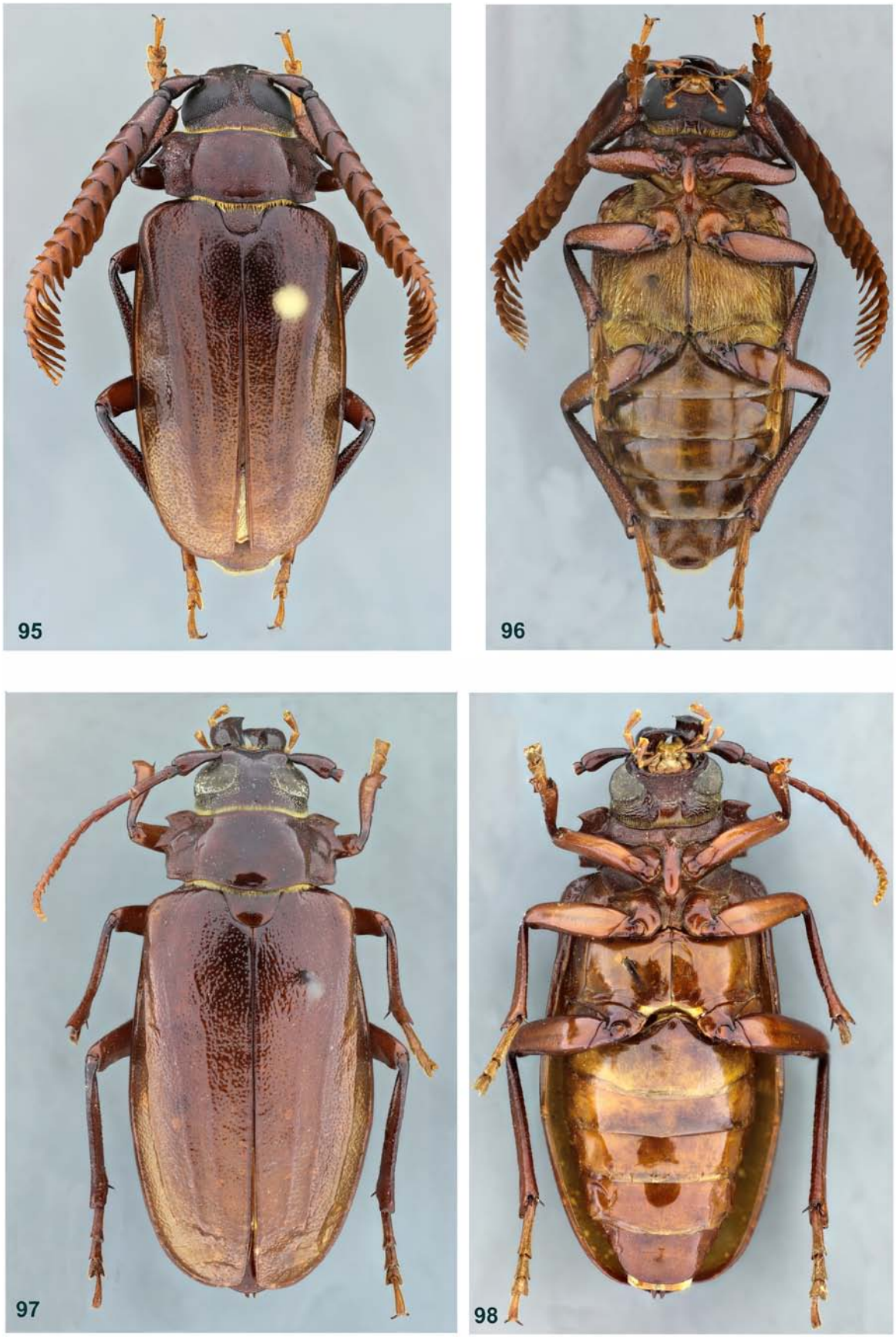
Prionus simplex; Alexander, 1958: 49 (distr.; error of identification).

Prionus beauvoisi Lameere, 1915: 60; 1919: 138 (*syn.*). ***Syn. nov.***

Prionus brevicornis; Palisot de Beauvois, 1805: 216 (not Fabricius, 1801).

Prionus (*Antennalia*) *fissicornis parviceps* Casey, 1912: 250; Lameere, 1919: 138 (*syn.*, in doubt); Linsley, 1957: 9 (*syn.*); Lingafelter *et al.*, 2014: 62 (type). ***Syn. nov.***

Prionus (*Antennalia*) *parviceps*; Casey, 1924: 223.



FIGURES 95–98. *Prionus* (*Prionus*) *imbricornis*: **95**, male, dorsal habitus; **96**, male, ventral habitus; **97**, female, dorsal habitus; **98**, female, ventral habitus.

Integument from reddish to brown, distinctly darker dorsally (frequently dark-brown), mainly on head and pronotum (head always totally darker).

Male (Figs. 95–96). Head, excluding mandibles, from 0.95 to 1.15 times as long as prothorax at central area, elongate behind eyes (distance from posterior ocular edge to the prothorax slightly less than greatest length of upper eye lobe). Longitudinal dorsal furrow distinct from clypeus to level of posterior edge of upper eye lobes (sometimes distinct, or nearly so, up to anterior edge of prothorax). Frons moderately coarsely, sparsely punctate (sometimes punctures denser or partially confluent); area between antennal tubercles with variable sculpture (from as on frons to distinctly coarser and denser); area between upper eye lobes coarsely, confluently punctate (usually more so close to eyes), but sometimes finer, sparser toward longitudinal furrow; dorsal area between eyes and prothorax moderately finely, sparsely punctate, more so near prothorax (sometimes with central region almost smooth); dorsal area with short, sparse setae (denser near upper eye lobes); area behind upper eye lobes moderately finely, confluently punctate (more so close to eyes), but sometimes sparser, with short, moderately sparse setae; area behind lower eye lobes somewhat rugose about middle, moderately abundantly punctate toward inferior side, with short, sparse setae toward prothorax, with long, moderately abundant setae close to eye. Antennal tubercles moderately finely, sparsely punctate on basal one-half, gradually smoother toward apex; glabrous. Postclypeus coarsely, confluently punctate laterally, centrally smooth or almost so; with moderately abundant setae laterally, glabrous centrally. Anteclypeus not or distinctly separated from postclypeus; smooth, glabrous. Labrum with very long, moderately sparse setae on basal one-half, denser toward apex; brush with long setae along anterior margin. Eyes large; distance between upper eye lobes from 0.35 to 0.65 times length of scape; distance between lower eye lobes from 0.4 to 0.7 times length of scape. Submentum trapezoid, distinctly narrow toward gula, somewhat depressed, with anterior margin narrow, distinctly elevated; surface rugose, with short, sparse setae centrally, and long setae laterally. Apex of labial palpi surpassing middle of maxillary palpomere IV. Mandibles about 0.45 times as long as head; latero-basal one-third depressed. Antennae 17- to 20-segmented; nearly attaining distal one-third of elytra. Scape moderately finely, abundantly punctate dorsally on basal one-third, gradually sparser toward apex (sometimes with smooth area about middle); moderately finely and abundantly punctate laterally; glabrous or with short, sparse setae dorsally on basal one-third. Antennomere III (Fig. 43) slightly longer dorsally than scape, distinctly enlarged toward apex (largest greatest width from 1.65 to 1.80 times basal width); imbrication very distinct, clearly projected (Fig. 44); apex of imbrication slightly bifurcate (Fig. 45), but always with innermost portion much larger than outermost (frequently, difference almost indistinct); dorsal surface finely, sparsely punctate centrally on basal two-thirds, densely punctate on distal one-third (sometimes sparsely punctate). Dorsal surface of remaining antennomeres finely, densely punctate (sometimes partially sparsely punctate on basal one-third of basal antennomeres), gradually striate toward distal antennomeres. Last antennomere complex.

Maximum prothoracic width from 0.8 to 0.9 times elytral base; anterolateral angles rounded, projected forward (sometimes only slightly projected); sides with two distinct acute teeth, one close to anterolateral angle (sometimes almost absent) and another about middle; posterolateral angle from rounded to distinctly acute and projected. Pronotum moderately finely and abundantly punctate, usually slightly less dense laterally; glabrous; center of disc from convex to somewhat flat. Prosternum moderately finely, densely punctate, somewhat rugose laterally; with long, abundant setae laterally; usually almost glabrous centrally. Prosternal process not sulcate; almost glabrous centrally. Elytra moderately coarsely, abundantly punctate; each elytron with three carinae, innermost two most distinct; sutural spine short but distinct (sometimes sutural angle not spined, only slightly projected). Metasternum densely microsculptured; with very long, dense setae. Metepisterna with sculpture and setae as that of metasternum.

Ventrite I with moderately long setae on base, especially on anterior process; ventrites I–IV sparsely, finely punctate, more distinct on distal one-third (sometimes, punctures absent or almost so); ventrites II–IV glabrous or almost so; ventrite V finely, sparsely punctate on basal one-half, denser on distal one-half; ventrite V with short, sparse setae on basal one-half, slightly longer, denser on distal one-half. Tarsomeres I–III moderately slender, mainly metatarsomeres; protarsomeres I–II not or slightly acute at apex, not projected; mesotarsomeres I–II acute and projected at apex; metatarsomeres I–II spined at apex of lobes; tarsomeres I–III with spongy setal pads on ventral surface with distinct longitudinal sulcus centrally, wider on metatarsomeres.

Female (Figs. 97–98). Head, excluding mandibles, from 0.8 to 0.9 times length of prothorax at middle. Sculpture on dorsal face of head and area behind eyes similar to that in male, but more distinct smooth central area on vertex. Distance between upper eye lobes equal to about 0.7 times length of scape; distance between lower eye

lobes equal to about 0.9 times length of scape. Submentum as in male. Antennae with 17–22 segments, nearly reaching basal one-third of elytra; scape similar to that in male; antennomere III from 0.80 to 0.85 times length of scape; antennomeres (Fig. 42) ventrally carinate after VI–VII, with apex slightly emarginate from about middle of antenna. Prothorax similar to that in male. Metasternum densely microsculptured laterally, gradually finer, sparser toward center; glabrous or with very short, sparse setae near metacoxae. Metepisterna microsculptured, glabrous throughout.

Dimensions in mm (male/female). Total length (including mandibles), 23.8–37.5/36.8–43.3; prothoracic length at center, 3.1–5.5/5.3–5.9; widest prothoracic width, 7.1–12.2/12.1–14.0; humeral width, 8.5–14.4/13.4–16.1; elytral length, 17.9–27.6/25.7–30.4.

Geographical distribution. Canada [Ontario (Beaulne, 1932)], United State [South Caroline (Linnaeus, 1767), North Caroline (Leng, 1911), Illinois (Webster, 1879), District of Columbia (Ulke, 1903), Texas (Tucker, 1906), Georgia (Hebard, 1903), Indiana (Casey, 1891), New York (Casey, 1912), Mississippi (Lameere, 1912), Louisiana (Lameere, 1912a), Kansas (LeConte, 1859a), Virginia (Linsley, 1962), West Virginia (Craighead, 1915), South Dakota (Gilmour, 1954), Florida (Schwarz, 1878), Connecticut (Linsley, 1962), Nebraska (Bruner, 1891), Alabama (Löding, 1945), Arkansas (Hatch, 1930), Colorado (Chemsak, 1996), Iowa (Putman, 1876), Kentucky (Linsley, 1962), Maryland (Linsley, 1962), Minnesota (Linsley, 1962), Missouri (Riley, 1870), Montana (Chemsak, 1996), New Hampshire (Heffern, 1998), Ohio (Knull, 1946), Oklahoma (Ortenburger & Hatch, 1926), Pennsylvania (Gronovius, 1764), Tennessee (Linsley, 1962), New Mexico (LeConte, 1859a), Delaware (Linsley, 1962), North Dakota (Chemsak, 1996)], *Wisconsin* (**new state record**), and Dominican Republic (Palisot de Beauvois, 1805).

Types, type localities. Of *Cerambyx imbricornis*: According to Linnaeus (1767): "C. thorace marginato bidentato, corpore ferrugineo, elytris mucronatis, antennis perfoliato imbricates brevioribus"; and "Statura C. coriarii. Antennae subtus imbricate 17 laminis ovato-oblongis."; "Habitat in Carolina." Linnaeus (1767) recorded two works where the species was described and/or figured: "*Gron. mus. 529*" and "*Roes. ins. scar. 2. T. 1. fig. 1*". The figure in Rösel (1746) shows a male with anterolateral angles of prothorax very prominent. This feature does not agree with the species currently known as *P. imbricornis*. However, it is not possible to affirm anything based only on that poor drawing. But we can affirm that the specimen used by Rösel (1746), mentioned by Linnaeus and Gronovius (1764), is a syntype of *C. imbricornis* (ICZN (1999: Articles 3.2, 12.2 and 72.4.1.1). In the same way, the specimen described by Gronovius (1764) is also a syntype of *C. imbricornis*. Thus, *C. imbricornis* was described from "Carolina" (Linnaeus, 1767) and Pennsylvania (Gronovius, 1764). We do not know where the specimens recorded by Rösel and Gronovius are deposited, or if they survived. According to Deny (1948): "If readers of the twelfth edition of the Systema Naturae (1766–1768) mark well the words "Habitat in Carolina. D. Garden," they will be impressed by the frequency with which that expression appears in Volumes 1 and 2. Linnaeus' references were to Dr Alexander Garden who made his home in Charleston, South Carolina, until the outbreak of the American Revolution. It is not possible to know how many specimens Linnaeus (1767) used to describe *C. imbricornis*. We know that at least a syntype is deposited at LSL. Apparently, there are no types of this species deposited at UUZM, because Wallin (2001) did not list *Cerambyx imbricornis* in this collection. LSL website (2013) records two specimens from Linnaeus' collection identified as *C. imbricornis*. The specimen "LINN 3650", is certainly not *Prionus imbricornis*: it is a male of *P. coriarius* (Linnaeus, 1758) from Darenth (Kent, England). The other specimen, "LINN 3649", we believe is a syntype of *C. imbricornis*. The specimen agrees well with the original description, including having 19 antennal segments (scape, pedicel, and 17 imbricate segments, as indicated by Linnaeus). Syntype figured at http://linnean-online.org/linnaeus.html

Of *Prionus* (*Riponus*) *diversus*: described based on males (at least two specimens) and a single female. All specimens are from USA (Indiana) and are deposited at USNM. Lingafelter *et al.* (2014) designated lectotype. Lectotype figured at Lingafelter *et al.* (2016).

Of *Prionus* (*Riponus*) *diversus cuneatus*: described from at least two males from North Carolina (Southern Pines). The specimens are deposited at USNM. Lingafelter *et al.* (2014) designated lectotype. Lectotype figured at Lingafelter *et al.* (2016).

Of *Prionus* (*Riponus*) *imbricornis brunneus*: Holotype male, from North Caroline (Southern Pines), deposited at USNM. Figured at Lingafelter *et al.* (2016).

Of *Prionus* (*Riponus*) *imbricornis mimus*: Holotype male (type locality unknown), deposited at USNM. Figured at Lingafelter *et al.* (2016).

Of *Prionus* (*Neopolyarthron*) *robustus*: Holotype female from North Carolina (Southern Pines), deposited at USNM. Figured at Lingafelter *et al.* (2016).

Of *Prionus debilis*: Described based on seven males from Indiana, Missouri, and Kansas, deposited at USNM. Lingafelter *et al.* (2014) designated lectotype, with Indiana becoming the type locality. Lectotype figured at Lingafelter *et al.* (2016).

Of *Prionus beauvoisi*: holotype female from Dominican Republic (Santo Domingo), deposited at MNHN.

Of *Prionus* (*Antennalia*) *fissicornis parviceps* (Figs. 179–180): holotype female from USA (Texas), deposited at USNM. Figured at Lingafelter *et al.* (2016).

Material examined. USA, *Georgia*: Athens, 1 male, 24.VI.1994, [no collector indicated] (UNESP); Atlanta, 1 male, VII.01.1965, R. E. Fontaine col. (ESSIG); 1 male, VII.09.1966, R. E. Fontaine col. (ESSIG); Tattnall County (3 miles E Hwy 147, near Ohoopee), 1 male, VI.19–20.1998, Wappes & Morris col. (MZSP). *Missouri*: Barnhart (Jefferson County), 1 male, VII.31.1937, E. P. Meiners col. (ESSIG). *South Carolina*: Wellford, 1 female, VI.16.1937, R. M. McKenzie. *Oklahoma*: Catoosa, 1 male, VI.08.1939 [no collector indicated] (ESSIG). *Nebraska*: Valentine (Cheery County), 1 male, VII.05.1964, J. W. Johnson col. (ESSIG). *North Dakota*: Walcott Dunes, 1 male, VII.17.1975, Doug Scott col. (ESSIG). *South Dakota*: Lawrence County (McNenny Fish Hatchery, 11 mi. NW Spearfish, 1 female, VII.21.1953, [no collector indicated] (ESSIG). *Louisiana*: Chicot State Park, 1 male, VI.23.1971, [no collector indicated] (MZSP). *Wisconsin*: Beloit, 1 male, VII.11.1971, [no collector indicated] (MZSP).

Remarks. Linsley (1962) and Chemsak (1996) indicated that the antennae in *Prionus* (*Neopolyarthron*) have from 15 to 20 segments. All specimens examined by us have at least 17 segments, although it is certainly possible that specimens exist with 15 segments.

According to Linnaeus (1767) [translation]: "Cerambyx with thorax marginate, bidentate, body ferruginous, elytra mucronate, antennae perfoliate, imbricate, short"; and "Length as in *Cerambyx coriairus*. Antennae underneath imbricate with 17 segments ovate-oblong." Linnaeus (1767) recorded two works where the species was described and/or figured: "*Gron. mus. 529*" and "*Roes. ins. scar. 2. T. 1. fig. 1*". As seen above, the figure in Rösel (1746) does not agree with the species currently known as *P. imbricornis*. However, it is not possible to affirm anything based only on that poor drawing.

Fabricius (1781: 206) considered *C. imbricornis* as a variety of *C. coriarius* [translation]: "Cerambyx imbricornis… *Linn. Syst. Nat. 2. 622. 5*. It is just a variety. Lives in rotten birch in Europe and North America." Villers (1789: 224) did not make clear his opinion when he wrote on *C. coriarius*, but apparently he did not agree with Fabricius [translation]: "Obs. 2. *Cerambyx imbricornis* Linn. mere variety, according to D. Fab." Gmelin (1790: 1815) listed *C. imbricornis* with doubtful status [translation]: "Lives in Carolina, stature of *coriarius*, is this mere variety?" We consider that Olivier (1795: 66: 28, 66: 29) elevated *C. imbricornis* to species status, although mistakenly attributed the status of this variety to Linnaeus [translation]: "It is of the shape and size of Prione tanner [*P. coriarius*], which Linnaeus said it could be a variety; it differs in the shape and number of antennal segments, which in Prione tanner are composed of only twelve segments, whereas in the latter [*P. imbricornis*] they are twenty in number.." Those changes on the status of *C. imbricornis* are not mentioned in catalogues (*e.g.* Monné 1995).

Hamilton (1896) synonymized *Prionus debilis* under *P. imbricornis*: "*Prionus debilis* Casey, 1891, An. N. Y. Acad. Sci. vi, 21. This is a synonym of IMBRICORNIS, being a description of a small and well-known race of that species." Lameere (1912a) also considered *Prionus debilis* a synonym of *P. imbricornis* [translation]: "the small newly hatched male specimens with pale elytra were described as distinct species under the name of *P. debilis* by Casey." The synonym was simply ignored by Casey (1924). Brimley (1938), apparently following Leng (1920), considered *P. debilis* as subspecies of *P. imbricornis*. Knull (1946), without explanation on the status, recorded *P. debilis* as a variety of *P. imbricornis*: "Smaller than *imbricornis*, less convex, light brown in color." Linsley (1962), also without explanation on the formal revalidation or on the status, considered *P. debilis* as a distinct species, condition maintained up to now: "This species is very closely related to *imbricornis* and the two are sympatric over much of the western part of the range of the latter. *P. debilis* has a smaller average size, however, is apparently always pale rufotestaceous in color, and differs by having the antennae sparsely, coarsely punctate above."

According to Casey (1891) *P. debilis* differs from *P. imbricornis* by "its much smaller size, narrower, more parallel and less convex form, less chitinized and paler elytra, in the more widely separated eyes and in the vestiture of the hind tarsi." For Linsley (1962), *P. debilis* differ from *P. imbricornis*: "Antennae coarsely, sparsely

punctate above; color rufotestaceous", besides smaller size (*P. imbricornis*—"Antennae finely, closely punctate above; color brown, rarely rufotestaceous", and larger size). Chemsak (1996) recorded the same description for males, and added for females: "Elytra with disk finely punctate, scarcely rugose; color reddish-brown", for *P. debilis*; and "Elytra strongly punctate, rugose; color dark brown to piceous, for *P. imbricornis*." Lingafelter (2007) separated *P. debilis* from *P. imbricornis* in the couplet 16: "Maximum width of pronotum (including spines) distinctly narrower than elytral base. Color reddish-brown", for *P. debilis*; and "Maximum width of pronotum (including spines) about equal to elytral base. Color light to dark reddish-brown", for *P. imbricornis*, *P. laticollis*, and *P. pocularis*."

All these features are variable in *P. imbricornis*. As for differential characters pointed out by Casey (1891), we can affirm that size is highly variable in all species of *Prionus*, and usually also in nearly all Prioninae. Thus, it is not a reliable feature to separate the species. Regarding body form, we examined specimens with the body shape somewhat variable. Also, comparing the body shape of holotypes males of *P. debilis* and *P. imbricornis brunneus*, it is possible to see that they are very similar. The "less chitinized and paler elytra" suggests a newly emerged specimen, as indicated by Lameere (1912a). The distance between upper eye lobes is slightly variable in males of *P. imbricornis*, as we could see in the specimens examined (independent of size and/or color). Also, comparing this feature in the holotypes of *P. diversus* and *P. imbricornis mimus* (both currently in the synonymy of *P. imbricornis*) it is evident that the distance between upper eye lobes are different. Also comparing the syntype of *C. imbricornis* with the lectotype of *Prionus debilis*, it is possible to see that there is no difference between distance of upper eye lobes, and the elytral color is nearly the same. According to Casey (1891) on the metatarsus: "posterior tarsi very slender, the under surface densely pubescent only in two small spots at the apices of joints one to three." This description does not agree with the metatarsus of a paralectotype examined. Actually, the metatarsus is identical to that in *P. imbricornis*.

For the two differences recorded by Linsley (1962), we examined specimens with different size, color, and with antennomeres sparsely or closely punctate above (mainly on III and IV), showing that those features are variable in *P. imbricornis*. In the specimens examined, when the dorsal area of antennomeres are finely and closely punctate (microsculptured), the area covered by this punctation is variable, being more evident laterally, and always there is a shining, almost impunctate area dorsally; frequently, there are also coarse punctures mixed laterally and/or dorsally. Specimens were examined that agree very well with the lectotype of *P. debilis* (shape, size, color, etc.) that have very different kind of sculpture on dorsal surface of antennomeres (mainly on III and IV), being laterally microsculptured or only coarsely, sparsely punctate.

The differences between females of *P. imbricornis* and *P. debilis* recorded by Chemsak (1996) are inconsistent as the elytral sculpture is highly variable in males and females of *P. imbricornis*. The holotype male of *P. debilis* also has the elytra very coarsely and abundantly punctate while the elytral sculpture of typical *P. imbricornis* is usually not so evident. Thus, if males of *P. debilis* have elytral punctation coarser than males of *P. imbricornis* (or at least, equal), there would be no reason to suppose that the elytral punctation in females is any different. In the key to *Prionus* (*Neopolyarthron*) males, Chemsak (1996) figured antennomere III completely finely punctate dorsally. We did not see this condition in the specimens examined, but it is possible that this happens in the species. The antenna figured as being from a male of *P. debilis* is a female antenna. As in males, the sculpture of female antennae is variable.

The differences recorded by Lingafelter (2007) are also variable in *P. imbricornis*. Comparing the lectotype of *P. diversus* with the lectotype of *P. diversus cuneatus*, and also with the type males of *P. imbricornis brunneus* and *P. i. mimus*, it is possible to see just how much the width and shape of the prothorax can vary.

Based on the mix of differential characters for the two species, we place *P. debilis* as a new synonym of *P. imbricornis*.

Casey (1924), without explanation, considered *Prionus cuneatus*, described as subspecies of *Prionus diversus*, as a distinct species. Ortenburger & Hatch (1926) recorded: "In the list the numbers before the species are those used in C. W. Leng's "Catalogue of the Coleoptera of America North of Mexico" (1920)." According to Leng (1920): "In cataloguing the names proposed by Casey in *Prionus*, the introductory paragraph on p. 215 of his Mem. III, stating that some apply to forms connected by intermediates and destined to speedy extinction, coupled with the suggestion on p. 245 that the abnormal characters employed to distinguish some might not prove constant with more material, has been assumed to warrant doubt to their standing, as to cause the omission of numbers". Leng (1920) also recorded: "89. imbricornis (L.) 67-622 Ind. Ill.-La. Fla. N.Y. / a. debilis Csy. 91-21 Ind. Mo. Kan. /

diversus Csy. 12-247 Ind. / cuneatus Csy. 12-247 B.C. / mimus Csy. 12-248 ? / brunneus Csy. 12-248 N.C." In his catalogue, Leng (1920) used a letter to indicate when he considered a species as subspecies. Thus, he considered *Prionus debilis* as a subspecies of *Prionus imbricornis,* disagreeing with Hamilton (1896), although, Leng (1920) was apparently following Lameere (1919), who followed the former. As seen above, Lameere (1919) considered the species listed above by Leng (1920) as possible synonyms, except *P. debilis*, listed as a true synonym by Lameere (1912, 1913, 1919). Using this concept, and the explanation above on Casey's species (and subspecies), based on the position in which Leng (1920) included those names ("diversus", "cuneatus", "mimus", and "brunneus"), it is possible to infer that Leng (1920) was considering them as possible subspecies of *P. imbricornis*. However, the citations by Leng (1920) are very confused, because "*mimus*" and "brunneus" were described as subspecies of *P. imbricornis*, and "cuneatus" as subspecies of *P. debilis*. Thus, as it is not possible to know if Leng (1920) was suggesting synonyms or subspecies, it is obligatory to consider without change the condition of the species and subspecies between Lameere (1919) and Linsley (1957), except the status of *Prionus debilis* that was formally listed as subspecies of *Prionus imbricornis*. Apparently Ortenburger & Hatch (1926) considered that Leng (1920) changed the status of *Prionus diversus* to subspecies of *P. imbricornis*. Alexander (1958) followed Ortenburger & Hatch (1926), recording *Prionus imbricornis diversus*.

Lameere (1919), in doubt, considered *Prionus* (*Riponus*) *imbricornis mimus*, *P.* (*R.*) *imbricornis brunneus*, *P.* (*R.*) *diversus*, and *P.* (*R.*) *diversus cuneatus*, as synonyms of *Prionus imbricornis*. However, it was Linsley (1957) who formally established the synonym of those species under *P. imbricornis*: "I have been unable to detect any population significance for any of the variants named by Casey. Three of his names were based on specimens from Southern Pines, North Carolina (*brunneus*, *cuneatus*, *robustus*). A fourth was from Indiana (*diversus*). The type locality for *mimus* was not indicated."

Lameere (1919) also indicated as synonyms of *P. imbricornis*, without any explanation: *P. beauvoisi* Lameere, 1915, and *P. brevicornis sensu* Palisot de Beauvois, 1805 (not *P. brevicornis* Fabricius, 1801). Linsley (1957, 1962), and Chemsak *et al.* (1992) did not include the first as a valid species or as a synonym of any species. Monné & Giesbert (1994), Monné (1995), Monné & Hovore (2005, 2006), and Monné & Bezark (2011) recorded *P. beauvoisi* as synonym of *P. laticollis*. We do not know why those latter authors of catalogues and checklists transferred *P. beauvoisi* from the synonym of *P. imbricornis* to the synonym of *P. laticollis*. According to Lameere (1915) [translation]: "One female of *Prionus* from Santo Domingo, with antennae with 14 segments, was described and figured by Palisot de Beauvois (*Ins. Afr. et Amer., 1805, p. 216, t. 34, f. 3*) under the wrong name of *P. brevicornis* F. It does not belong to any known species, and I propose to designate this insect, that needs to be found, under the name of **P. Beauvoisi**." According to Palisot de Beauvois (1805) [translation]: "**PRIONUS** BREVICORNIS. *FAB* ? Piceous; thorax tridentate, dark, shiny; antennae short, 14-segmented, latest 10 antennomeres laterally serrate on one side; elytra punctate (*Fig. 3*). Santo Domingo"; "Obs. This insect has much to do with *PRIONUS coriarius*. It is much thicker. Although the description of Fabricius is very terse and incomplete, I think that this species is the same that he named BREVICORNIS."

Prionus beauvoisi cannot be *P. laticollis*, because the holotype has antennae with 14 segments, while in the latter the females have antennae with 12 segments. According to Linsley (1962) and Chemsak (1996), females of *P. imbricornis* have antennae with from 15 to 18 segments. However, the holotype female of *P. robustus*, synonymized with *P. imbricornis* by Linsley (1957), has antennae with 19 segments (according to Casey). In turn, the holotype of *P. beauvoisi* has antennae with 14 segments. Thus, both holotype specimens do not agree with the description by Linsley (1957) and Chemsak (1996) on the number of antennal segments. Also, the drawing of *P. beauvoisi*, does not agree with *P. imbricornis* as its prothorax seems different.

Curiously, either *P. beauvoisi* is not mentioned in the synonymic list of *P. laticollis* (or *P. imbricornis*) or, when it is listed, Dominican Republic is not mentioned as the country where the species occurs (*P. laticollis*).

It is not possible to affirm anything about *P. beauvoisi* without examining the holotype female. If *P. beauvoisi* really is not *P. laticollis*, then *P. brevicornis sensu* Palisot de Beauvois (1805) cannot be listed in the reference list of *P. laticollis*, because the specimen used as model to the drawing is the holotype of Lameere's species.

The holotype of *Prionus* (*Antennalia*) *fissicornis parviceps* has the typical antennomeres of *P.* (*P.*) *imbricornis*. Thus, we are transferring the subspecies from the synonymy of *P.* (*P.*) *fissicornis* to that of *P.* (*P.*) *imbricornis*.

In summary, we agree with the synonyms of *P. imbricornis* established by Linsley (1957), and consider as synonyms of this species: *Prionus* (*Riponus*) *diversus*, *P.* (*R.*) *diversus cuneatus*, *P.* (*R.*) *imbricornis mimus*, *P.* (*R.*) *imbricornis brunneus*, *P.* (*Neopolyarthron*) *robustus*, *P. debilis*, *P. beauvoisi*, *Prionus* (*Antennalia*) *fissicornis parviceps*, and *P. brevicornis sensu* Palisot de Beauvois (adding three species and one reference).

Prionus (*Prionus*) *fissicornis* Haldeman, 1846

(Figs. 38–41, 99–102, 181–182)

Prionus fissicornis Haldeman, 1846: 125; 1847a: 374; LeConte, 1852a: 108; White, 1853: 17; Melsheimer, 1853: 100 (cat.); LeConte, 1858: 40 (distr.); 1859a: 19, 48; 1873: 289; Lacordaire, 1868: 61; Horn, 1872: 390 (distr.); Crotch, 1873: 83 (checklist); Putnam, 1876: 172 (distr.); Snow, 1878: 67 (distr.); Popenoe, 1878: 82 (distr.); Crotch, 1880: 83 (checklist); LeConte & Horn, 1883: 274; Leng, 1884: 57, 59; Blanchard, 1887: 86; Bateson, 1894: 412; Snow, 1903: 198 (distr.); Evans, 1906: 99 (distr.); Fall & Cockerell, 1907: 191 (distr.); Wickham, 1909: 28 (distr.); Casey, 1912: 250; Lameere, 1912a: 240; 1913: 17 (cat.); 1919: 138; Swenk, 1922: 200; Doane *et al.*, 1936: 165; Brimley, 1938: 210 (distr.); Smith *et al.*, 1943: 311; Alexander, 1958: 49 (distr.); Kirk & Balsbaugh, 1975: 97 (distr.); Stein & Tagestad, 1976: 31; Turnbow & Franklin, 1980: 347; Yanega, 1996: 27; Lingafelter, 2007: 12 (key), 138; Hart *et al.*, 2013: 134, 139 (distr.).

Prionus (*Antennalia*) *fissicornis*; Casey, 1924: 223; Linsley, 1957: 9; 1962: 49; Hovore *et al.*, 1987: 294 (distr.); Chemsak *et al.*, 1992: 21 (checklist); MacRae, 1993: 227 (distr.); Lingafelter & Horner, 1993: 165 (distr.); Monné & Giesbert, 1994: 15 (checklist); Monné, 1995: 55 (cat.); Chemsak, 1996: 113; Heffern, 1998a: 6 (distr.); Monné & Hovore, 2005: 21 (checklist); 2006: 20 (checklist); Özdikmen & Turgut, 2009: 410; Bezark & Monné, 2013: 26 (checklist).

Prionus (*Antennalia*) *fissicornis transversus* Casey, 1912: 251; Lameere, 1919: 138 (*syn*., in doubt); Linsley, 1957: 9 (*syn*.); Lingafelter *et al.*, 2014: 63 (type).

Prionus (*Antennalia*) *transversus*; Casey, 1924: 223.

Prionus (*Antennalia*) *thoracicus* Casey, 1924: 223; Linsley, 1957: 9 (*syn*.); Lingafelter *et al.*, 2014: 333 (type).

Male (Figs. 99–100). Integument from reddish-brown to dark-brown, frequently with head, pronotum, basal antennomeres and base of head darker.

Head, excluding mandibles, slightly shorter than prothorax at central area, not elongate behind eyes. Longitudinal dorsal furrow distinct from clypeus to anterior edge of prothorax, usually less conspicuous after posterior ocular edge. Area between antennal tubercles and base of eyes finely, abundantly punctate; central area between upper eye lobes finely, from sparsely to very sparsely punctate; area close to dorsal region of upper eye lobes coarsely, abundantly punctate (punctures usually confluent); central dorsal area between upper eye lobes and anterior edge of prothorax from finely, sparsely punctate to smooth; dorsal surface mostly glabrous, except for short setae close to upper eye lobes; area behind upper eye lobes moderately finely, abundantly punctate, mainly toward lower eye lobes, with short, sparse setae (denser and longer close to eye); area behind lower eye lobes somewhat rugose, with short sparse setae toward prothorax, distinctly longer and abundant closer to eye. Antennal tubercles finely, sparsely punctate on base, smooth toward apex; glabrous. Postclypeus laterally coarsely, confluently punctate, gradually sparsely, finely punctate toward center, that could be smooth; with moderately long, abundant setae laterally (they could be short and distinctly sparse). Anteclypeus not distinctly separated from postclypeus, mainly centrally; smooth, glabrous. Labrum moderately finely punctate, with some smooth areas; with very long, moderately sparse setae (denser close to anterior edge centrally); brush with long setae on anterior margin. Eyes large; distance between upper eye lobes from 0.40 to 0.45 times length of scape; distance between lower eye lobes from 0.30 to 0.35 times length of scape. Submentum trapezoid, distinctly narrower toward gula, slightly depressed, with anterior margin narrow, distinctly elevated; surface rugose, with short, sparse setae, distinctly denser close to eyes. Apex of labial palpi attaining apex of maxillary palpomere IV. Mandibles about 0.5 times as long as head; latero-basal one-third depressed. Antennae 25- to 33-segmented; nearly attaining middle of elytra. Scape finely, sparsely punctate (slightly denser on basal one-third); with short, sparse setae or almost glabrous. Antennomere III (Fig. 38) from slightly shorter to as long as scape dorsally, distinctly enlarged toward apex (distal width equal to about 2.0 times basal width); imbrication very distinct, notably projected (Fig. 38–40); apex of imbrication strongly bifurcate; outer lobe of imbrication distinctly shorter than inner one; dorsal surface finely, sparsely punctate. Dorsal surface of remaining antennomeres (except last one) finely, sparsely punctate, gradually denser toward antennal apex. Dorsal surface of last antennomere finely rugose. Lobes of imbrications of antennomeres gradually with similar length toward antennal apex. Last antennomere complex.

Maximum prothoracic width about equal to 0.8 times elytral base; anterolateral angles rounded, very slightly projected forward; lateral tooth acute, distinctly projected, placed at anterior one-half; basal tooth acute, distinctly projected; basal margin sinuous; distal margin centrally straight, laterally projected forward. Pronotum finely, abundantly punctate centrally; slightly coarser laterally; between those two regions, area with fine, sparse punctures (it can encompass basal and distal one-quarter); glabrous or with very sparse, short setae laterally; center of disc from convex to somewhat flat. Prosternum moderately finely, abundantly punctate, somewhat rugose laterally; with long, abundant setae throughout. Prosternal process not sulcate; with long, sparse setae centrally,

FIGURES 99–102. *Prionus* (*Prionus*) *fissicornis*: **99**, male, dorsal habitus; **100**, male, ventral habitus; **101**, female, dorsal habitus; **102**, female, ventral habitus.

almost glabrous on center of distal one-half; with long, abundant setae laterally, mainly toward apex. Elytra moderately coarsely, abundantly punctate, somewhat rugose toward apex; each elytron with three carinae, innermost two most distinct; sutural spine short, but distinct. Metasternum densely microsculptured; with long, dense setae. Metepisterna with sculpture and setae as that of metasternum.

Ventrite I with long, sparse setae; ventrites II–IV with setae shorter, sparser than on I; ventrites I–IV finely, sparsely punctate; ventrite V finely, sparsely punctate on basal one-half, denser on distal one-half; ventrite V with short, sparse setae on basal one-half, denser on distal one-half. Tarsomeres I–III moderately slender, metatarsomeres more so; protarsomeres I–II acute at apex of lobes; meso- and metatarsomeres I–III spined at apex of lobes; spongy setal pads at protarsomere I with slightly distinct longitudinal sulcus at center; meso- and metatarsomeres with narrow, longitudinal, glabrous sulcus at center, distinctly more conspicuous at metatarsomeres.

Female (Figs. 101–102). Head, excluding mandibles, about 0.8 times as long as prothorax at middle. Sculpture on dorsal face of head and area behind eyes similar to that in male. Distance between upper eye lobes equal to about 0.7 times length of scape; distance between lower eye lobes equal to about 0.5 times length of scape. Submentum as in male. Antennae at least 20-segmented, barely reaching, middle of elytra; scape similar to that in male; antennomere III about as long as 0.7 times length of scape; antennomeres (Fig. 41) ventrally carinate, with apex distinctly emarginate (V-like). Prothorax similar to that in male. Metasternum densely microsculptured laterally, gradually finer, sparser toward center; with short, sparse setae laterally. Metepisterna microsculptured, glabrous throughout.

Dimensions in mm (male/female). Total length (including mandibles), 31.6–31.8/36.8–40.0; prothoracic length at center, 4.5–4.3/5.6–5.7; greatest prothoracic width, 9.2–9.3/11.2–11.5; humeral width, 11.5–12.0/12.8–13.7; elytral length, 23.2–23.5/24.2–26.5.

Geographical distribution. Canada [Ontario (Evans, 1906)], USA [Nebraska (LeConte, 1852a), Texas (LeConte, 1852a), New Mexico (LeConte, 1852a)], Colorado (Casey, 1924), Montana (Linsley, 1962), Minnesota (Linsley, 1962), North Dakota (Linsley, 1962), Wyoming (Linsley, 1962), South Dakota (Linsley, 1962), Kansas (Horn, 1872), Oklahoma (Alexander, 1958), Iowa (Putman, 1876), Missouri (Linsley, 1962), Arkansas (Chemsak, 1996), South Caroline (Heffern, 1998a), North Caroline (Brimley, 1938)].

LeConte (1852a) recorded: "I found this species abundant near the Platte River, of Nebraska Territory. Lieut. Haldeman collected it in Texas, and I have since received if from New Mexico." As LeConte (1852a) indicated the Platte River, it is possible to know that the specimen(s) was(were) collected in the area of current Nebraska. However, it is not possible to know if the specimen(s) received by him from New Mexico was(were) from within New Mexico either as it is defined today. According to NETSTATE.COM (2012): "In 1850, the Territory of New Mexico was much larger than it is today. The territory included present-day New Mexico, Arizona, parts of southern Colorado, southern Utah, and even a piece of southeast Nevada."

Types, type localities. Of *Prionus fissicornis*: holotype male from USAs ("near the Rocky mountains"), deposited at MCZ.

Of *Prionus* (*Antennalia*) *fissicornis transversus* (Fig. 182): holotype female from USA (Texas), deposited at USNM. Figured at Lingafelter *et al.* (2016).

Of *Prionus* (*Antennalia*) *thoracicus* (Fig. 181): holotype female from USA (Colorado, Akron), deposited at USNM. Figured at Lingafelter *et al.* (2016).

Material examined. USA, *New Mexico*: Union County, 2 females, Hwy. No. 120, elevation 1650 m., 6.6 miles N. of Yates, grassland, Barchet & Beierl, 11 July 1998 (ENPC); 6–8 miles SE Gladstone, 1 male, VII.6.1999, J. E. Wappes col. (MZSP); 2 females, VI.28–29.2000, J. E. Wappes col. (MZSP). *Oklahoma*: Enid, 1 male, VI.1974, Doug Whitman col. (ESSIG).

Remarks. Linsley (1957) synonymized *Prionus* (*Antennalia*) *thoracicus*, *Prionus* (*Antennalia*) *fissicornis parviceps*, and *Prionus* (*Antennalia*) *fissicornis transversus* with *Prionus* (*Antennalia*) *fissicornis*: "Casey had a male from Texas and a female from Colorado identified as *fissicornis*. His *parviceps* and *transversus* were based on females from Texas, and *thoracicus* was based on a female from Akron, Colorado."

Linsley (1962) and Chemsak (1996) recorded that the antennae in *Prionus* (*Antennalia*) are "25- to 30 segmented". However, as seen above, Linsley (1957) synonymized *Prionus* (*Antennalia*) *fissicornis* and *P.* (*A.*) *thoracicus* with the only species of *Prionus* (*Antennalia*): *P.* (*A.*) *fissicornis*. Nevertheless, according to Casey (1912, 1924) the holotype female of *P.* (*A.*) *thoracicus* has antennae "20-jointed", the holotype female of *P.* (*A.*) *f.*

parviceps "22-jointed", and the holotype female of *P.* (*A.*) *fissicornis transversus* "20-jointed". Thus, it is possible to conclude that the generic description by Linsley (1962) and Chemsak (1996) encompasses only males. Still, according to Casey (1924), the eyes of the holotype of *Prionus* (*Antennalia*) *thoracicus* "are separated by two-fifths more than their width". However, photographs of the holotype show that they are separated by almost twice the width of a lobe. Comparing the photographs of the three female holotypes described by Casey, currently synonyms of *P. fissicornis*, it is possible to see that there is great variability in the distance between upper eye lobes: *P.* (*A.*) *fissicornis transversus* has the shortest distance, and *P.* (*A.*) *thoracicus* the largest.

Tavakilian & Chevillotte (2015) recorded: "*Prionus* (*Antennalia*) *fissicornis* Haldeman, 1848". According to Fox in Skinner *et al.* (1913), the part of the magazine where *P. fissicornis* was described was received in the American Philosophical Society at an earlier date: "Vol. III, No. 6. Receipt acknowledged by the American Philosophical Society, March, 19, 1847." Also, according to the introduction to the list of Fox (1913): "While therefore, the dates of publication were frequently earlier than those given, they were certainly never later." In the same way, some authors, like Linsley (1957) recorded the year as 1847. However, Skinner *et al.* (1913), recorded: "On several new genera and species of insects. P '46, 124." This means that Haldeman's work was published in Proceedings of the Academy of Natural Sciences of Philadelphia, in 1846, starting on page 124. Also, the same authors recorded: "imbricornis (Cerambyx). J II, 108 (Prionus). P '46, 125. J II, 108". This means that *Prionus imbricornis* was mentioned in the Journal of the Academy of Natural Sciences of Philadelphia, second series, volume II, on page 108 (citation of LeConte) (presented to Academy meeting, according to the same authors, in February 3, 1852), and in Proceedings of the Academy of Natural Sciences of Philadelphia, in 1846, on page 125 (where it was described). Evidently, it is possible that the publication date is 1847 [between acceptance to the meeting (November 24, 1846) and the presentation to the Academy meeting (March 19, 1847], but as there is no evidence to support this, we are following Skinner *et al.* (1913).

Many authors, as for example, Lameere (1912, 1913, 1919), Linsley (1962), and Monné & Hovore (2005, 2006), recorded *Prionus fissicornis* as described in 1845. However, as the paper was accepted for publication in the "*Meeting for Business, November,* 24, 1846", it cannot have been published in 1845: "The committee on the following paper by Mr. Haldeman, reported in favor of publication".

Males of *P. fissicornis* differ from those of *P. imbricornis* by antennae with usually more than 25 (at most 20 in the latter), and by the antennomeres strongly emarginated (not so in *P. imbricornis*); females differ by the ventral surface of the projections of antennomeres emarginated (typically projected from VI to IX in *P. imbricornis*).

Prionus (Prionus) evoluticornis **Komiya & Nogueira, 2014**
(Fig. 94)

Prionus (*Neopolyarthron*) *evoluticornis* Komiya & Nogueira, 2014: 3; Monné, 2015: 178 (cat.).

Original description:

"Male. Integument brown, mandible, head, basal part of antenna, pronotum and scutellum dark brown, partly almost black; elytra light brown.

Head 0.63 times as long as wide; areas anterior to eyelobes glabrous and posterior to eyelobes sparsely setose; vartex [*sic*] deeply roughly punctuate and other parts deeply are rather finely punctuate; antennal tubercle large and roundly raised, finely sparsely punctuate and shinny on surface, two antennal tubercles separated by a narrow deep groove; distance between upper eyelobes equal to 0.7–0.8 times the width of one lobe. Jugular processes thick and short, very dull apically. Clypeus sparsely deeply punctuate, very sparsely setose. Clypeus small and moderately sloping down, not punctuate, furnished on the apex with long and thick pilosity. Eyes bulging, each upper eyelobe about a half as long as wide in dorsal view. Mandible about 0.5 times as long as head, strongly bent inward at about middle, acutely pointed and slightly hooked at apex, furnished with a triangular internal tooth at about basal third, finely punctuate on external side and puncture-less and shinny [*sic*] on internal side.

Antennal structure generally close to *P. batesi* LAMEEL [*sic*], 1920 in general but longer and wider with middle parts more clearly bi-flabellate. Antenna about three-fourth as long as body and the apices reach about apical two-fifths of elytra, 18 segmented. Scape enlarged toward apex, finely and sparsely punctuate; pedicel punctuate; 3rd segment about 1.7 times as long as and much wider and thicker than scape; 4th segment 1.1 times as

long as scape; 3rd–16th antennal segments each narrowest at base and widened apicad in V-form, having an insertion of next segment at about middle and each side parts (two tips of V) shortly obliquely extending apico-underside. These extending parts short and triangularly pointed at apex in 3rd–5th segments and more extending and apical part widened and flattened so as to form be[*sic*]-flabellate lobes in 6th–16th (see Fig. 2). 17th segment irregular knot and 18th segment deformed oval plate. 3rd–7th segments finely punctuate in basal parts of dorsal side and apical parts without punctures and mat. 8th–18th segments mat and striolate and without punctures.

Pronotum about a third times as long as wide, glabrous, sparsely punctuate and shiny; both anterior and posterior margins raised and thickly fringed with yellow seta; lateral margin with two teeth, an obtuse one at anterior corner and an acute long one at about middle; basal corner angled and slightly projected but not forming clear tooth. Scutellum tongue-shaped, glabrous and sparsely punctuate. Elytra glabrous, subrugose and shallowly, rather densely punctuate throughout, about 1.7 times as long as wide; furnished with two feeble costae on each elytron and small but distinct sutural tooth. Prosternum and metasternum covered with long dense pubescence. Ventrites without punctures and subglabrous but sparsely irregularly setose near each posterior margins. Femora and tarsi sparsely punctuate and sparsely setose.

Body length. 37mm–44mm.

Female. Unknown."

Geographical distribution. Mexico (Jalisco).

Type, type locality. Holotype male from Mexico (Jalisco), deposited at UNAM, and six paratypes males also from Jalisco (apparently also deposited at UNAM).

Remarks. According to Komiya & Nogueira (2014): "*Prionus* (*Neopolyarthron*) *evolticornis* [*sic*] sp. nov. is close to *Prionus* (*Neopolyarthron*) *batesi* LAMEERE, 1920. It is easily distinguished from the latter in having 18-segmented antennae versus 16-segmented in *P. batesi*. This new species also differs from the latter in having larger body, more separated upper eyelobes, longer, thicker and more widely be[*sic*]-flabellate antennae." As it is possible to see in the paratype male figured in the original description, the antennae have 17 segments, and not 18. The last antennomere, as in many species of *Prionus* is complex. The specimens of *Prionus aztecus* (= *P. batesi*) examined by us have antennae with, at most, 16 segments, with the last antennomere complexly formed. Comparing the body of the paratype male of *P. evoluticornis* (Fig. 94) with the syntype male of *P. batesi* (Fig. 107) it is possible to see that there is no difference between them. Comparing the distance between upper eye lobes in the paratype male figured and in the specimen of *P. batesi* [really *P. mexicanus*], they are very similar to each other. The difference in their antennae does exist, and will separate them from *P. mexicanus* but not *P. aztecus* (= *P. batesi*). The specimen figured as *P. batesi*, have antennae with 15 segments, not 16. The antennae in *P. aztecus* are exactly as in *P. evoluticornis*, except possibly for the number of antennal segments. It is possible that *P. evoluticornis* are simply specimens of *P. aztecus* with 17-segmented antennae. However, as we did not examine specimens of *P. aztecus* with this number of antennomeres nor specimens from Jalisco, this species is provisionally kept as distinct from *P. aztecus*.

***Prionus* (*Prionus*) *aztecus* Casey, 1912**

(Figs. 29–32, 103–110)

Prionus (*Riponus*) *aztecus* Casey, 1912: 246; Lingafelter *et al.*, 2014: 23 (type).

Prionus aztecus: Lameere, 1919: 139; 1920: 144; Blackwelder, 1946: 556.

Prionus (*Neopolyarthron*) *aztecus*; Terrón, 1992: 289, 292, 294, 302 (distr.); Chemsak *et al.*, 1992: 21 (checklist); Monné & Giesbert, 1994: 16 (checklist); Monné, 1995: 54 (cat.); Noguera & Chemsak, 1996: 396 (distr.); Monné & Hovore, 2005: 21 (checklist); 2006: 20 (checklist); Monné, 2006: 87 (cat.); Özdikmen & Turgut, 2009: 410; Barbour *et al.*, 2011: 590, 591; Monné, 2015: 177 (cat.).

Prionus mexicanus; Lameere, 1912a: 245.

Prionus aztecus; Lameere, 1915: 60.

Prionus batesi Lameere, 1920: 144; Blackwelder, 1946: 556 (checklist); Damoiseau & Cools, 1987: 30 (types). ***Syn. nov.***

Prionus (*Neopolyarthron*) *batesi*; Chemsak *et al.*, 1992: 21 (checklist); Monné & Giesbert, 1994: 16 (checklist); Monné, 1995: 54 (cat.); Noguera & Chemsak, 1996: 396 (distr.); Monné & Hovore, 2005: 20 (checklist); 2006: 20 (checklist); Monné, 2006: 87 (cat.); Özdikmen & Turgut, 2009: 410; Bezark & Monné, 2013: 27 (checklist); Monné, 2015: 177 (cat.).

Integument reddish-brown, sometimes brown; basal one-third of elytra brown, rarely entirely dark-brown; head

dark-brown; antennae dark-brown, sometimes brown or reddish-brown toward apex; pronotum from reddish-brown to dark-brown; legs reddish-brown with dark-brown areas.

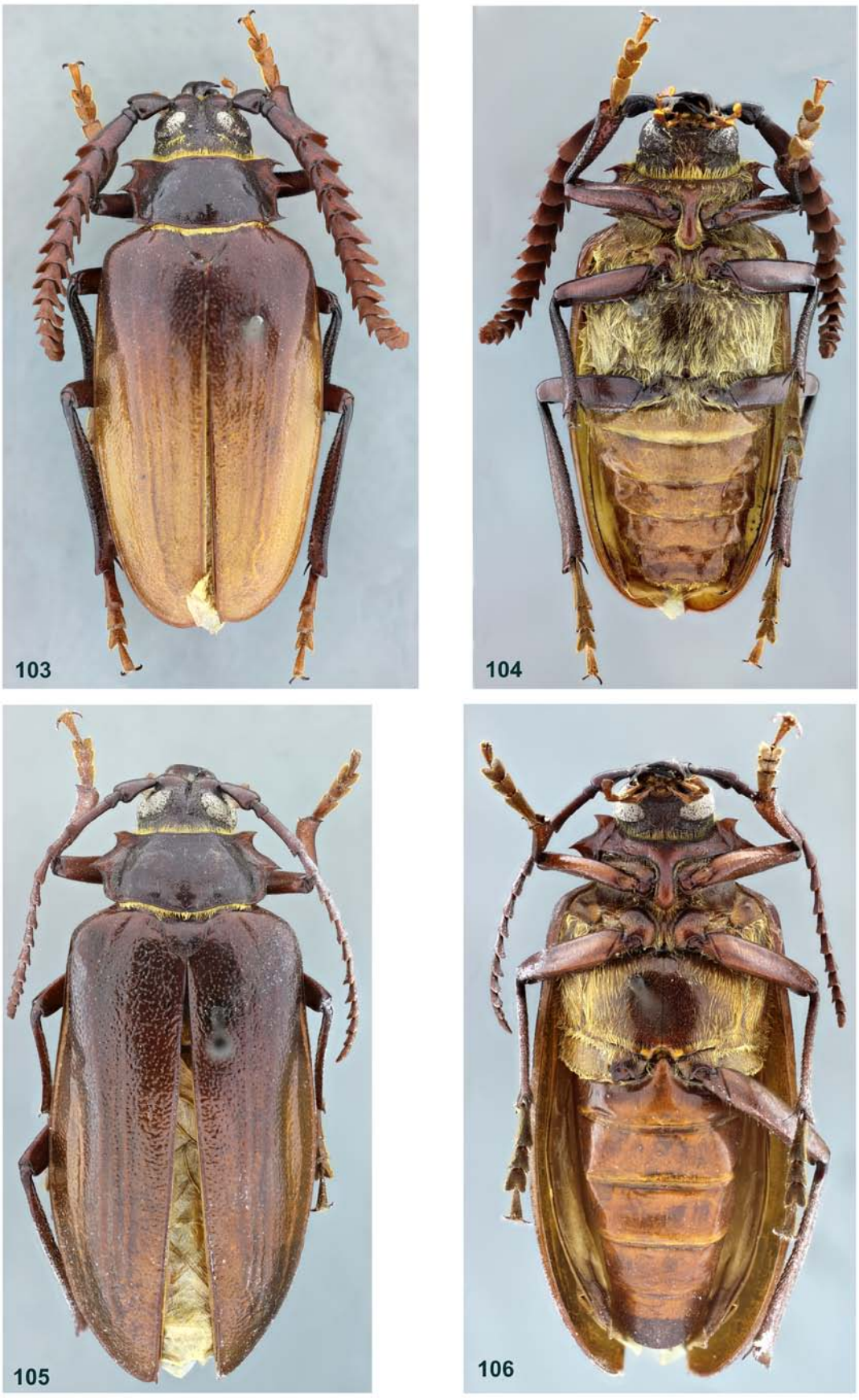
Male (Figs. 103–104). Head, excluding mandibles, from 0.95 to 1.15 times as long at central area as prothorax, elongate behind eyes (distance from posterior ocular edge to the prothorax from 0.7 to 1.13 times longest length of upper eye lobe). Longitudinal dorsal furrow from clypeus to anterior edge of prothorax, but usually more distinct from clypeus to posterior ocular edge (sometimes not reaching prothorax). Frons short, usually depressed, centrally smooth. Area between antennal tubercles deeply sulcate, coarsely, confluently punctate (sometimes smooth around longitudinal furrow, especially anteriorly); with short or moderately long, sparse setae. Area between upper eye lobes coarsely, confluently punctate, more so toward eyes; with short, sparse setae (sometimes moderately long). Area behind antennal tubercles with moderately long, sparse setae. Dorsal area between eyes and prothorax coarsely, abundantly punctate (usually punctures distinctly smaller in area between upper eye lobes), slightly coarser and denser laterally; with short, sparse setae. Area behind upper eye lobes finely, densely punctate, usually somewhat rugose; with long, moderately sparse setae toward prothorax, forming brush close to eyes. Antennal tubercles coarsely, moderately sparsely punctate on inner base, finely, densely punctate on frontal area close to scape, remaining surface gradually smooth toward apex; with short, sparse setae on basal one-half (usually more distinct frontally; sometimes absent on inner one-half). Postclypeus coarsely, confluently punctate laterally. Anteclypeus usually distinctly separated from clypeus. Labrum with long, abundant setae. Eyes large; distance between upper eye lobes from 0.4 to 0.7 times length of scape; distance between lower eye lobes from 0.55 to 1.00 times length of scape. Submentum trapezoid, distinctly narrow toward gula, somewhat depressed, with anterior margin narrow, distinctly elevated; surface rugose, with long, abundant setae, more so toward gula. Apex of labial palpi attaining from middle to almost apex of maxillary palpomere IV. Mandibles from 0.45 to 0.65 times as long as head. Antennae 15- to 16-segmented; surpassing middle of elytra. Scape almost reaching or slightly surpassing posterior ocular edge; finely, moderately abundantly punctate dorsally, especially on basal one-third; punctures denser laterally than dorsally. Antennomere III dorsally (Fig. 32) from 1.00 to 1.25 times longer than scape, distinctly enlarged toward apex (widest width from 2.0 to 2.4 times basal width); imbrication very distinct (Fig. 29, 30, 32); apex forming two distinct lobes: outermost wide, slightly emarginated at level of longitudinal carina (sometimes distinctly emarginated), with outermost portion distinctly smaller; inner lobe slender, separated from the former by deep emargination; dorsal surface finely, sparsely punctate. Dorsal surface of antennomeres IV–VI (sometimes only IV) finely, sparsely punctate, but denser than on III; dorsal surface of remaining antennomeres finely, densely punctate. Imbrication of antennomeres IV–XIV as on III. Last antennomere complex.

Maximum prothoracic width from 0.80 to 0.85 times elytral base; anterolateral angles spined, with anterior edge straight or slightly rounded and projected forward; laterally with long spine about middle; posterolateral angle spined or acute and projected. Pronotum finely, abundantly punctate centrally (sometimes with smooth area at base); center of disc from convex to somewhat flat; slightly more coarsely punctate laterally than centrally; with moderately long, sparse setae, more conspicuous near anterior and posterior angles. Prosternal process not or very slightly longitudinally sulcate. Elytra moderately coarsely, abundantly punctate, sometimes moderately rugose; each elytron with three carinae, innermost two more distinct; sutural spine usually short, distinct. Metasternum and metepisterna densely microsculptured; with long, dense setae.

Ventrite I finely, sparsely punctate on basal one-half to one-third, with long, moderately abundant setae (sometimes almost absent); ventrites II–IV finely, moderately sparsely punctate on basal three-fourths, centrally glabrous (sometimes with setae on base of IV), with short, sparse setae laterally; ventrite V with short, sparse setae. Pro- and mesotarsomeres I–III wide; apex of pro- and mesotarsomeres I–II acute (sometimes slightly spined); metatarsomeres distinctly slender, especially I, with apex of I–III projected (usually with short spine at III).

Female (Figs. 105–106). Head, excluding mandibles, from 0.85 to 0.95 times length of prothorax at middle. Sculpture of dorsal surface of head and area behind eyes similar to male. Distance between upper eye lobes from 0.6 to 0.8 times length of scape; distance between lower eye lobes from 0.80 to 1.05 times length of scape. Submentum as in male. Antennae with 14 segments, not reaching middle of elytra; scape slender, longer than in male; antennomere III from 1.00 to 1.25 times length of scape; antennomeres (Fig. 31) ventrally carinate, with apex projected at level of carina, widely emarginated between projection and inner side. Prothorax as in male. Metasternum and metepisterna as in male, but setae usually shorter.

Dimensions in mm (male/female). Total length (including mandibles), 31.0–44.3/32.2–42.3; prothoracic length at center, 3.9–5.6/4.5–5.4; widest prothoracic width, 10.0–13.6/9.6–12.8; humeral width, 11.5–16.6/11.8–15.8; elytral length, 22.3–32.8/24.1–33.2.



FIGURES 103–106. *Prionus* (*Prionus*) *aztecus*: **103**, male, dorsal habitus; **104**, male, ventral habitus; **105**, female, dorsal habitus; **106**, female, ventral habitus.

Geographical distribution. Mexico [Durango (Casey, 1912), Zacatecas (**new state record**)].

Monné & Giesbert (1994) recorded the geographical distribution as: "n Mexico (CHA)". Monné (1995, 2006) wrongly interpreted the type locality of *P. aztecus* as "Chihuahua: Colonia Garcia." Thus, the record of this species to Chihuahua was based on a mistake, started in Monné & Giesbert (1994).

Types, type localities. Of *Prionus aztecus*: Described based on one male and one female from Mexico (Durango, Ciudad de Durango), deposited at USNM. Lingafelter *et al.* (2014) designated lectotype. Lectotype figured at Lingafelter *et al.* (2016).

Of *Prionus batesi* (Figs. 107–110): a couple of syntypes from Mexico (Durango, "Sierra de Durango au Mexique"), deposited at IRSN.

Material examined. MEXICO, *Zacatecas*: Hacienda Laguna Valderrama (25 miles W Fresnillo, 7,900 feet), 4 males, 1 female, 21–25.VI.1954, R. H. Brewer col. (ESSIG); 8 mi. S Chalchihuites (8300 ft.), 1 male, VII.2–3.1954, R. H. Brewer col. (ESSIG). *Durango*: Km 1019, Hwy 40, 30 miles W Durango, 1 male, VI.23.1967, W. H. Clark col. (ESSIG); 25 miles W Durango (8100'), 2 males, VII.20.1964, J. A. Chemsak & J. Powell col. (ESSIG); 30 miles W Durango (8500'), 2 males, VII.31.1964, J. A. Chemsak col. (ESSIG); El Salto, 1 female, VI.9.1967, Molden col. (ESSIG); 10 miles W El Salto (9000'), 1 female, VI.26.1964, J. F. McAlpine col. (ESSIG); 1 female, VI.19.1964, H. F. Howden col. (ESSIG); 33 miles W El Salto, 1 female, VI.7.1962, E. Sleeper, R. Anderson, A. Hardy & R. Somerby col. (ESSIG); 4 miles E Otinapa, 1 male, VII.11.1952, J. D. Lattin col. (ESSIG); Sierra Madre, 1 male [no date or collector indicated] (ESSIG).

Remarks. On Lameere's (1912, 1915) error, see remarks under *Prionus mexicanus*.

The description of *P. mexicanus* in Lameere (1912a) that according to Lameere (1920) corresponds to *P. batesi* is [translation]: "Mexico (Ciudad, at "Sierra de Durango", 8,100 feet height); Museum of Hamburg. Differs from *P. Flohri* by its antennae more robust and longer, with 16 segments (H. W. Bates considered 14, having omitted the two basal ones), the 16th appendiculate in both sexes; the inner apex of antennal projections is more emarginated than in *P. Flohri* and the outer process still more developed; the general color is lighter and the head narrower than in *P. Flohri*; the elytra are slightly rough, simply covered by coarse, sparse punctures; the lobes of third metatarsomere are slightly angular; the metasternum is less pubescent, mainly in females; the intercoxal abdominal projection of female is wider than in *P. californicus* and *Flohri*." Although Lameere (1920) mentioned that the specimens described in Lameere (1912a) and that figured in Heyne & Taschenberg (1908) as *P. mexicanus* are *P. batesi*, those specimens are not syntypes of the latter. Lameere (1920) did not make clear the condition of them.

According to Lameere (1920) [translation]: "one couple from "La Sierra de Durango" in Mexico. This is the species to which I gave in my "Revision des Prionides", following HEYNE & TASCHENBERG who figured it, the wrong denomination of *P. mexicanus*. It is really different from *P. aztecus* CASEY, with the inner lobe of antennal segments of male emarginated at apex, antennae with 16 segments, the 16th of male is as the 15th of *P. curticollis*; in female, the antennae are very short, only reaching the basal third of elytra, the third segment is dentate at outer apex, but rounded at inner apex, the 16th as long as 15th; the eyes are more widely separated dorsally than in *P. aztecus*, and the other features are similar." According to Lameere (1920), in *P. aztecus* [translation]: "eyes dorsally separated by space equal to width of one lobe"; "inner lobe of third metatarsomere dentate"; "inner lobe of antennomeres not emarginated"; "antennae with 15 segments, the 15th more or less as in *P. curticollis*, the base as long as 14th segment, and the distal projection truncate at apex."

The differences pointed out by Lameere (1920), between *P. aztecus* and *P. batesi*, are just variations of the former. Also, the lectotype male of *P. aztecus* shows some of the features recorded to *P. batesi* by Lameere (1920): the inner lobe of antennomere projections is distinctly emarginated, and the eyes are more widely separate dorsally than the width of one lobe. The number of antennal segments is variable in males of *P. aztecus* (from 14 to 16), the shape of last antennomeres is highly variable, the emargination of antennomeres is also variable (from slight to distinct), the distance between upper eye lobes is variable (from smaller than width of one lobe to slightly larger), and the apex of third metatarsomere, typically is dentate on both sides.

***Prionus* (*Prionus*) *mexicanus* Bates, 1884**

(Figs. 33–37, 114–117)

Prionus mexicanus Bates, 1884: 227; Heyne & Taschenberg, 1908: 237, p. 33, fig. 19; Lameere, 1913: 78 (cat.); 1919: 139;

1920: 143; Blackwelder, 1946: 556; Chemsak *et al.*, 1992: 288 (checklist); Terrón, 1992: 21 (distr.); Noguera & Chemsak, 1996: 396 (distr.).

Prionus (*Prionus*) *mexicanus*; Monné & Giesbert, 1994: 15 (checklist); Monné, 1995: 53 (cat.); Monné & Hovore, 2005: 19 (checklist); Monné, 2006: 87 (cat.); Monné & Hovore, 2006: 19 (checklist); Özdikmen & Turgut, 2009: 411; Bezark & Monné, 2013: 28 (checklist); Monné, 2015: 177 (cat.).

Prionus Flohri; Lameere, 1912a: 244 (error of identification).

Prionus (*Riponus*) *townsendi* Casey, 1912: 245; Lingafelter *et al.*, 2014: 334 (type). ***Syn. nov.***

Prionus Townsendi; Lameere, 1919: 139.

Prionus townsendi; Blackwelder, 1946: 556.

Prionus (*Neopolyarthron*) *townsendi*; Chemsak *et al.*, 1992: 21 (checklist); Monné & Giesbert, 1994: 16 (checklist); Monné, 1995: 55 (cat.); Noguera & Chemsak, 1996: 396 (distr.); Monné & Hovore, 2005: 20 (checklist); Monné, 2006: 88 (cat.); Monné & Hovore, 2006: 20 (checklist); Özdikmen & Turgut, 2009: 410; Bezark & Monné, 2013: 27 (checklist); Monné, 2015: 178 (cat.).

Prionus (*Riponus*) *curticollis* Casey, 1912: 246; Lingafelter *et al.*, 2014: 49 (type). ***Syn. nov.***

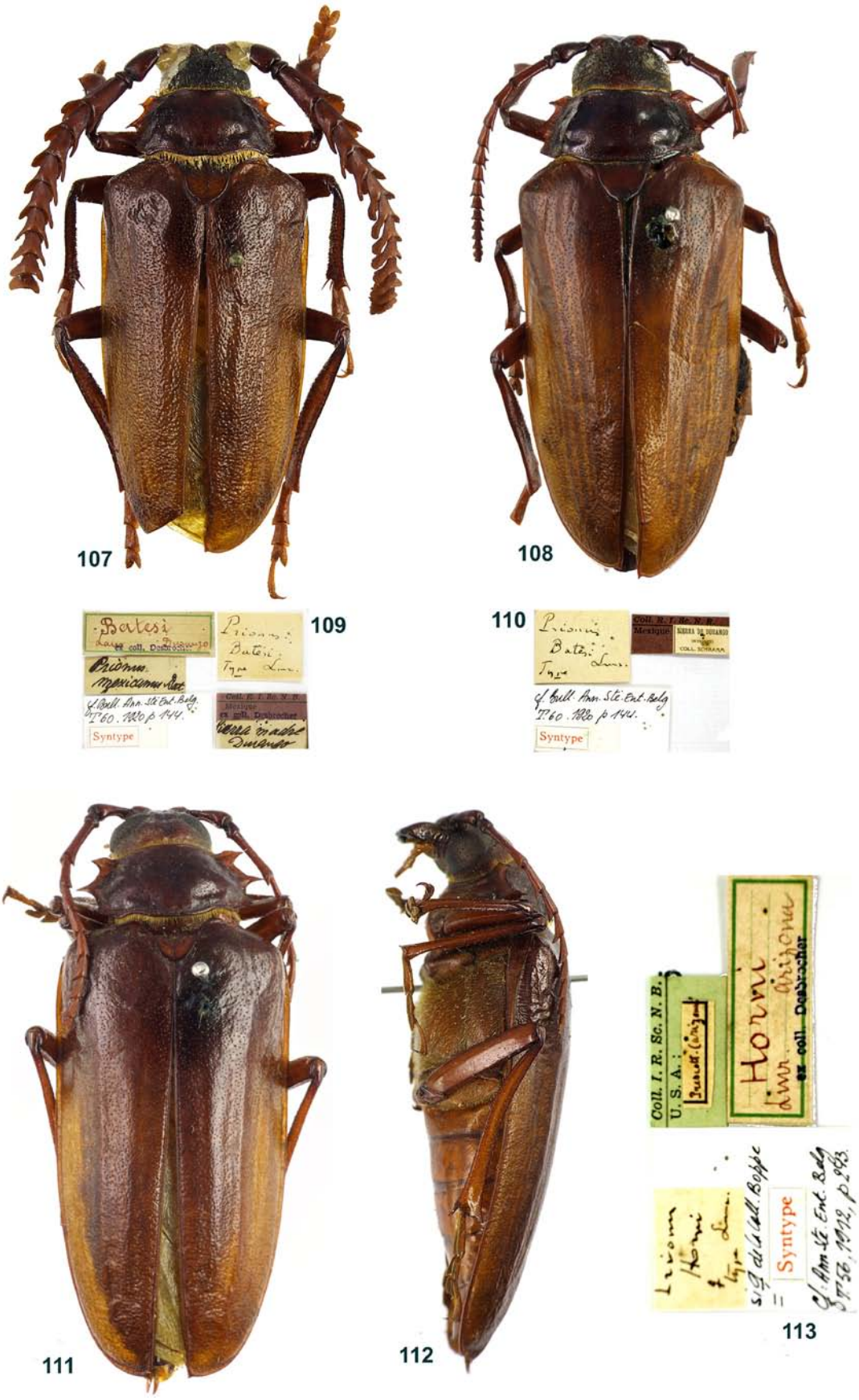
Prionus curticollis; Lameere, 1920: 143; Blackwelder, 1946: 556; Barbour *et al.*, 2011: 590.

Prionus (*Neopolyarthron*) *curticollis*; Chemsak *et al.*, 1992: 21 (checklist); Monné & Giesbert, 1994: 15 (checklist); Monné, 1995: 54 (cat.); Noguera & Chemsak, 1996: 396 (distr.); Monné & Hovore, 2005: 20 (checklist); Monné, 2006: 87 (cat.); Monné & Hovore, 2006: 20 (checklist); Özdikmen & Turgut, 2009: 410; Bezark & Monné, 2013: 27 (checklist); Monné, 2015: 177 (cat.).

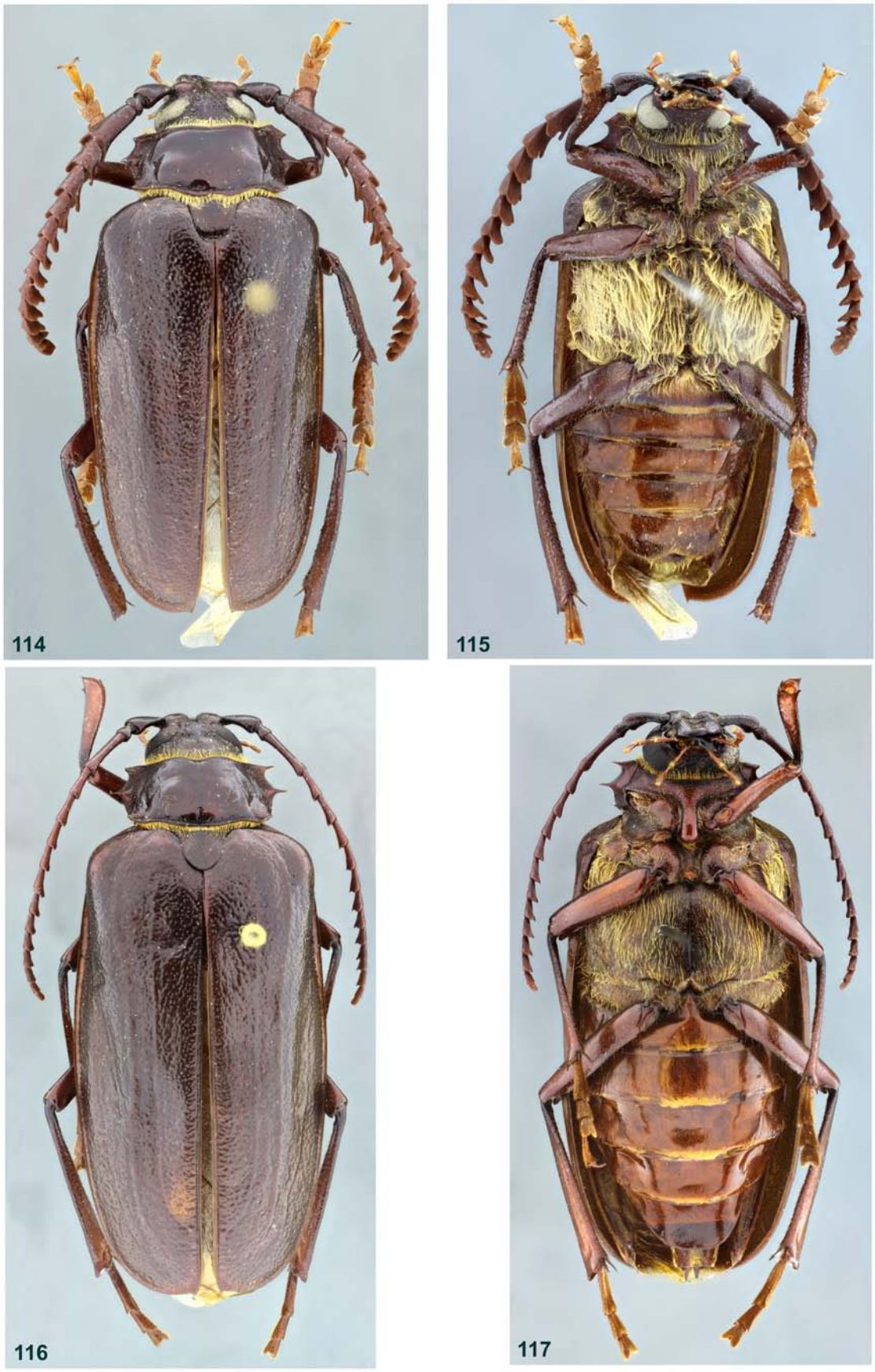
Prionus (Neopolyarthron) batesi; Komiya & Nogueira, 2014: Fig. 2.

Integument dark-brown dorsally, reddish ventrally, usually with some parts darker, but sometimes entirely brown; antennae usually dark-brown on basal antennomeres, gradually brown or reddish toward apex; legs brown with darker parts, or entirely dark-brown.

Male (Figs. 114–115). Head, excluding mandibles, from 0.85 to 1.15 times as long as prothorax at central area, elongate behind eyes (distance from posterior ocular edge to the prothorax from equal to shorter than greatest length of upper eye lobe). Longitudinal dorsal furrow from clypeus to anterior edge of prothorax (sometimes ending slightly before prothorax). Frons short, depressed, usually entirely smooth, but sometimes laterally punctate. Area between antennal tubercles deeply sulcate, from densely to moderately sparsely punctate (punctures from coarse to somewhat fine); with moderately short, sparse setae. Area between upper eye lobes coarsely, confluently punctate, more so toward eyes; with short, sparse setae. Dorsal area between eyes and prothorax smooth centrally (sometimes moderately finely punctate), coarsely, abundantly, confluently punctate laterally; with short, sparse setae (usually glabrous centrally or almost so). Area behind upper eye lobes from moderately finely to coarsely, abundantly punctate; with long, moderately abundant setae. Area behind lower eye lobes moderately finely, abundantly punctate (sometimes somewhat rugose); with long, moderately sparse setae toward prothorax, forming brush close to eyes. Antennal tubercles coarsely, moderately sparsely punctate on inner basal one-half, finely, densely punctate on frontal area close to scape, with remaining surface smooth or almost so. Postclypeus coarsely, confluently punctate laterally, usually with finer, sparser punctures centrally; with long, sparse setae. Anteclypeus not or distinctly separated from clypeus. Labrum with long, abundant setae. Eyes large; distance between upper eye lobes from 0.7 to 0.9 times length of scape; distance between lower eye lobes from 0.95 to 1.15 times length of scape. Submentum trapezoid, distinctly narrower toward gula, somewhat depressed, with anterior margin narrow, distinctly elevated; surface rugose, with moderately long, abundant setae. Apex of labial palpi nearly attaining middle of maxillary palpomere IV. Mandibles from 0.5 to 0.6 times as long as head; latero-basal one-third depressed. Antennae 14- to 15-segmented; slightly surpassing middle of elytra. Scape nearly reaching posterior ocular edge; moderately coarsely, sparsely punctate dorsally; usually coarsely, abundantly punctate laterally, more so on basal one-third, but sometimes distinctly sparsely punctate, toward apex; with short, sparse setae laterally. Antennomere III (Fig. 33) from 1.1 to 1.3 times longer than scape dorsally, distinctly enlarged toward apex (widest width from 1.8 to 2.3 times basal width); imbrication very distinct (Fig. 34, 35); apex of imbrication forming two distinct lobes: outermost wide, emarginated at level of longitudinal carina, with outermost portion distinctly smaller; inner lobe slender, separated from the former by very deep emargination; dorsal surface moderately finely, sparsely punctate. Dorsal surface of antennomeres IV–VI/VIII as on III, usually slightly denser on V–VII/VIII; dorsal surface of remaining antennomeres finely, densely punctate. Imbrication of antennomeres IV–XIII/XIV as in III, but emargination between lobes gradually less deep toward distal antennomeres. Last antennomere variable: from simple to distinctly complex.



FIGURES 107–113. **107–110**, *Prionus* (*Prionus*) *batesi*: **107**, syntype male, dorsal habitus; **108**, syntype female, dorsal habitus; **109**, labels of the syntype male; **110**, labels of the syntype female. **111–113**, *Prionus* (*Prionus*) *horni*, syntype female from IRSN: **111**, dorsal habitus; **112**, lateral habitus; **113**, labels. Photographs by Noël Mal.



FIGURES 114–117. *Prionus* (*Prionus*) *mexicanus*: **114**, male, dorsal habitus; **115**, male, ventral habitus; **116**, female, dorsal habitus; **117**, female, ventral habitus.

Maximum prothoracic width from 0.75 to 0.85 times elytral base; anterolateral angles spined (spine from moderately short to distinctly long), sometimes with anterior edge rounded, projected forward; with long spine laterally about middle; posterolateral angle from rounded to acute. Pronotum finely, from sparsely to densely punctate centrally; center of disc from convex to somewhat flat; coarser punctate laterally; center with short, sparse setae (sometimes absent); with sparse, moderately long setae laterally. Prosternum moderately finely, densely punctate, slightly rugose laterally; with long, abundant setae. Prosternal process not sulcate; with short, sparse setae dorsally (sometimes almost absent). Elytra moderately coarsely, abundantly punctate, sometimes moderately rugose; each elytron with three carinae, innermost two more distinct; sutural spine usually short, but distinct. Metasternum and metepisterna densely microsculptured; with long, dense setae.

Ventrite I finely, sparsely punctate on basal three-fourths, with long, moderately abundant setae (sometimes present only centrally); ventrites II–IV finely, sparsely punctate on basal three-fourths, centrally glabrous (sometimes with long, sparse setae on basal one-fourth), with short, sparse setae laterally (sometimes absent); ventrite V with short, sparse setae. Pro- and mesotarsomeres I–III wide; apex of pro- and mesotarsomeres I–II acute (sometimes slightly spined, especially at I); metatarsomeres distinctly slender, more so in I, with apex of I–III projected (sometimes spined).

Female (Figs. 116–117). Head, excluding mandibles, from 0.8 to 0.9 times length of prothorax at middle. Sculpture on dorsal surface of head and area behind eyes similar to that in male. Distance between upper eye lobes from 0.65 to 0.85 times length of scape; distance between lower eye lobes from 0.8 to 1.0 times length of scape. Submentum as in male. Antennae with 14–15 segments, reaching or surpassing basal one-third of elytra; scape slender, longer than in male; antennomere III (Fig. 36) equal to about 1.3 times length of scape; antennomeres (Fig. 37) ventrally carinate, more distinctly from V, with apex projected at level of carina, widely emarginated between projection and inner side. Prothorax as in male. Metasternum and metepisterna as in male, but with pubescence less conspicuous around metasternal suture.

Dimensions in mm (male/female). Total length (including mandibles), 27.6–38.5/33.5–40.2; prothoracic length at center, 3.7–5.2/4.3–5.4; widest prothoracic width, 9.3–11.9/10.2–12.4; humeral width, 11.3–15.0/13.3–15.0; elytral length, 21.1–30.0/26.7–32.3.

Geographical distribution. Mexico [Durango (Bates, 1884), Chihuahua (Casey, 1912, as *P. townsendi* and *P. curticollis*), Michoacán de Ocampo (Lameere, 1912a) (as *P. flohri*), Zacatecas (**new state record**), Sinaloa (**new state record**)].

Barbour *et al.* (2011) recorded the state of Sonora: "The study site in Mexico was in Sonoran oak-pine woodland on Mesa de Campañero near Yécora, Sonora. *Prionus* species known from the area include *P. californicus*, *Prionus aztecus* Casey, *Prionus curticollis* Casey, and *Prionus flohri* Bates (Monné and Hovore 2005)." However this state record is in error. Monné & Hovore (2005) recorded *P. curticollis* in "nMexico (CHA)". Thus, only listing the state of Chihuahua.

Types, type localities. Of *Prionus mexicanus*: described based on male and female (number of specimens not indicated), from Mexico (Durango, "Ciudad in Durango, 8100 feet"), deposited at BMNH. Syntypes figured at Bezark (2016).

Of *Prionus* (*Riponus*) *townsendi*: holotype female, from Mexico (Chihuahua, Colonia Garcia), deposited at USNM. Figured at Lingafelter *et al.* (2016).

Of *Prionus* (*Riponus*) *curticollis*: holotype male, from (Chihuahua, Colonia Garcia), deposited at USNM. Figured at Lingafelter *et al.* (2016).

Material examined. MEXICO, *Sonora*: Las Antennas, 19.1 km NNW Nacozari de Garcia (Reserva Forestal Nacional; 30º54'17"N / 109º74'86"W; 2467 m), 1 male, VII.17.2013, Van Devender & Palting col. (ACMT); Cañon de Evans (30º97'N / 109º70'W; 1900 m; Sierra de los Ajos), 1 male, VII.12.2014, Van Devender *et al.* col. (ACMT). *Chihuahua*: Arroyo Mesterno (Sierra del Nido, 7600'), 1 male, VII.21.1959, W. C. Russell col. (ESSIG); Creel, 1 male, VII.22.1968, T. A. Sears, R. A. Gardner & C. S. Glaser col. (ESSIG); Yaguirachic (8500', 130 mi. W Chihuahua), 1 male, VIII.8.1937, W. C. Russell col. (ESSIG). *Sinaloa*: 13 mi. E Concordia (800'), 1 male, VIII.9.1964, L. A. Kelton col. (ESSIG). *Durango*: 10 miles W El Salto (8800'), 1 female, VII.5.1964, H. F. Howden col. (MZSP); 1 female, VII.18.1964, J. Powell col. (ESSIG); 1 male, VII.21.1964, J. A. Chemsak & J. Powell col. (ESSIG); 1 male, VIII.2.1964, J. Powell col. (ESSIG); (9000'), 1 male, VI.16.1964, J. E. H. Martin col. (MZSP); 33 miles W El Salto, 1 male, VI.7.1962, E. Sleeper, R. A. Anderson, A. Hardy & R. Somerby col. (ESSIG); Km 1019, Hwy 40, 30 mi. W Durango, 1 female, VI.23.1967, W. H. Clark col. (ESSIG).

Remarks. Bates (1884) described *Prionus mexicanus* and commented: "Resembles *P. flohri*; but certainly distinct, not only in the number of antennal joints in both sexes and the shorter and broader joints of the male, but in the form of the thorax in both sexes. In *P. flohri* the front edge is nearly straight, or describes a single gentle curve from spine to spine; whilst in *P. mexicanus* (in both sexes) it is trisinuate, the middle sinuation remarkably deep. The hind margin shows also a striking difference, being strongly bisinuated in *P. mexicanus*, so that the middle part forms a broad lobe; whilst in *P. flohri* it is nearly straight, but abruptly sinuate from the angle to the long and sharp basal spine."

Comparing the types of *P. mexicanus* with *P. flohri*, it is possible to see that the antennae of the former are not broader than in the latter: they are very similar in width. However, the antennomeres in males (except III) are shorter than in males of *P. flohri*. Although this feature is apparently unreliable. Nearly all specimens of *P. mexicanus* examined have antennomeres proportionally shorter (primarily IV–VI), although one specimen with 14-segmented antennae, has the antennomeres as long as in the syntypes males of *P. flohri*. Regarding the front edge of prothorax, all specimens of *P. mexicanus* examined have it from distinctly to slightly trisinuate. Thus, this character also seems unreliable. The hind margin of prothorax in all males of *P. mexicanus* examined is as described by Bates (1884). Thus, the only reliable feature separating *P. mexicanus* and *P. flohri* is the number of antennal segments: 14−15 in the former; 13 in the latter.

Casey (1912) described two new species from Mexico, *P. curticollis* and *P. townsendi*, collected at the same place, but did not compare them to other Mexican species: *P. mexicanus* or *P. flohri*.

Lameere (1912a) wrote on *P. flohri* [translation]: "Length from 32 to 38 millimeters, dark-brown; slightly narrow than *P. californicus*, from which it distinctly differs by its antennae with 14 or 15 segments in both sexes (H. W. Bates recorded 13 segments, but he obviously omitted the two basal); the last segment is appendiculate in male, very short in female; the segments are as in *californicu s* [*sic*], but the outer process of apex of the segments is longer and narrower, as in *P. Horni*; the projections of inner apex are slightly cracked at level of carina; the antennae are proportionally shorter than in *P. californicus* and *P. Horni*; the head is narrower; the elytra have coarse, sparse punctures slightly distinct toward in a weak roughness; the lobes of metatarsomere III are distinctly dentate; the intercoxal projection of abdomen of female is narrow as in *P. californicus*."

Later, Lameere (1915) wrote on *P. flohri sensu* Lameere (1912a) [translation]: "In my *Revision des Prionides*, I described *Prionus Flohri* from the museum of Brussels and San Petersburg that are not of Bate's species, but that that M. Casey described the female under the name of *Prionus Townsendi* and, I believe, the male under the name of *Prionus curticollis*." Lameere (1919) very clearly made this synonym. Incomprehensibly, Lameere (1920) mentioned *P. curticollis* as a valid species, and recorded on the specimen examined by him [translation]: "This insect is neighbor of the *Prionus* that I described in my *Revision des Prionides* [Lameere (1912a)] under the name of *P. Flohri*, but that is not the true *P. Flohri* H. W. BATES that I described in the *Bulletin du Muséum de Paris* (1915, p. 59). It [the specimen that Lameere identified as *P. curticollis*] is very probably *P. Townsendi* Casey described based in a single female from Colonia Garcia at Chihuahua." With this confused and ambiguous nomenclatural act, Lameere (1920) revalidated *P. curticollis* based, more on his doubts than on his convictions. Lameere (1920) also wrote on the specimen examined by him [translation]: "The male from the Collection of M. BOPPE agree very well to the description de M. CASEY, but I strongly suspect that it is a male of *P. mexicanus* H.-W. BATES. I observed, however, some differences with the female reported above [*P. mexicanus*]: the eyes are slightly more convex, the prothorax is wider and shorter, less widely emarginated anteriorly, the elytra less rough, showing coarse, abundant punctures, more or less confluent, mainly posteriorly…" It is not clear if Lameere was suggesting synonym between *P. curticollis* and *P. mexicanus*, or if he was only saying that he had doubt on the identification.

Lameere (1915) also wrote on *P. mexicanus* [translation]: "The *Prionus mexicanus* H. W. Bates could, despite its antennae with 14 segments and a prothorax with anterior and posterior edges slightly different, to be a synonym of *P. Flohri*." This statement cannot be considered a formal synonym. Also, Lameere (1919) recorded *P. mexicanus* as distinct species from *P. flohri*. Lameere (1920) also recorded *P. mexicanus* as a valid species. Still according to Lameere (1915), the specimens mentioned by Lameere (1912a) as *P. mexicanus* belong to *P. aztecus*. Finally, Lameere (1920) described *P. batesi* and recorded that this new species corresponded to *P. mexicanus sensu* Lameere (1912a), and *P. aztecus sensu* Lameere (1915).

We agree with Lameere (1915): *P. curticollis* is equal to *P. townsendi*. The female of *P. townsendi* was collected in the same place of *P. curticollis*. So, although it has antennae with 15 segments (according to Casey, 1912), we believe it is a female of *P. curticollis*, and thus a female of *P. mexicanus*. The color and shape of

antennomeres in females of *P. aztecus* and *P. mexicanus*, apparently, are highly variable: from light to dark; with or without projection on apex. Also, the number of antennomeres is variable in the females examined: 14 or 15, independent of the body color, antennal color, shape of apex of antennomeres. In some cases, the same specimen has one antenna with the last antennomere distinctly free and the other with it whole or partially fused to the anterior, making it impossible to affirm if the antennae are 14- or 15-segmented. The holotype female of *P. townsendi* has the apex of basal antennomeres distinctly spined, while in the syntype female of *P. mexicanus* they are not. However, as pointed out above, we examined specimens with intermediate conditions. This suggests that both specimens are extreme examples of the same species. The lateral spines of prothorax also seem different in both specimens, but this feature is also variable in the specimens studied, with forms linking them.

The holotype of *P. townsendi* agrees very well with the holotype male of *P. curticollis* and, despite the number of antennal segments (15 in the former; 14 in the latter), we are convinced that they belong to the same species. Based on the variations in the males examined (pronotal shape: from narrow to moderately long; pronotal spines: from prominent to not so; elytral shape: from wide to long; elytral sculpture: from coarsely to moderately finely punctate; emargination of projections of antennomeres: from very to moderately deep; etc.) we also think that *P. curticollis* is a male of *P. mexicanus*. Despite the information in the original description on the number of antennomeres in *P. mexicanus* (14), we studied specimens with from 14 to 15 segments. As in females, the last antennomere may be free, whole or partially fused to the anterior one, or different in both antennae. Those variations are not related to geographic distribution either.

The variations in the antennae of females make it difficult (or even impossible) to separate females of *P. mexicanus* from those of *P. aztecus*, because both species occur in the same area, and because females with similar antennae (shape and number of antennal segments) could have different body color. However, females of *P. aztecus* have antennae slightly wider than in those of *P. mexicanus* (a feature which normally can only be seen with direct comparison between females).

Males of *P. mexicanus* differ from those of *P. aztecus*, by the elytral color (usually lighter in *P. aztecus*), and antennal shape (Fig. 33) (wider in *P. aztecus*—Fig. 32). In males of *P. mexicanus*, the imbrication is also deeper on inner side than in *P. aztecus*.

***Prionus* (*Prionus*) *laticollis* (Drury, 1773)**

(Figs. 46–48, 118–125)

Cerambyx laticollis Drury, 1773: 134.

Prionus laticollis; Harris, 1841: 79; 1842: 79; LeConte, 1852b: 177; Harris, 1852: 84; Emmons, 1854: 115; Fitch, 1859: 845 (biology); Bland, 1861 (distr.); Holmes, 1869a: 231 (biology); 1869b: 51 (biology); Packard, 1869: 682; 1870: 594 (biology); Riley, 1870: 87 (biology); Riley, 1873: 56 (biology); Crotch, 1873: 83 (checklist); Treat, 1874: 344 (biology); Saunders, 1875: 29 (biology); Popenoe, 1877: 32 (distr.); Crotch, 1880: 83 (checklist); Riley, 1880: 238 (host); Packard, 1881: 118 (biology); Lameere, 1884: cccxxii (distr.); Weed, 1884: 13 (biology); Leng, 1884: 57; Blanchard, 1887: 85; Packard, 1890: 52, 437 (biology); Bruner, 1891: 195 (biology); Webster, 1892: 198 (biology); Hopkins, 1893: 192 (biology); Bruner, 1894: 154 (biology); Hamilton, 1895: 337 (distr.); Beutenmüller, 1896: 74 (host); Ehrmann, 1897: 170 (distr.); Wickham, 1897: 83; Bruner, 1899: 162 (biology); Lugger, 1899: 193 (biology); Smith, 1900: 285; Hopkins, 1902: 60 (biology); Dury, 1902: 158 (distr.); Bubna, 1902: 195 (distr.); Ulke, 1903: 25 (distr.); Young, 1903: 158; Lockhead, 1903: 111 (biology); Hopkins, 1904: 37 (biology); Horsfall, 1904: 37 (biology); Pettit, 1904: 41 (biology); Laurent, 1905: 62; Fyles, 1905: 92 (biology); Felt, 1906: 486; Morris, 1908: 446 (distr.); Smith, 1910: 324; Blatchley, 1910: 1011; Lameere, 1912a: 236; Fisher & Kirk, 1912: 309 (distr.); Lameere, 1913: 76 (cat.); Craighead, 1915: 19 (larva); Johnson, 1915: 314 (distr.); Lockhead, 1919: 83, 85, 322; Nicolay, 1919: 63 (distr.); Lameere, 1919: 137; Leng, 1920: 266 (cat.); Britton, 1920: 266 (distr.); Kempers, 1923: 102 (morphology); Kirk & Knull, 1926: 21 (distr.); Leonard, 1928: 433 (distr.); Hatch, 1930: 26 (distr.); Beaulne, 1932: 197 (host); Britton, 1933: 376 (distr.); Goldman, 1933: 95 (morphology); Easterling, 1934: 140 (host); Herrick, 1935: 220 (biology); Doane *et al.*, 1936: 165; Saalas, 1936: 33 (morphology); Britton, 1936: 258 (distr.); 1938: 144 (distr.); Brimley, 1938: 210 (distr.); Becker, 1942: 608 (biology); Löding, 1945: 113 (distr.); Knull, 1946: 145 (distr.); Sherman, 1946: 126 (distr.); Craighead, 1950: 262 (biology); Jaques, 1951: 251; Beal *et al.*, 1952: 71; Shenefelt & Benjamin, 1955: 99 (biology); Nishio, 1956: 242; Linsley, 1957: 8 (syn.); Alexander, 1958: 49 (distr.); Gibson & Carrillo, 1959: 117 (distr.); Dillon & Dillon, 1961: 577; Farrar & Kerr, 1968: 563 (biology); Benham, 1969: 1331 (larva, nymph); 1970: 1413 (morphology); Payne *et al.*, 1970: 3 (biology); Benham, 1971: 89 (biology); Swan & Papp, 1972: 442; Baker, 1972: 200 (biology); Gosling, 1973: 67 (distr.); Kirk & Balsbaugh, 1975: 96 (distr.); Benham & Farrar, 1976: 569 (larva); Turnbow & Franklin, 1980: 338 (distr.); Campbell *et al.*, 1989: 55; Chemsak *et al.*, 1992: 21 (checklist); Yanega, 1996: 27; Vlasak & Vlasakova, 2002: 204 (distr.); Robimson, 2005: 85; McCorquodale *et al.*, 2007:

121, 127; Barbour *et. al.*, 2011: 590, 591; Agnello *et al.*, 2011: 17, 18.
Prionus (*Prionus*) *laticollis*; Casey, 1912: 234, 245; Linsley, 1962: 39; MacRae, 1993: 227 (distr.); Monné & Giesbert, 1994: 15 (checklist); Monné, 1995: 52 (cat.); Chemsak, 1996: 103; Schiefer, 1998: 115 (distr.); Peck & Thomas, 1998: 116 (distr.); Monné & Hovore, 2005: 20 (checklist); 2006: 19 (checklist); Özdikmen & Turgut, 2009: 411; Bezark & Monné, 2013: 28 (checklist).
Prionus (*Derobrachus*) *laticollis*; Drury & Westwood, 1837: 78.
Prionus (*Prionellus*) *laticollis*; Casey, 1924: 209; Gilmour, 1954: 45 (distr.).
Prionus brevicornis Fabricius, 1801: 260; Harris, 1838: 89; Sturm, 1826: 187; 1843: 239; Haldeman, 1847b: 31; LeConte, 1852a: 109; Chevrolat 1852: 650; Melsheimer, 1853: 100 (cat.); White, 1853: 16; Bethune, 1868: 23 (host); Packard, 1869: 495; Smith, 1873: 346; LeConte, 1878: 126; Packard, 1881: 127 (host); LeConte & Horn, 1883: 274; Clarkson, 1884: 95 (biology); Packard, 1890: 481 (host); Zimsen, 1964: 163 (types).
Prionus Brevicornis; Schönherr, 1817: 339 (syn.).
Prionus (*Prionellus*) *brevicornis*; Casey, 1924: 210.
Prionus (*Prionus*) *kempi* Casey, 1912: 233, 244.
Prionus (*Prionellus*) *kempi*; Casey, 1924: 211.
Prionus (*Prionus*) *laticollis oblongus* Casey, 1912: 234; Lingafelter *et al.*, 2014: 87 (type).
Prionus (*Prionellus*) *oblongus*; Casey, 1924: 210.
Prionus (*Prionus*) *parvus* Casey, 1912: 234; Lingafelter *et al.*, 2014: 296 (type).
Prionus (*Prionellus*) *parvus*; Casey, 1924: 211.
Prionus (*Prionellus*) *frosti* Casey, 1924: 210; Lingafelter *et al.*, 2014: 66 (type).
Prionus (*Prionellus*) *nigrescans* Casey, 1924: 210; Lingafelter *et al.*, 2014: 106 (type).
Prionus nigrescans; Leonard, 1928: 433.
Prionus (*Prionellus*) *densus* Casey, 1924: 211; Lingafelter *et al.*, 2014: 52 (type).
Orthosoma cylindricum; Holmes, 1868: 19 (error of identification).

Male (Figs. 118–119). Head, mandible, scape, pedicel, antennomere III, pronotum, femora and tibiae from dark-brown to black (often with both colors); elytra from light-brown to black (usually dark-brown or black); antennomeres IV–XI dark-brown (gradually lighter toward last antennomere); palpi from brown to dark-brown; pro- meso, and metasternum, metepisterna dark-brown with some areas darker; ventrites brown, distal edge from yellowish to blackish (commonly with different color, mainly on I and V); tarsi dark-brown, often with small areas darker.

Head, excluding mandibles, at central area longer than prothorax, moderately elongate behind eyes (distance from posterior ocular edge to prothorax from slightly shorter to slightly longer than greatest length of upper eye lobe). Longitudinal dorsal furrow distinct from clypeus to prothoracic edge; between middle of eyes (sometimes anterior edge of eyes) and clypeus, placed inside a deep sulcus (broader and deeper toward clypeus). Area on each side of longitudinal sulcus moderately finely punctate (often including inside of sulcus); area close to ocular carinae slightly depressed, coarsely, confluently punctate, with short setae; area around longitudinal furrow, between posterior ocular edge and prothorax, with sub-rhombus, impunctate region; area between and around the latter and prothoracic edge, coarsely (sometimes somewhat finely), moderately sparsely punctate, with short, sparse setae; area behind eyes coarsely, confluently punctate, becoming rugose and pubescent toward lower eye lobe. Antennal tubercles sparsely, moderately coarsely punctate on basal half, becoming impunctate toward apex. Postclypeus narrow, laterally flat, coarsely, confluently punctate, with short, sparse setae; centrally glabrous, impunctate or almost so; anterior edge distinctly concave; area behind central region with deep, narrow, transverse sulcus. Anteclypeus shining, glabrous, impunctate. Labrum triangularly excavated centrally; with long, dense setae. Eyes proportionally large; distance between upper eye lobes from 0.7 to 0.8 times length of scape; distance between lower eye lobes from 1.0 to 1.1 times length of scape. Submentum trapezoid, elevated from base toward mentum; surface from coarsely, abundantly punctate to rugose (sometimes slightly transversely vermiculate); with short, sparse setae centrally, gradually longer and more abundant laterally; anterior edge distinctly carinate. Apex of labial palpi nearly attaining basal one-third of maxillary palpomere IV (sometimes about middle). Latero-basal one-third of mandibles depressed. Antennae with 12 segments; attaining base of distal one-third of elytra. Scape slightly surpassing posterior ocular edge, moderately enlarged toward apex; finely (sometimes barely coarsely) sparsely punctate dorsally; on latero-outer face moderately coarsely punctate; on latero-inner face from smooth to very sparsely and finely punctate. Antennomere III (Fig. 46) dorsally from 1.2 to 1.6 times longer than scape, distinctly enlarged toward apex (distal width equal to about 1.8 times basal width); on dorsal view, imbrication distinct, but not very projected (Fig. 46); on ventral view, apex of imbrication slightly emarginated (Fig. 47); basal two-thirds moderately finely, sparsely punctate; distal one-third very densely, finely punctate (sometimes with

small areas with coarse punctures). Antennomere IV about as long as 0.7 times III; dorsally densely, finely punctate throughout (sometimes, sparsely punctate close to the apex); imbrication in dorsal view as in III; distinctly projected backward ventrally, not emarginated at apex. Antennomeres V–VI with sculpture and imbrication as in IV. Antennomeres VII–XI dorsally striolate (striae coarser from VIII); in dorsal view, imbrication more projected than in III; in ventral view as in IV. Antennomere XII about as long as XI; not appendiculate or partially divided.

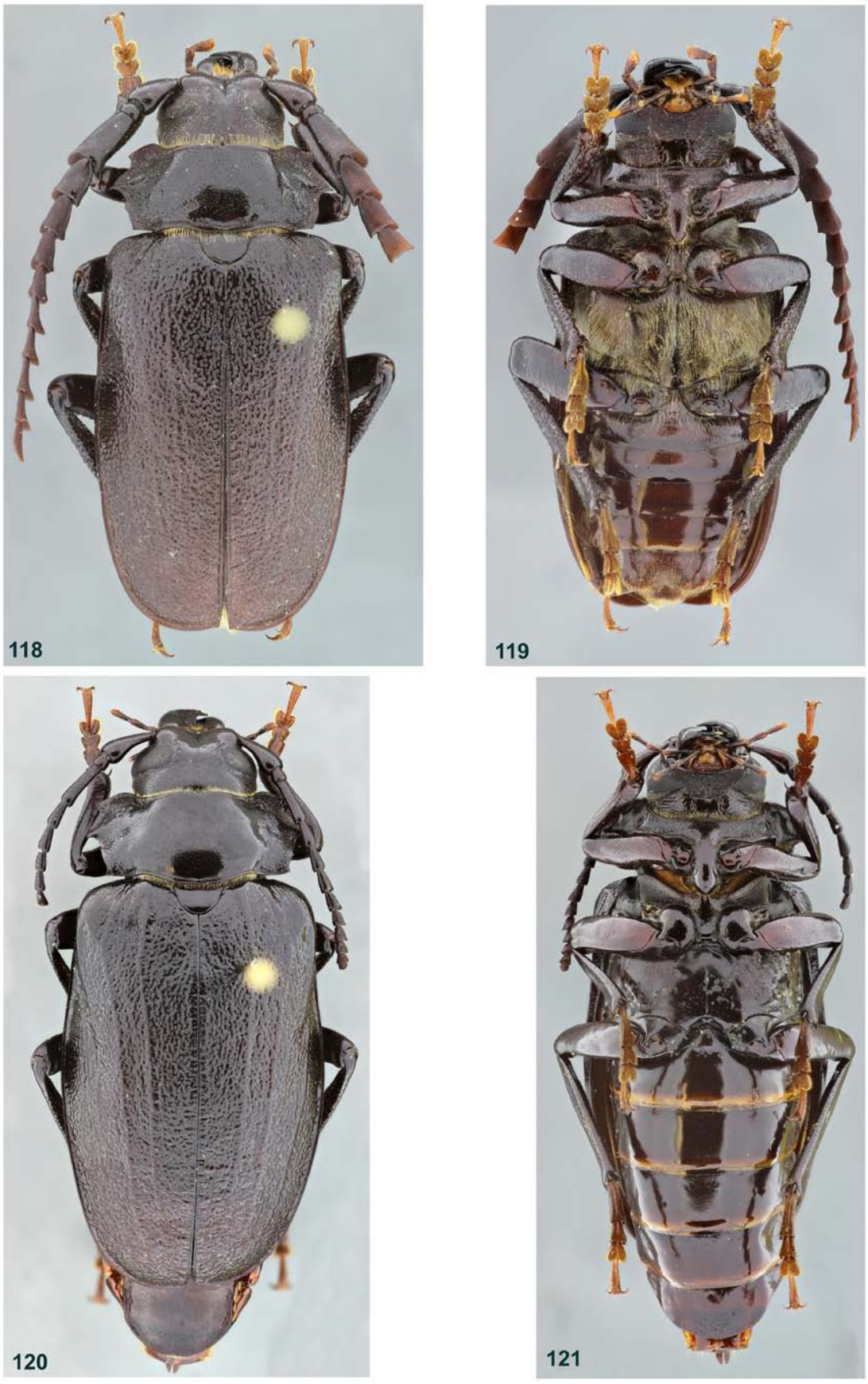
Maximum prothoracic width from slightly shorter to equal to elytral base; anterolateral angle projected forward, rounded or truncate toward first lateral tooth; first lateral tooth small, acute, placed close to anterolateral angle; second lateral tooth large, acute, apex usually slightly projected backwards, placed about middle of margin; margin between second tooth and posterolateral angle from straight to convergent (sometimes with a small tooth at middle); posterolateral angle usually obtuse (sometimes forming a acute angle); basal margin sinuous; distal margin almost straight, emarginated or not centrally. Pronotum usually distinctly convex centrally, explanate laterally; callosities absent or nearly so; disc finely (often slightly coarsely), sparsely punctate (sometimes with central area impunctate or nearly so); coarsely, more abundantly punctate laterally; lateral areas, mainly close to the lateral angles, with long, sparse setae (sometimes short and slightly distinct). Prosternum usually shining, very finely, sparsely punctate (sometimes laterally microsculptured and somewhat opaque); with long, moderately abundant setae (mainly laterally). Prosternal process usually with narrow, longitudinal sulcus shallow in middle; with moderately long, not abundant setae laterally. Elytra coarsely, abundantly punctate (rugose appearance); each elytron with two carinae, usually fused at distal third; sutural spine short. Metasternum depressed centrally toward metacoxae; finely, very densely punctate, except on a subtriangular area along distal one-half of metasternal suture which is microsculptured; with long, dense setae throughout. Metepisterna with sculpture and setae as metasternum laterally.

Ventrite I with long, moderately abundant setae along basal one-third (sometimes shorter and sparser), including process, usually shorter and sparser toward lateral margins; ventrites I–IV finely, sparsely punctate, with short sparse setae on base (slightly longer on II); ventrite V finely, densely punctate centrally, with moderately long, abundant setae, sparsely punctate and sparsely and shortly setose laterally. Protarsomeres I–III not spined at apex; mesotarsomere I acute at apex (sometimes with very short spine); mesotarsomeres II–III rounded at apex; metatarsomere I, slender, elongate, not flattened, spined at apex, mainly on inner side; metatarsomere II with short spine at apex on both sides (sometimes only acute); metatarsomere III somewhat acute at apex, slightly longer than II–III together.

Female (Figs. 120–124). Head, excluding mandibles, from slightly shorter to slightly longer at middle than prothorax. Dorsal sculpture on face of head and area behind eyes finer, sparser than in male. Distance between upper eye lobes from 0.8 to 0.9 times length of scape; distance between lower eye lobes from 1.1 to 1.2 times length of scape. Submentum as in male. Mandible as in male, but distinctly less sloped on basal one-third, between the carina and inner margin. Antennae nearly reaching apex of basal one-third of elytra; scape distinctly slenderer and longer than in male and slightly surpassing posterior ocular edge; antennomere III (Fig. 48) about 0.9 times as long as scape; antennomeres III–XI without imbrications, distinctly projected distally on outer edge after antennomere V; striae on poriferous system usually present only on antennomeres V–XI, but could be present on IV or apex of III. Prothorax as in male, but typically with posterolateral angle projected; pronotal disc finely, sparsely punctate, mainly on distal one-half. Metasternum and metepisterna from glabrous to very, sparsely short pubescent.

Dimensions in mm (male/female). Total length (including mandibles), 24.5–32.5/35.8–39.0; prothoracic length at center, 3.6–5.0/5.5–5.6; largest prothoracic width, 8.1–10.5/12.6–13.0; humeral width, 8.7–9.8/13.5–13.7; elytral length, 16.5–23.3/23.9–24.5.

Geographical distribution. Canada [Ontario (Bethune, 1868), Quebec (Campbell *et al.*, 1989.)], USA [Massachusetts (Harris, 1838); New York (Emmons, 1854), New Jersey (Bland, 1861), Illinois (Holmes, 1868), Missouri (Holmes, 1869b), Kansas (Popenoe, 1877), Connecticut (Smith, 1873), Nebraska (Bruner, 1891), Ohio (Webster, 1892), West Virginia (Hopkins, 1893), Pennsylvania (Hamilton, 1895), District of Columbia (Ulke, 1903), Michigan (Pettit, 1904), Indiana (Blatchley, 1910), Virginia (Craighead, 1915), Oklahoma (Hatch, 1930), North Caroline (Brimley, 1938), Alabama (Löding, 1945), South Caroline (Sherman, 1946), Maine (Gilmour, 1954), Wisconsin (Shenefelt & Benjamin, 1955), New Hampshire (Linsley, 1962), Vermont (Linsley, 1962), Rhode Island (Britton, 1936), Delaware (Linsley, 1962), Maryland (Linsley, 1962), Kentucky (Linsley, 1962), Tennessee (Linsley, 1962), Georgia (Linsley, 1962), Mississippi (Linsley, 1962), Florida (Linsley, 1962), Minnesota (Linsley, 1962), South Dakota (Kirk & Balsbaugh, 1975), Arkansas (Chemsak, 1996)].



FIGURES 118–121. *Prionus* (*Prionus*) *laticollis*: **118**, male, dorsal habitus; **119**, male, ventral habitus; **120**, female, dorsal habitus; **121**, female, ventral habitus.

Types, type localities. Of *Cerambyx laticollis*: Drury (1773) did not record the sex of the holotype. Based on the figure from Drury (1770), the specimen is a female, from USA (New York). Specimens from Drury's Collection are believed to be lost. However, it is possible that the holotype of *C. laticollis* has survived, and is deposited in some institution. It could have been sold after Drury's death, or when he had financial problems and was declared bankrupt, around 1777 (Ferrer *et al.*, 2004).

Of *Prionus brevicornis* (Figs. 122–125): Fabricius (1801) did not record the sex and number of specimens. According to Tavakilian & Chevillotte (2015): "Syntypes (2) / ex collection J. C. Fabricius / Zoologisk Museum, Copenhague / America Boreali." However, according to Zimsen (1964) the specimens belong to ZMUK: "Prionus brevicornis Syst. El. II p. 260. 15 "in America boreali".—Kiel 2 specimens." Webpage of ZMUC (zoology.snm.ku.dk) records: "The majority of Fabrician type specimens are housed in ZMUC, including those deriving from Fabricius' personal collection, which formally belongs to the Zoological Museum of the University of Kiel (Germany), but which is on permanent loan to ZMUC."

Of *Prionus* (*Prionus*) *kempi*: Holotype female from USA (New York, Adirondack Mountains), deposited at USNM. Figured at Lingafelter *et al.* (2016).

Of *Prionus* (*Prionus*) *laticollis oblongus*: Described based on males and females. All specimens are from USA (Indiana) and are deposited at USNM. Figured at Lingafelter *et al.* (2016).

Of *Prionus* (*Prionus*) *parvus*: Holotype male "of unknown origin and unindicated locality", deposited at USNM. Figured at Lingafelter *et al.* (2016).

Of *Prionus* (*Prionellus*) *frosti*: Described based on one male and one female from USA (Massachusetts, Framingham), deposited at USNM. Lingafelter *et al.* (2014) designated lectotype. Lectotype figured at Lingafelter *et al.* (2016).

Of *Prionus* (*Prionellus*) *nigrescans*: Described on syntypes males from USA (New York, Adirondacks), deposited at USNM. Lingafelter *et al.* (2014) designated lectotype. Lectotype figured at Lingafelter *et al.* (2016).

Of *Prionus* (*Prionellus*) *densus*: Holotype male from "Locality unrecorded", deposited at USNM. Figured at Lingafelter *et al.* (2016).

Material examined. USA, *Pennsylvania*: Chadds Ford (Delaware County), 1 male, VI.29.1991, J. E. Wappes col. (MZSP); 1 female, VII.15–21.1991, J. E. Wappes col. (MZSP). *Rhode Island*, Lincoln Woods State Park (Providence County), 1 female, VII.19.1997, Cognato col. (ESSIG). *New Jersey*: Camden County, 1 male, VII.15.1928, E. J. F. Marx col. (ESSIG); 1 female, VIII.7.1932, E. J. F. Marx col. (ESSIG). *North Caroline*: Great Smoky Mountains National Park, 1 male, VIII.21.1993, L. R. C. F. R. col. (MZSP); Cherokee County, 1 male, Nantahala National Forest, Hiwassee Dam, on living white oak tree trunk, Gino Nearns, 4 July 2002 (ENPC). *Massachusetts*: Amherst, 1 male, VII.9.1953, F. Pacheco M. col. (MZSP). *Tennessee*: Monroe County, 1 male, Coker Creek, on living tree trunk, Gino Nearns, 19 July 2003 (ENPC); Polk County, 1 male, Farner, on living tree trunk, Gino Nearns, 5 July 2002 (ENPC).

Remarks. Monné (1995) recorded on the original description of *Cerambyx laticollis*: "Drury, 1773: 83, pl. 37, fig. 2, index." However *Cerambyx laticollis* was described in 1770 (volume 1), but it was not until 1773 (volume II) that Drury associated the name with the Linnaean system, giving the index to the figures of the first volume. Although the year is correct, because the name appeared in 1773 (ICZN 1957: Opinion 474), the page, plate, and figure are from volume 1 (published in 1770). According to Santos-Silva *et al.* (2010): "It has also been noted that the index is not paginated (Drury & Westwood 1837; Gemminger & Harold 1872; Gahan 1895; Lameere 1902; mainly Hayek, 1985: 151), however, this is not the case. The index is paginated as "Mm" which corresponds to page "133". At the time, it was common to identify each page with a number, and for each four pages to include additional identification of the page as a letter (Aa, Bb, Cc, etc)." The name of *Cerambyx laticollis* appears in the next page after "Mm". Thus, the page of the original description is "134" (in the volume II), and not in the page "83" (of the volume I).

Schönherr (1817) was the first who recognized that *Cerambyx laticollis* and *Prionus brevicornis* were the same species, although he had considered the latter as valid: "19. *Brevicornis*. * Fabr. S. El. II. p. 260. 15. / *Cer. laticollis*. * Drury Ins. I. p. 83. T. 37. F. 2." Drury & Westwood (1837), without explanation, considered *Prionus laticollis* in *Prionus* (*Derobrachus*) Audinet-Serville, 1832, and also considered *Prionus brevicornis* equal to *P. laticollis*, but the latter as having priority: "SYN. Cerambyx Laticollis, *Drury, App. vol. 2.* / Prionus brevicornis, *Fabricius Syst. Eleuth. 2. p. 260. 15. Sch. Syn. Ins. 3. 339. Pal. Bauv.* [*sic*] *Ins. d'Afr. et d'Amer. Col. Pl. 34. f. 3.*" Harris (1841), apparently following Drury & Westwood (1837) recorded: "Our largest species is the broad-necked Prionus,

*Prionus laticollis** of Drury, its first describer.—**Prionus brevicornis* of Fabricius." Later, LeConte (1852b) recognize his mistake in LeConte (1852a) and recorded: "p. 109. Prionus brevicornis. Drury's *Cerambyx laticollis*, Vol. 1, pl. 37, fig. 2, has precedence; the name must therefore be *Prionus laticollis* Harris. Cat. 571."

Between Schönherr (1817) and LeConte (1852b) *Prionus brevicornis* was listed as valid by some authors who likely considered *Prionus laticollis* as its synonym: Palisot de Beauvois (1805), Harris (1838), Haldeman (1847), Chevrolat (1852). LeConte (1852a) considered both as the same species, because he made this clear in LeConte (1852b). However, even after LeConte (1852b) some authors mentioned *Prionus brevicornis* as having priority (*), distinct of *P. laticollis* (-), or did not make this clear (+): Melsheimer (1853) (*), White (1853) (*), Bethune (1868) (+), Packard (1869) (-), LeConte (1878) (+), Packard (1881) (+), LeConte & Horn (1883) (+), Clarkson (1884) (+), Packard (1890) (-), and Casey (1924) (-).

Lameere (1919) doubted the following species/ subspecies as being synonyms of *P. laticollis*: "? *Kempi* Casey… / ? *oblongus* Casey… / ? *parvus* Casey… / ? *validiceps* Casey…"

Casey (1924), without explanation, considered *Prionus* (*Prionellus*) *oblongus* as a distinct species of *P.* (*Prionellus*) *laticollis*.

Linsley (1957) formalized the synonym of *Prionus* (*Prionus*) *kempi*, *P.* (*P.*) *laticollis oblongus*, *P.* (*P.*) *parvus*, synonymized *P.* (*Prionellus*) *frosti*, *P.* (*P.*) *nigrescans*, and *P.* (*P.*) *densus*, and considered *P.* (*Prionus*) *validiceps* as synonym of *P. pocularis*.

On *Prionus beauvoisi* Lameere, 1915, see remarks on *P. imbricornis*.

According to Linsley (1962) and Chemsak (1996) only the poriferous system of antennomeres VII–XII are striolate. However, all antennomeres are striolate in the males examined by us.

Prionus (*Prionus*) *poultoni* Lameere, 1912

(Figs. 24–28, 128–129)

Prionus poultoni Lameere, 1912b: 177; 1913: 77 (cat.); 1919: 137; Blackwelder, 1946: 556 (checklist); Chemsak *et al.*, 1992: 21 (checklist); Noguera & Chemsak, 1996: 396 (distr.).

Prionus (*Prionus*) *poultoni*; Monné & Giesbert, 1994: 15 (checklist); Monné, 1995: 54 (cat.); Monné & Hovore, 2005: 19 (checklist); 2006: 19 (checklist); Monné, 2006: 87 (cat.); Özdikmen & Turgut, 2009: 411; Bezark & Monné, 2013: 28 (checklist); Monné, 2015: 177 (cat.).

Male (Figs. 128–129). Head dark-brown, usually with black irregular areas dorsally; mandibles black; scape dark-brown, usually slightly lighter near apex; antennomere III (often also IV) in males dark-brown, with longitudinal brown vitta dorsally; antennomeres V–XII/XIII from brown to reddish-brown; pronotum from brown to reddish-brown centrally (often with darker, irregular areas), darker toward margins; scutellum from reddish-brown to dark-brown, with margins darker; elytra from brown to dark-brown, usually slightly lighter toward apex, with darker region around scutellum as semi-ellipse; pro-, meso- and metathorax from reddish-brown to brown, with margins of all sclerites darker; ventrites reddish-brown with darker band close to margin (occasionally with another yellowish-brown band close to dark band); femora from brown to dark-brown, darker on margins; tibiae from brown to dark-brown with darker margins, always darker on basal one-fourth; tarsi reddish-brown, usually darker at distal margin, except claws brown at base, gradually darker toward apex.

Head, excluding mandibles, at central area longer than prothorax, moderately elongate behind eyes (distance from posterior ocular edge to the prothorax slightly shorter than greatest length of upper eye lobe). Longitudinal dorsal furrow distinct from clypeus to prothoracic edge (often only surpassing posterior ocular eyes); between anterior ocular edge of eyes and clypeus, placed inside a deep sulcus (deeper toward clypeus). Area on each side of longitudinal sulcus coarsely, moderately abundantly punctate (sometimes sparser, not distinctly coarse); area close to ocular carinae very coarsely, confluently punctate, with short setae; area close to base of antennal tubercle, facing anterior ocular edge, with small depressed area, coarsely, anastomosed punctate; area around longitudinal furrow, between posterior ocular edge (sometimes middle of eyes) and prothorax, with irregular, impunctate region; area between and around the latter and prothoracic edge, moderately finely, sparsely punctate (sometimes more abundant), frequently with short, sparse setae; area behind eyes coarsely, confluently punctate, becoming rugose, with moderately long, abundant setae toward lower eye lobe. Antennal tubercles sparsely, moderately finely (occasionally somewhat coarsely) punctate on basal one-third, becoming impunctate toward apex.

Postclypeus narrow, coarsely, confluently punctate laterally, with short, sparse setae; centrally glabrous, impunctate or almost so; anterior edge distinctly concave; area behind central region with deep, narrow, transverse sulcus. Anteclypeus shining, glabrous, impunctate. Labrum triangularly excavated centrally; with long, abundant setae. Eyes proportionally large; distance between upper eye lobes from 0.6 to 0.8 times length of scape; distance between lower eye lobes from 0.5 to 0.8 times length of scape. Submentum trapezoid, slightly elevated from base toward anterior carinae; surface usually shagreen, from rugose to punctate-rugose; with short, sparse setae (often glabrous or almost so); anterior edge distinctly carinate. Apex of labial palpi nearly attaining middle of maxillary palpomere IV. Latero-basal one-third of mandibles depressed. Antennae with 12 or 13 segments; attaining base of distal one-third of elytra; antennomeres usually proportionally shorter in specimens with 13 segments. Scape not attaining posterior ocular edge (occasionally only middle), slightly enlarged toward apex; finely, sparsely punctate dorsally; on latero-outer face moderately coarsely punctate; on latero-inner very sparsely and finely punctate. Antennomere III (Fig. 24) from 1.6 to 1.9 times longer than scape, distinctly enlarged toward apex (distal width about twice basal width); on dorsal view, imbrication distinct, projected (Fig. 25); on ventral view, apex of imbrication distinctly emarginated (Fig. 26); finely, sparsely punctate dorsally. Antennomere IV about as long as 0.9 times III; finely, abundantly punctate dorsally throughout, or finely sparsely punctate on basal two-thirds; imbrication as in III. Antennomeres V–VI finely, abundantly punctate throughout; imbrication as in III. Antennomeres VII–XI/XII dorsally striolate (striae coarser mainly from VIII); in dorsal view, imbrication similar to III; in ventral view as in III. Antennomere XII/XIII from slightly shorter to slightly longer than XI/XII; in specimens with 12 segments, slightly appendiculate or partially divided, proportionally long; in specimens with 13 segments, not appendiculate or partially divided, proportionally short.

Maximum prothoracic width less than elytral base; anterolateral angle projected forward, often truncate toward first lateral tooth; first lateral tooth somewhat large, spined (sometimes only acute), placed close to anterolateral angle; second lateral tooth distinctly larger than the first, spined, apex projected backwards, placed about middle of margin; margin between second tooth and posterolateral angle from slightly to distinctly convergent; posterolateral angle usually acute (sometimes distinctly projected); basal margin sinuous; distal margin almost straight or distinctly concave. Pronotum usually distinctly convex centrally, explanate laterally; callosities distinct; disc finely, sparsely punctate (sometimes with central area impunctate or nearly so); usually coarsely, more abundantly punctate laterally; occasionally with short, sparse setae on basal one-fourth. Prosternum usually shining, very finely, sparsely punctate; with long, moderately abundant setae (mainly laterally), but sometimes short and sparse. Prosternal process usually without narrow longitudinal sulcus on middle; glabrous or nearly so laterally. Elytra moderately coarsely, abundantly punctate; each elytron with two carinae; sutural spine short (occasionally elongate). Metasternum finely, densely punctate; with long, dense setae throughout. Metepisterna with sculpture and setae as metasternum.

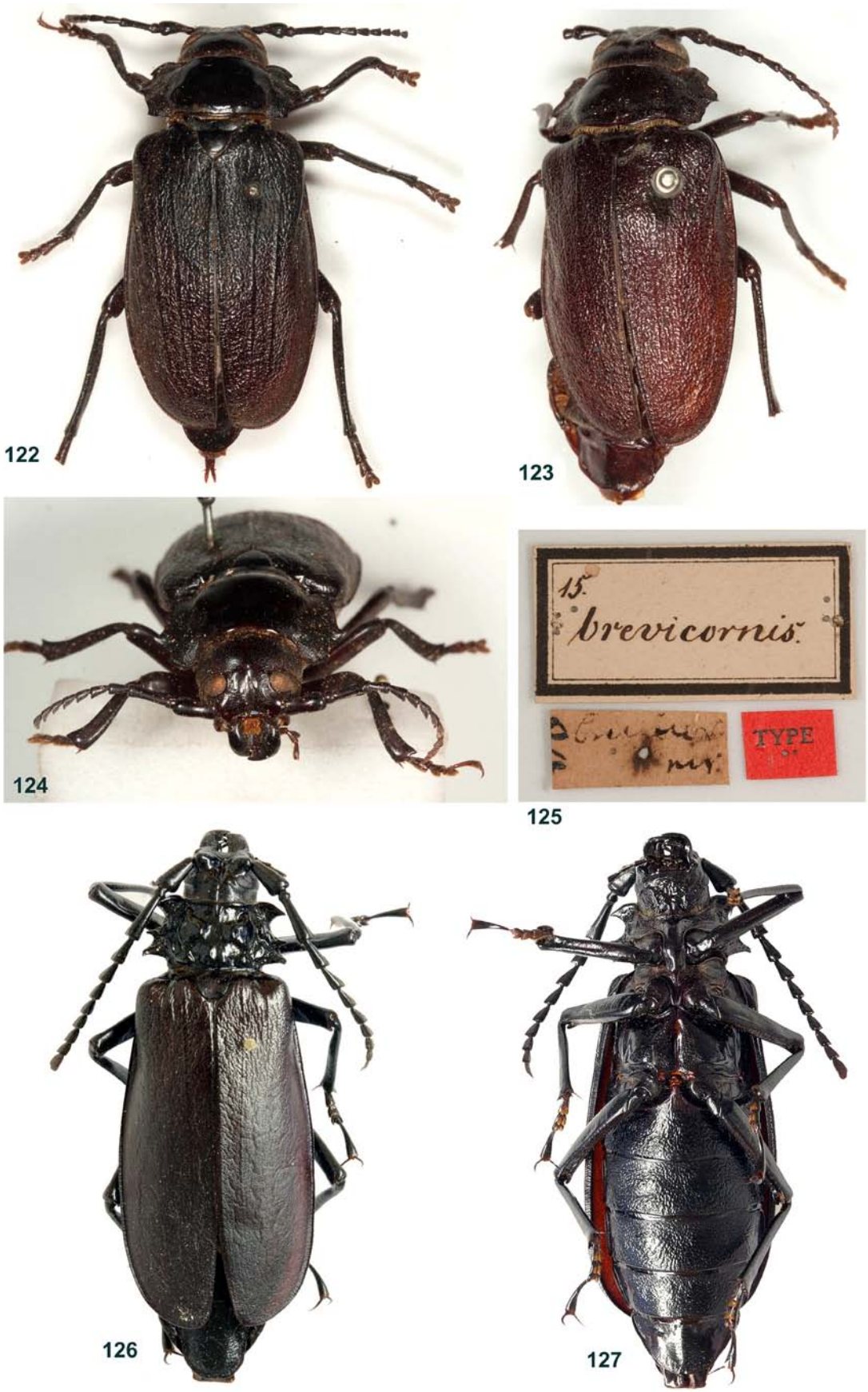
Ventrite almost impunctate; ventrite I with long, moderately abundant setae along basal one-third (sometimes shorter and sparser), including process; ventrite V with short setae laterally near apex. Pro- and mesotarsomeres I–II slightly spined at apex; pro- and mesotarsomere III acute at apex; metatarsomere I, slender, elongate, not flattened, acute at apex; metatarsomere II acute at apex; metatarsomere III with short, distinct spine at apex, slightly longer than II–III together.

Female. Head, excluding mandibles, slightly shorter at middle than prothorax. Dorsal sculpture on face of head and area behind eyes finer as in male. Distance between upper eye lobes 0.7 times length of scape; distance between lower eye lobes 0.8 times length of scape. Submentum as in male. Mandible as in male, slightly less sloped on basal one-third, between carina and inner margin. Antennae with 12 segments, slightly surpassing middle of elytra; scape more slender than in male, not attaining posterior ocular edge; antennomere III (Fig. 27) about 1.3 times as long as scape; imbrication of antennomeres III–XI (Fig. 28) as in male, but narrower. Prothorax as in male; pronotal sculpture as in male; with moderately short, sparse setae on basal one-fourth. Metasternum and metepisterna as in male.

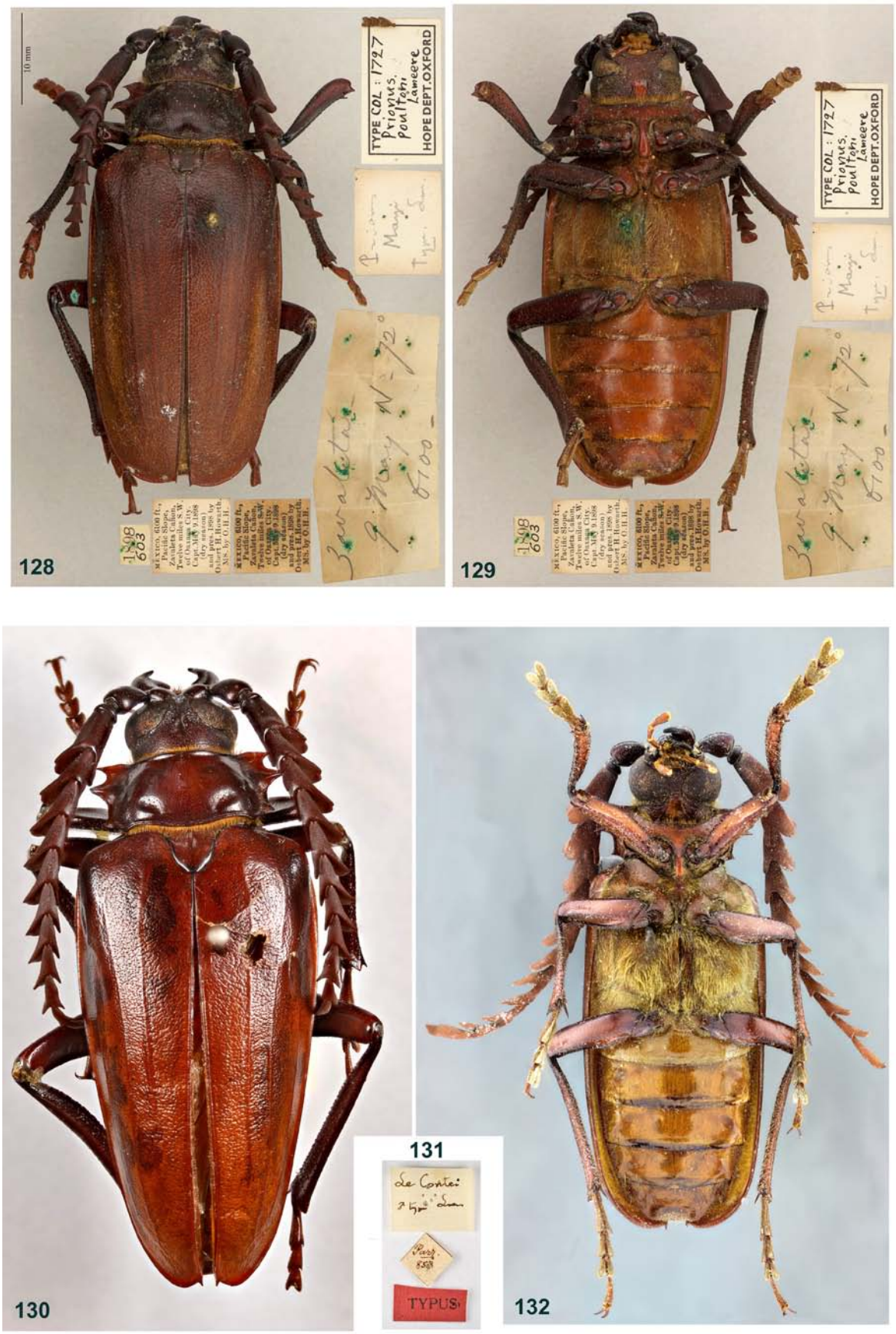
Dimensions in mm (male/female). Total length (including mandibles), 31.0–44.5/40.7; prothoracic length at center, 4.5–5.8/5.1; greatest prothoracic width, 10.2–14.1/13.9; humeral width, 11.5–16.5/14.7; elytral length, 23.8–33.5/31.0.

Geographical distribution. Mexico [Oaxaca (Lameere, 1912b), Chihuahua (**new state record**), Coahuila de Zaragoza (**new state record**), Nuevo Leon (**new state record**)], Veracruz (**new state record**)].

Type, type locality. Holotype male from Mexico (Oaxaca, Zavaleta Cañon, 12 miles SW Oaxaca), deposited at OXUM.



FIGURES 122–127. **122–125**, *Prionus brevicornis*, syntypes females: **122**, syntype 1, dorsal habitus; **123**, syntype 2, dorsal habitus; **124**, syntype 1, head, frontal view; **125**, labels. **126–127**, *Trichoprionus aureopilosus*, female: **126**, dorsal habitus; **127**, ventral habitus. Photographs 122–125 by Sree Gayathree Selvantharan; photographs 126–127 by Steven W. Lingafelter.



FIGURES 128–132. **128–129**, *Prionus poultoni*, holotype male: **128**, dorsal habitus; **129**, ventral habitus. **130–132**, *Prionus* (*Prionus*) *lecontei*, male: **130**, lectotype male, dorsal view; **131**, lectotype male, labels; **132**, male, ventral view. Photographs 128–129 by James E. Hogan; photographs 130–131 by Harald Schillhammer.

Material examined. MEXICO, *Chihuahua*: 15 miles E Cuauhtémoc (6600'), 2 males, VII.11.1964, J. A. Chemsak & J. Powell col. (ESSIG); 25 miles W Hidalgo Del Parral (6500'), 3 males, VII.15.1964, J. A. Chemsak & J. Powell col. (ESSIG); 5 miles N Cerro Campana (Siera del Nido, 5600'), 4 males, VI.28–VII.1.1959, W. C. Russell col. (ESSIG); 1 male, VII.6–8.1959, W. C. Russell col. (ESSIG); Arroyo del Nido (30 miles SW Gallego), 1 male, VI.21.1957, W. C. Russel col. (ESSIG). *Coahuila de Zaragoza*: near Jame (33 miles SE Saltillo, 7500'), 1 male, VII.10.1963, H. & A. Howden col. (ESSIG). *Nuevo Leon*: Highway 58, 6.4 miles E San Roberto, 1 female, V.26–27.1981, J. K. Liebherr col. (ESSIG). *Veracruz*: Rancho La Estancia, 1 male, VII.22.1996, Reyes-Castillo & Edmonds col. (MZSP); 1 male, VII.23.1996, Reyes-Castillo & Edmonds col. (MZSP).

Remarks. *Prionus poultoni* is very similar to *P. lecontei*. There are very few characters to differentiate them. The specimens of *P. poultoni* examined have the number of antennal segments variable, from 12 to 13 while, apparently, this does not happen in *P. lecontei*. The variation in the number of antennal segments is not related to geographical distribution. We examined specimens collected in the same place, by the same collector, and in the same date, with different number of antennal segments. Males of *P. poultoni* differ from those of *P. lecontei*: projection of antennomeres shorter (Fig. 24–26); first mesotarsomere more distinctly enlarged toward apex (Fig. 129). In males of *P. lecontei* the projection of antennomeres is longer (Fig. 49–51), and the first mesotarsomere is narrower at apex (Fig. 132). Females of *P. lecontei* have the metasternum glabrous and intercoxal process of abdomen enlarged. The single female of *P. poultoni* examined has the metasternum distinctly pubescent, and the intercoxal process is narrower, as in *P. californicus*. As the number of antennal segments is variable in *P. poultoni*, the main difference with *P. californicus* is the shape of antennomeres: shorter and wider in the former; longer and slender in the latter. As the differences between *P. poultoni* and *P. californicus* and *P. lecontei* are very small, and as *P. californicus* apparently is highly variable in many features, we prefer not to include the species in the key.

Lameere (1912) compared *P. poultoni* with *P. pocularis* and *P. laticollis*. Those species are notably different from the holotype of *P. poultoni* and thus, the comparison makes no sense. It is possible that the specimens with antennae 12-segmented are *P. californicus* and the specimens with antennae 13-segmented *P. lecontei*. All features pointed out by Lameere (1912) to define *P. poultoni* occur in *P. californicus* and *P. lecontei* (primarily in the many variations of the former). We are provisionally keeping *P. poultoni* as a valid species.

***Prionus* (*Prionus*) *flohri* Bates, 1884**

(Figs. 133–138)

Prionus flohri Bates, 1884: 227; Lameere, 1913: 78 (cat.; part); 1915: 59; 1919: 139: 1920: 144; Blackwelder, 1946: 556 (checklist); Wendt, 1984: 333 (types); Chemsak *et al.*, 1992: 20 (checklist); Noguera & Chemsak, 1996: 396 (distr.).

Prionus (*Prionus*) *flohri*; Monné & Giesbert, 1994: 15 (checklist); Monné, 1995: 52 (cat.); Monné & Hovore, 2005: 20 (checklist); 2006: 19 (checklist); Monné, 2006: 86 (cat.); Özdikmen & Turgut, 2009: 410; Bezark & Monné, 2013: 27 (checklist); Monné, 2015: 176 (cat.).

Prionus hintoni Linsley, 1935a: 69; Blackwelder, 1946: 556; Chemsak *et al.*, 1992: 21 (checklist); Noguera & Chemsak, 1996: 396 (distr.). ***Syn. nov.***

Prionus (*Prionus*) *hintoni*; Monné & Giesbert, 1994: 15 (checklist); Monné, 1995: 52 (cat.); Monné & Hovore, 2005: 20 (checklist); 2006: 19 (checklist); Monné, 2006: 86 (cat.); Özdikmen & Turgut, 2009: 411; Bezark & Monné, 2013: 28 (checklist); Monné, 2015: 176 (cat.).

Geographical distribution. Mexico [Michoacán de Ocampo (Bates, 1884), Mexico (Linsley, 1935)].
The place recorded by Lameere (1915) ("Sierra de Tlalpujahua (région montagneuse des environs de Toluca"), also is located in Michoacán de Ocampo.

Types, type locality. Of *Prionus flohri*: Described based on two males and one female, all from San Juan Tumbio, deposited at ZMHB. According to Selander & Vaurie (1962): "SAN JUAN TUMBIO, Mexico. Not located". However, according to Horn (1897) [translation]: "At the same time he [C. F. Höge] brought Flohr's Collection to Europe…"; and "Amecameca, San Juan Tumbio (Michoacan)…". Thus, the type locality of *Prionus flohri* is in the state of Michoacán de Ocampo.

We designate as lectotype the male (Fig. 133) with the following labels (Fig. 136):

Green (Handwritten): San Juan Tumbio
White (Handwritten): flohri / Bates

Red (Printed), added by us: LECTOTYPE /
Prionus flohri / Bates, 1884.

Of *Prionus hintoni*: Holotype male from Mexico (Temascaltepec, Mexico), deposited at CAS. Figured at Bezark (2016).

Remarks. The description of *P. flohri* in Lameere (1915) agrees very well with the lectotype and paralectotype males (Figs. 133–134). The general appearance of *P. flohri*, as recorded by Bates (1884) and Lameere (1915) is very similar to that of *P. californicus*. Particularly, the shape of the antennomeres are the same. Although we observed variation in the number of antennal segments, in other species of *Prionus* from Mexico, we did not find specimens of *Prionus californicus* with more than 12 segments. Unfortunately, we did not personally examine specimens of *P. flohri*, and cannot add other differences between this species and *P. californicus*. Thus, we are considering as unique and a differential character the number of antennal segments: 13 in *P. flohri*, and 12 in *P. californicus*.

Linsley (1935a) recorded on *P. hintoni*: "This species differs from other known Mexican *Prionus* in the very short antennae of the male, which attain only the basal one-third of the elytra. In addition, it differs from all except *P. flohri* Bates in having only thirteen segments to the antennae." However, by examining the holotype photo, it is possible to see that the information on antennal length is in error: the antennae distinctly surpass the basal one-third of elytra, nearly reaching the middle. Comparing the lectotype of *P. flohri* with the holotype of *P. hintoni*, the only noticeable difference is the color: dark in the former, and lighter in the latter. But the antennal shape, pronotal shape, distance between upper eye lobes, elytral shape and sculpture, are very similar. Thus, we are considering *P. hintoni* as junior synonym of *P. flohri*.

See remarks on *Prionus mexicanus*.

***Prionus* (*Prionus*) *pocularis* Dalman, 1817**

(Figs. 20–23, 139–142)

Prionus pocularis Dalman, 1817: 148; Sturm, 1843: 239; White, 1853: 17; Melsheimer, 1853: 100 (cat.); Lacordaire, 1868: 61 (note); Crotch, 1873: 83 (checklist); 1880: 83 (checklist); Leng, 1884: 57, 58; Beutenmüller, 1896: 74 (host); Smith, 1900: 285; Ulke, 1903: 25 (distr.); Evans, 1906: 99 (distr.); Fall & Cockerell, 1907: 191 (distr.); Leng, 1910: 77 (distr.); Blatchley, 1910: 1012; Smith, 1910: 324; Lameere, 1912a: 238; Dow, 1913: 78; Lameere, 1913: 77 (cat.); Frost, 1915: 209, 210; Craighead, 1915: 20 (larva); Nycolay, 1919: 63 (distr.); Lameere, 1919: 137; Britton, 1920: 266 (distr.); Kirk & Knull, 1926: 21 (distr.); Leonard, 1928: 433 (distr.); Doane *et al.*, 1936: 165; Brimley, 1938: 210 (distr.); Löding, 1945: 113 (distr.); Knull, 1946: 146; Craighead, 1950: 262 (biology); Beal *et al.*, 1952: 134; Linsley, 1957: 8; Dillon & Dillon, 1961: 580; Gosling, 1973: 67 (biology); Turnbow & Franklin, 1980: 338 (distr.); Chemsak *et al.*, 1992: 21 (checklist); Browne & Peck, 1996: 2158 (distr.); Yanega, 1996: 27; Linsley & Chemsak, 1997: 425 (host); Vlasak & Vlasakova, 2002: 204 (distr.); Monné & Hovore, 2005: 20 (checklist); 2006: 19 (checklist); McCorquodale *et al.*, 2007: 121.

Prionus (*Prionus*) *pocularis*; Casey, 1912: 238, 244; 1924: 213; Linsley, 1962: 41; MacRae, 1993: 227 (distr.); Monné & Giesbert, 1994: 15 (checklist); Monné, 1995: 53 (cat.); Chemsak, 1996: 105; Schiefer, 1998: 115 (distr.); Peck & Thomas, 1998: 116 (distr.); Özdikmen & Turgut, 2009: 411; Bezark & Monné, 2013: 28 (checklist).

Prionus pocularius; Haldeman, 1847b: 31 (error).

Prionus laevigatus Harris, 1837: 83; Haldeman, 1847b: 31; LeConte, 1852a: 109; White, 1853: 16; Melsheimer, 1853: 100 (cat.); Bland, 1861: 93 (distr.); Crotch, 1873: 83 (syn.); Lacordaire, 1868: 61 (note); Greene, 1918: 257.

Prionus elongatus Chevrolat, 1838: 119 (wrong name to *P. laevigatus* Harris, 1837).

Prionus obliquicornis LeConte, 1852a: 108; White, 1853: 17; Melsheimer, 1853: 100 (cat.); Crotch, 1873: 83 (syn.); Lacordaire, 1868: 61 (note); Lameere, 1913: 77 (cat.; syn.).

Prionus (*Prionus*) *obliquicornis*; Casey, 1912: 233, 244; 1924: 213.

Prionus curticornis LeConte, 1852a: 109; Melsheimer, 1853: 100 (cat.); White, 1853: 17 (syn.); Lacordaire, 1868: 61 (note); Lameere, 1913: 77 (cat.; syn.).

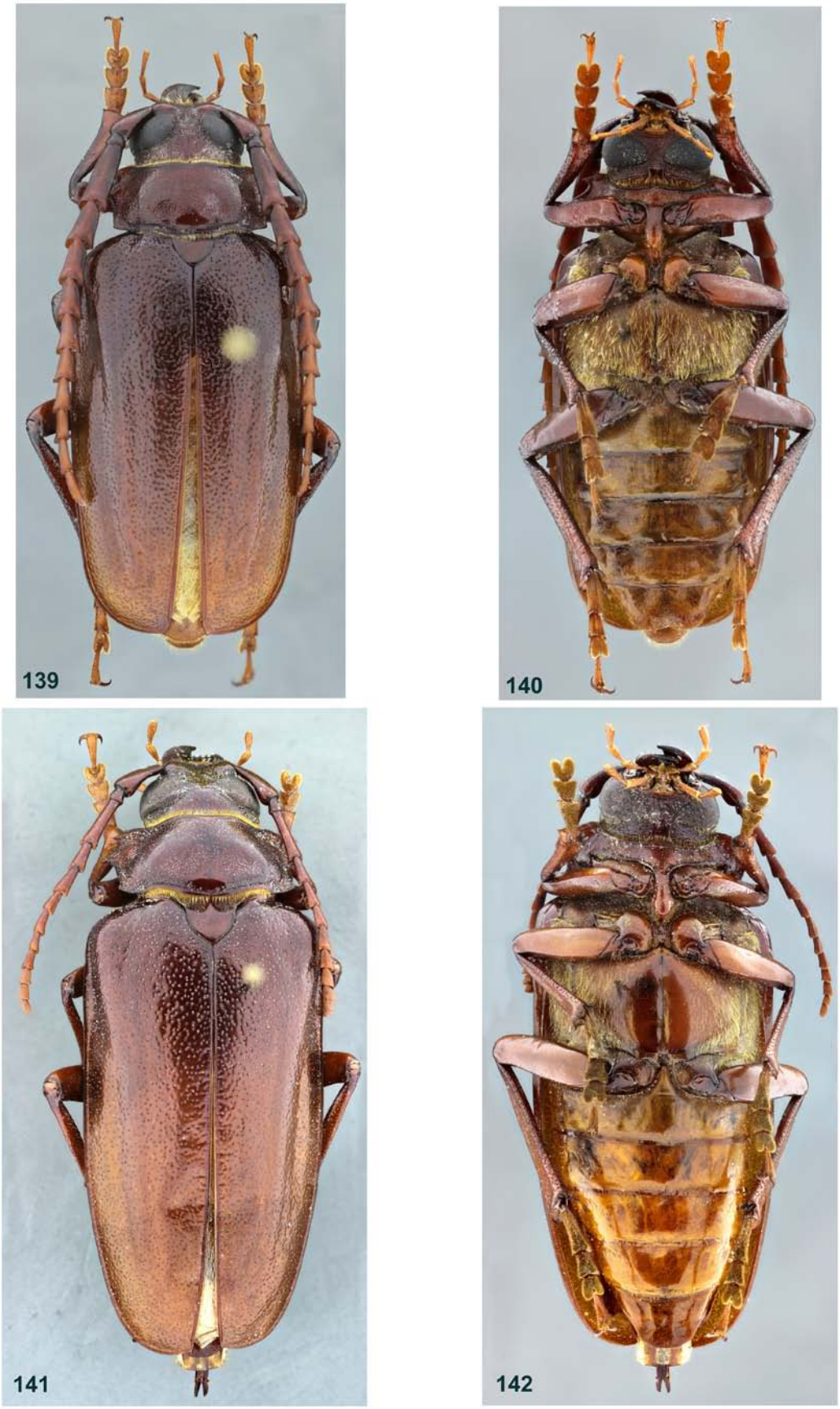
Prionus (Prionus) curticornis; Casey, 1912: 233, 244; 1924: 213.

Prionus (*Prionus*) *pocularis prolixus* Casey, 1912: 239; 1924: 213 (syn.); Lingafelter *et al.*, 2014: 301 (type).

Prionus (*Prionus*) *bicolor* Casey, 1912: 239; 1924: 213; Linsley, 1957: 8 (syn.); Lingafelter *et al.*, 2014: 27 (type).

Integument from reddish-brown to brown, normally darker dorsally, primarily on head, pronotum and base of elytra; antennae distinctly lighter toward apex; ventrites distinctly lighter; margins of tibiae and femora black or dark-brown.

FIGURES 133–138. *Prionus flohri*: **133**, Lectotype male, dorsal habitus; **134**, male, paralectotype male, dorsal habitus; **135**, paralectotype female, dorsal habitus; **136**, labels of the lectotype; **137**, labels of the paralectotype male; **138**, label of the paralectotype female. Photographs by Joachim Willers.



FIGURES 139–142. *Prionus* (*Prionus*) *pocularis*: **139**, male, dorsal habitus; **140**, male, ventral habitus; **141**, female, dorsal habitus; **142**, female, ventral habitus.

Male (Figs. 139–140). Head, excluding mandibles, from 1.00 to 1.15 times as long at central area as prothorax, elongate behind eyes (distance from posterior ocular edge to the prothorax from 0.55 to 0.70 times greatest length of upper eye lobe). smooth, usually punctate laterally. Area between antennal tubercles and middle of eyes coarsely, abundantly punctate (sometimes punctures sparser); with short, sparse setae (sometimes absent centrally or extremely short throughout). Area from middle of upper eye lobes and anterior margin of prothorax coarsely, sparsely punctate (sometimes centrally smooth), but distinctly denser close to eyes; glabrous, except for short, sparse setae close to eyes. Area behind upper eye lobes coarsely, abundantly punctate; with short, moderately sparse setae. Area behind lower eye lobes moderately finely, densely punctate, somewhat rugose; with moderately long, sparse setae closer to prothorax, forming brush close to eyes. Antennal tubercles coarsely, moderately abundantly punctate on basal one-half, smooth toward apex; glabrous or with short, sparse setae on base. Postclypeus coarsely, densely punctate laterally, gradually finer, sparser toward center. Labrum with very long, abundant setae. Eye proportionally large; distance between upper eye lobes from 0.45 to 0.60 times length of scape; distance between lower eye lobes from 0.3 to 0.6 times length of scape. Submentum trapezoid, distinctly narrowed toward gula, somewhat depressed, with anterior margin narrow, distinctly elevated; surface rugose, with moderately long, sparse setae. Apex of labial palpi nearly attaining middle of maxillary palpomere IV. Mandibles from 0.5 to 0.55 times as long as head. Antennae 12-segmented; reaching from base of distal one-third to distal one-fourth of elytra. Scape reaching or nearly reaching posterior ocular edge; finely, sparsely punctate dorsally, slightly denser punctate laterally, mainly on basal one-third. Antennomere III (Fig. 20) about 1.3 times as long as scape dorsally; enlarged toward apex (widest width from 1.7 to 1.9 times basal width); imbrication distinct, but slightly projected (Fig. 21, 22), with apex slightly emarginated; dorsal surface finely, sparsely punctate on basal two-thirds, densely punctate on distal one-third. Dorsal surface of antennomere IV–VII finely, densely punctate; dorsal surface of remaining antennomeres striate. Imbrication of antennomeres IV–XI as in III. Last antennomere simple.

Maximum prothoracic width from 0.85 to 0.95 times elytral base; anterolateral angles from acute to distinctly spined, with anterior margin rounded, somewhat projected forward; side with long spine about middle, usually projected backward; posterolateral angle from subrounded to acute, usually slightly projected. Pronotum finely, moderately abundantly punctate centrally, with smooth area close to base; slightly coarsely and densely punctate laterally; with short, sparse setae laterally. Prosternal process slightly longitudinally sulcate about middle. Elytra coarsely, abundantly punctate, usually somewhat rugose toward apex; each elytron with two distinct carinae dorsally, with carina slightly distinct laterally. Metasternum and metepisterna with long, abundant setae.

Ventrite I with short, sparse setae on area of central projection; remaining surface glabrous, except occasionally sparse short setae laterally; ventrites II–IV glabrous, except for short, sparse setae laterally; ventrite V with short, sparse setae laterally and apically. Pro- and mesotarsomeres wide; pro- and mesotarsomeres I–II acute at apex (sometimes only slightly); metatarsomeres distinctly slender, mainly I, with apex of I–II spined.

Female (Figs. 141–142). Head, excluding mandibles, from 0.85 to 0.95 times length of prothorax at middle. Sculpture on dorsal surface of head from similar to finer and sparser than in male; area behind eyes as in male. Distance between upper eye lobes from 0.45 to 0.80 times length of scape; distance between lower eye lobes from 0.55 to 1.00 times length of scape. Antennae with 12 segments; reaching from near apex of distal one-third to near middle of elytra; scape distinctly slenderer than males, scape from not reaching to surpassing posterior ocular edge; antennomere III from 0.95 to 1.20 times length of scape; antennomeres ventrally (Fig. 23) as in males, but distinctly slender. Prothorax as in male. Metasternum and metepisterna with abundant long setae, but with area around metasternal suture glabrous or nearly so.

Dimensions in mm (male/female). Total length (including mandibles), 30.8–39.8/38.0–42.3; prothoracic length at center, 4.2–5.5/5.3–6.0; widest prothoracic width, 9.4–11.7/12.7–14.0; humeral width, 10.0–14.4/13.7–16.0; elytral length, 22.4–28.2/28.3–31.2.

Geographical distribution. Canada [Ontario (Evans, 1906)], USA [Georgia (Dalman, 1817), Massachusetts (Frost, 1915), Pennsylvania (Bland, 1861), District of Columbia (Ulke, 1903), New Jersey (Smith, 1900), Indiana (Blatchley, 1910), Mississippi (Lameere, 1912a), Michigan (Lameere, 1912a), Florida (Casey, 1912), New York (Nicolay, 1919), Connecticut (Britton, 1920), North Carolina (Brimley, 1938), Alabama (Löding, 1945), Minnesota (Linsley, 1962), Illinois (Linsley, 1962), Virginia (Linsley, 1962), Tennessee (Linsley, 1962), Texas (Linsley, 1962), Arkansas (Linsley, 1962), Louisiana, (Linsley, 1962), South Carolina (Linsley, 1962), Missouri (MacRae, 1993), Wisconsin (**new state record**)].

Lord (1986) recorded *Prionus pocularis* for British Columbia in Canada. The insect specimens, according to him, were identified by "Mr. Walker." However, the species that is recorded in that area is *P. californicus*. Thus, the citation is a mistake. White (1853) was the first to record the species in Canada, but without a precise locality. Fall & Cockerell (1907) recorded *P. pocularis* for New Mexico (Albuquerque and Santa Fé). However, the species is not known to occur in the state. Thus, the specimens were probably incorrectly identified. The citation is kept in the reference list, until the specimens can be examined to confirm or not the identification. Knull (1946) wrote: "This species should occur in Ohio." We believe that *Prionus pocularis* probably occurs in Ohio. However, Knull's (1946) comment is not a formal record, and no other author has recorded the species in Ohio.

Type, type locality. Of *Prionus pocularis*: Holotype male from USA (Georgia), deposited at NHRS.

Of *Prionus laevigatus*: Syntypes (at least, two males and one female), from USA, probably deposited at MCZ and MSB. Monné (1995) recorded: "Type locality, United States, Massachusetts". Linsley (1962) and Chemsak (1996) also recorded Massachusetts as the states where the specimens were taken. However, Harris (1837) did not say from where in USA the syntypes originated. We do not know what the source of information was for these authors. According to Harris (1837): "*P. laevigatus, Harris. Catalogue*, p. -. / *Halsey's Collection*, No. 227. A male. / *Cabinet of the Boston Soc. Nat. Hist.* No. 1862, male, No. 1360. Female." According to Harvard University Library (1982): "In 1831 he [Harris] prepared a catalogue of insects for Edward Hitchcock's Report on the Geology, Mineralogy, Botany and Zoology of Massachusetts." This correspond to "*P. laevigatus, Harris Catalogue, p. -.*" *P. laevigatus* in Harris (1833: 579; 1835: 571) and is a *nomen nudum*. It is not clear if there was or was not a specimen in Harris' Collection. Harris (1833) wrote: "The insects enumerate in the preceding list, with the exception of about half a dozen, are contained in my cabinet; and most of them were collected in the vicinity of Boston"; and "A few names, without any authorities annexed will also be found on this list; they are applied to species, which, as far as I can ascertain, do not appear to have been published: these it is my hope soon to make known by means of necessary descriptions." Thus, it is possible that there was(were) specimen(s) in Harry's Collection. It is also possible that there is(are) specimen(s) in other collections, because Harris (1833) also wrote that he received specimens from some other collectors: "…I am indebted to my friend the Rev. L. W. Leonard, who has still more increased my obligations to him by his disinterested liberality in sending me even the rare and undescribed insects of which he possessed duplicates." All specimens of "*P. laevigatus*" examined by Harris as base for his paper (1833) are syntypes, because in 1837 he listed this paper (ICZN, 1999: Article 72.4.1, and 72.4.1.1). Unfortunately, we don't know if Leonard's Collection survived or, if it did, where it is deposited.

Of *Prionus obliquicornis*: Holotype male from USA (Georgia), deposited at MCZ. Figured at http://www.mcz.harvard.edu/

Of *Prionus curticornis*: Holotype female from USA (Georgia), deposited at MCZ.

Of *Prionus* (*Prionus*) *pocularis prolixus*: Holotype female from USA ("Locality unrecorded"), deposited at USNM. Figured at Lingafelter *et al.* (2016).

Of *Prionus* (*Prionus*) *bicolor*: Holotype female from USA (Indiana), deposited at USNM. Figured at Lingafelter *et al.* (2016).

Material examined. USA, *Texas*: The Woodlands (Montgomery County), 1 male, VI.10–18.1977, J. E. Wappes col. (MZSP); 1 female, VI.15.1978, J. E. Wappes col. (MZSP). *Georgia*: Athens (Dairy Farm), 1 female, 08.VIII.1994, [no collector indicated] (UNESP); Dekalbe County, 1 male, VII.2.1971, [no collector indicated] (MZSP). *North Carolina*: Gastonia, 1 male, VI.8.1939, R. M. McKenzie col. (MZSP); Jacksonville, 1 female, VI.1961, [no collector indicate] (MZSP); 1 male, 1 female, VII.7.1962, [no collector indicated] (MZSP). *Wisconsin*: Eau Claire, 1 male, VII.21.1906, H. H. P. Severin col. (MZSP). *Alabama*: Birmingham, 1 male, VII.1970, [no collector indicated] (MZSP). *Florida*: Lutz, 1 female, V.18.1916, F. W. Friday col. (ESSIG).

Remarks. White (1853), without explanation, synonymized *P. curticornis* with *Prionus pocularis*.

Crotch (1873) synonymized *P. laevigatus* and *P. obliquicornis* with *Prionus pocularis*. *Prionus curticornis* was not recorded in Crotch (1873).

Leng (1884) followed Crotch (1873) and added two species as synonyms of *Prionus pocularis*: "*curticornis*, Lec. J. A. P. ser. 2, II, p. 109; *obliquicornis*, Lec. J. A. P. ser. II, p. 108; *laevigatus*, Harris, Trans. Soc. Htford 1836, p. 83, t. I, f. 6; Lec. J. A. P. ser. 2, II, p. 109; *denticornis*, Sturm, Cat. 1836, p. 187."

Lacordaire (1868) wrongly listed, nearly all those species synonymized with *P. pocularis* having them as valid species, except *P. laevigatus* and *P. denticornis*. Lameere (1912a) listed *P. laevigatus*, *P. obliquicornis*, and *P. curticornis* as synonyms of *Prionus pocularis*.

Casey (1912), without comments, considered *P. curticornis* and *P. obliquicornis* as valid species. We consider those revalidations as a valid nomenclatural act, and thus, we consider that it was Lameere (1913) who one more time synonymized those species with *P. pocularis*. Casey (1924), in doubt, listed *P. curticornis* and *P. obliquicornis* as synonyms.

Lameere (1919), in doubt, considered *Prionus* (*Prionus*) *pocularis prolixus* and *Prionus* (*Prionus*) *bicolor* to be synonyms of *P. pocularis*. Casey (1924) formalized the synonymy of *Prionus* (*Prionus*) *pocularis prolixus*, but considered *Prionus* (*Prionus*) *bicolor* as a valid species. Linsley (1957) formalized the synonymy of *P.* (*P.*) *bicolor* as indicated by Lameere (1919).

Although Leng (1884) has recorded "*denticornis*, Sturm, Cat. 1836, p. 187", there is no Sturm's catalogue published in 1836. According to Smithsonian Libraries (http://www.sil.si.edu/DigitalCollections/NHRareBooks/Sturm/sturm-introduction.htm): "In 1796 Sturm published the catalog of his own insect collection, reproduced here. It also is quite small, only 14 cm. (5 1/4 in.) tall. As a result of his work and expanding network of contacts with entomologists and other scientists, his collection grew so rapidly that he issued an enlarged second edition only four years later, in 1800, and eventually a third in 1826 and a fourth in 1843." We surmise, that Leng (1884) was referring to the second edition of Sturm's Catalogue (1826). *Prionus denticornis* Sturm, 1826 is a *nomen nudum*, "synonymized" with *Prionus pocularis* by Sturm (1843).

***Prionus* (*Prionus*) *lecontei* Lameere, 1912**

(Figs. 49–51, 130–132)

Prionus Le Contei Lameere, 1912a: 244; 1913: 78 (cat.); 1919: 139.

Prionus lecontei; Leng, 1927: 39 (cat.); Linsley, 1935b: 161 (distr.); Hovore & Giesbert, 1976: 350 (host); Hovore, 1988: 3 (distr.); Chemsak *et al.*, 1992: 21 (checklist); Noguera & Chemsak, 1996: 396 (distr.); Linsley & Chemsak, 1997: 424 (host); Monné, 2002: 25 (host); Monné & Hovore, 2005: 20 (checklist); 2006: 19 (checklist); Swiecki & Bernhardt, 2006: 66; Barbour *et al.*, 2011: 588–591; Rodstein *et al.*, 2011: 114, 119–123.

Prionus (*Prionus*) *lecontei*; Linsley, 1962: 45; Monné & Giesbert, 1994: 15 (checklist); Monné, 1995: 53 (cat.); Chemsak, 1996: 108; Monné, 2006: 87 (cat.); Özdikmen & Turgut, 2009: 411; Bezark & Monné, 2013: 28 (checklist); Monné, 2015: 176 (cat.).

Prionus californicus lecontei; Leng, 1920: 266 (cat.).

Male (Figs. 130, 132). Integument reddish-brown, slightly darker dorsally, especially on head (often also ventrally), pronotum, and basal one-third of elytra; antennae from reddish-brown to dark-brown, usually lighter toward apex; legs from reddish-brown to brown, margined with dark-brown or black. Head, excluding mandibles, from 1.0 to 1.2 times as long as prothorax at central area, moderately elongate behind eyes (distance from posterior ocular edge to the prothorax from 0.5 to 0.9 times length of upper eye lobe, typically smaller in small specimens). Longitudinal dorsal furrow distinct from clypeus to near anterior margin of prothorax (sometimes reaching prothorax), always less distinct toward prothorax. Frons short, smooth, shining, glabrous. Area on each side of longitudinal furrow, between antennal tubercles and middle of eyes, deeply sulcate, coarsely, moderately abundantly punctate (usually with confluent punctures). Area close to ocular carinae coarsely, confluently punctate, with short, sparse setae. Central area between middle of eyes and anterior margin of prothorax moderately finely, sparsely punctate; glabrous or with very short, sparse setae; lateral areas between eyes and prothorax with punctures slightly coarser, denser than on central area, with short, moderately sparse setae. Area behind upper eye lobes moderately finely, abundantly punctate (punctures denser and slightly coarser toward lower eye lobes); with short, moderately abundant setae. Area behind lower eye lobes finely rugose, with short, moderately sparse setae toward prothorax, with brush of moderately short setae close to eye. Antennal tubercles nearly contiguous on base; finely, sparsely punctate (usually smooth at apex), but sometimes with fine, dense punctures anteriorly close to clypeus. Postclypeus narrow, moderately finely, abundantly, confluently punctate laterally, gradually sparser toward center; with short, sparse setae laterally, glabrous centrally. Anteclypeus shining, glabrous, impunctate. Labrum with very long, abundant setae. Eyes large; distance between upper eye lobes from 0.40 to 0.55 times length of scape; distance between lower eye lobes from 0.4 to 0.5 times length of scape. Submentum trapezoid, slightly depressed, rugose, with short, sparse setae; anterior edge distinctly carinate. Apex of labial palpi not attaining middle of maxillary palpomere IV. Antennae with 13 segments; attaining from distal one-third to distal one-fourth of elytra. Scape clearly not attaining posterior ocular edge, slightly enlarged toward apex; finely,

sparsely punctate dorsally (denser on basal one-third); punctures on latero-outer side slightly coarser than dorsally. Antennomere III from 1.1 to 1.2 times longer than scape dorsally, distinctly enlarged toward apex (distal width from 2.2 to 2.9 times basal width); on dorsal view, imbrication distinct, projected (Fig. 49); on ventral view (Fig. 50, 51), imbrication forming two distinct lobes, separated by deep emargination, with outermost largest, slightly emarginate at level of carina; finely, sparsely punctate on basal one-half dorsally, (sometimes only basal one-third), microsculptured toward apex (sometimes with smooth, small area at apex). Remaining antennomeres microsculptured dorsally. Antennomere IV from 0.75 to 0.90 times as long as III. Imbrication of antennomeres IV–XII as in III, but usually with deeper emargination of outermost lobe.

Maximum prothoracic width slightly smaller than elytral base; anterolateral angle spined (spine long), with anterior margin straight or slightly rounded; lateral spine very long, projected backwards; posterolateral angle acute, distinctly projected. Pronotum somewhat flat centrally; disc very finely, moderately abundantly punctate, finely punctate laterally, but distinctly coarser than center of disc; with sparse, short setae laterally (also, sometimes with very sparse setae on central area). Prosternum finely and sparsely asperate; with long, moderately abundant setae. Elytra finely, abundantly punctate; each elytron with three carinae (innermost two most distinct); sutural apex with short spine.

Ventrites almost smooth; ventrite I usually with short setae on basal one-third. Pro- and mesotarsomeres I–II with short spine at apex (shorter in protarsomeres); apex of metatarsomeres I–II distinctly projected (usually slightly spined).

Female. Not examined.

Dimensions in mm (male). Total length (including mandibles), 34.5–46.5; prothoracic length at center, 4.2–6.2; widest prothoracic width, 11.1–15.4; humeral width, 11.5–17.0; elytral length, 24.7–33.6.

Geographical distribution. Canada [British Columbia (Linsley, 1962)], USA [California (Lameere, 1912)], Mexico [Baja California (Hovore, 1988)].

Type, type locality. Described from USA, California, based on three syntypes (two males and one female) deposited at NHMW.

We designate as lectotype the male (Fig. 130) with the following labels (Fig. 131):

White (Handwritten): Le Contei / [male symbol] / type / Lam.
White (Handwritten): Pars. / 858.
Red (Printed): TYPUS
Red (Printed), added by us: LECTOTYPE /
Prionus lecontei / Lameere, 1912.

Material examined. USA, *California*: Dunlap (Fresco County), 9 males, VII.2.1973, Doug Whitman col. (ESSIG); Joshua Tree, 1 male, VI.25.1960, E. L. Sleeper col. (MZSP); Oakland (Alameda County), 1 male, VI.1937, [no collector indicated] (ESSIG); 25 miles NE Redding (Shasta County), 1 male, VII.14.1960 (no collector indicated) (MZSP); Santa Clara County, 1 male, VII.1973, Doug Whitman col. (ESSIG); Trabuco Oaks (Orange County), 1 male, VII.15.1977, D. W. Jordan col. (ESSIG).

Remarks. Leng (1920), without any explanation, considered *P. lecontei* as a subspecies of *P. californicus*. Linsley (1935b) recorded: "*P. lecontei* is not a variety or synonym of *P. californicus* as it has been placed by recent writers, but is a very distinct species. It differs markedly from *californicus* in having thirteen-segmented rather than twelve-segmented antennae, with the external processes of segments four to eleven very strongly produced and longer than the segments to which they are attached (in *californicus* the processes are shorter than the segments on which they occur)." However, Linsley (1962) suggested the possibility of synonym between *P. lecontei* and *P. californicus*: "The status of this form is perplexing. I have seen specimens from about a dozen localities, sometimes captured along with typical *californicus*. The characters which separate the two suggest that they represent distinct species. However heterogony may be involved." For the time being, there is no reason to affirm that both are the same species.

According to Lameere (1912a), this species differs from *P. californicus* [translation]: "by the lobes of third article of hind tarsi just angular and not dentate at apex; by the process of ventrite I wide and rounded in female; by the metasternum glabrous in female; by the sculpture of the elytra more finely rugose, with punctures more or less visible; by the antennae shorter and more tumid, with 13 segments in both sexes, with outer process of the articles

very developed." However, the apex of metatarsomere in some specimens of *P. californicus* is similar to specimens of *P. lecontei*. The antennae, as in *P. californicus*, are variable in length and frequently have equal length in both species.

***Prionus* (*Prionus*) *heroicus* Semenov, 1908**

(Figs. 143–157, 172, 177, 178)

Prionus heros Fall, 1905: 274; Skinner, 1905: 291 (preoccupied).

Prionus heroicus Semenov, 1908: 259; Lameere, 1912a: 241; Casey, 1912: 244; Lameere, 1913: 77 (cat.); 1919: 138; Bradley, 1919: 419; Linsley *et al.*, 1961: 7 (distr.); Chemsak *et al.*, 1992: 20 (checklist); Linsley & Chemsak, 1997: 424 (host); Barbour *et al.*, 2011: 590.

Prionus (*Prionus*) *heroicus*; Casey, 1924: 212; Linsley, 1957: 8 (syn.); Linsley, 1962: 45 (females); Skiles, 1978: 412 (biology); Monné & Giesbert, 1994: 15 (checklist); Monné, 1995: 52 (cat.); Chemsak, 1996: 109 (females); Heffern, 1998: 6 (distr.); Monné & Hovore, 2005: 20 (checklist); 2006: 19 (checklist); Özdikmen & Turgut, 2009: 411; Bezark & Monné, 2013: 27 (checklist).

Prionus (*Prionus) vastus* Casey, 1912: 236, 245; 1924: 213; Lameere, 1919: 138; Linsley, 1957: 8 (syn.); Lingafelter *et al.*, 2014: 342 (type).

Prionus (*Prionus*) *tristis* Casey, 1912: 236, 244 **(Part: only paralectotype female)**; 1924: 212; Lameere, 1919: 138; Linsley, 1957: 8 (syn.); Lingafelter *et al.*, 2014: 336 (type).

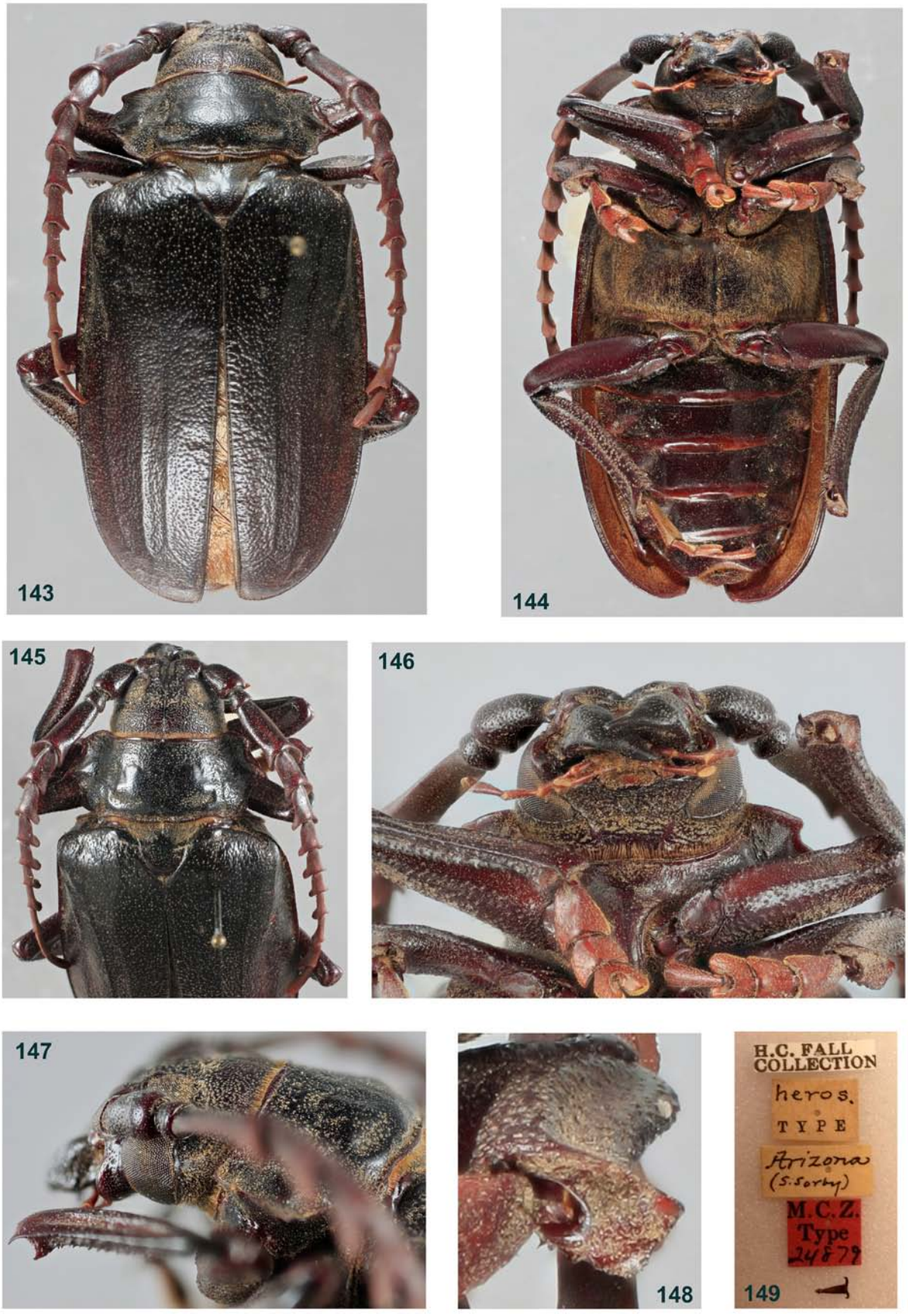
Prionus (*Prionus*) *tetricus* Casey, 1912: 237; 1924: 212; Lameere, 1919: 138; Linsley, 1957: 9 (syn.); Lingafelter *et al.*, 2014: 332 (type).

Prionus tetricus; Alexander, 1958: 49 (distr.).

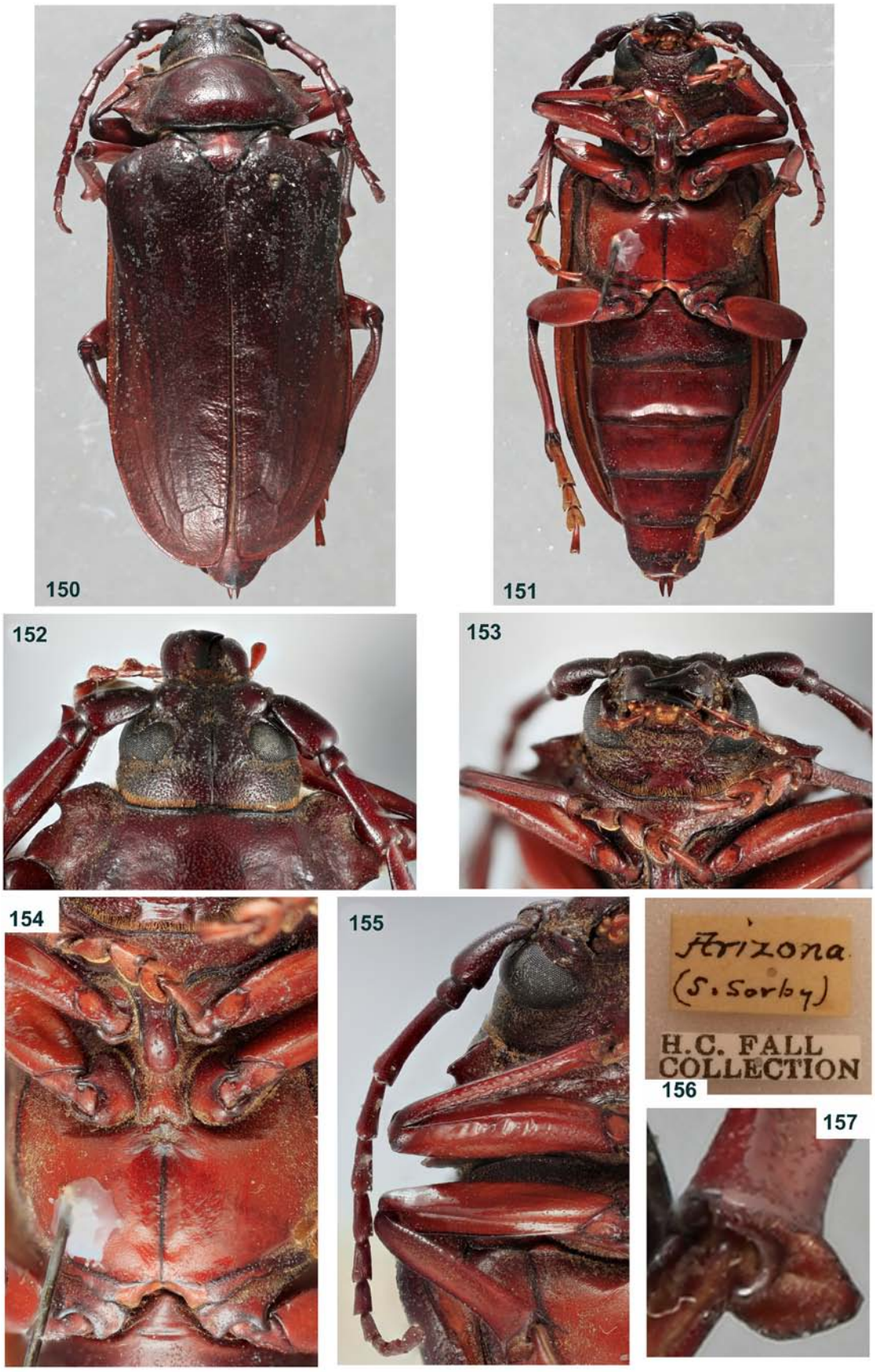
Male (Figs. 143–148). Integument blackish; scape and pedicel reddish dark-brown; antennomeres lighter from III to XII; ventrites dark-brown, with apex of ventrites I–IV reddish; femora and tibiae more reddish; tarsi reddish.

Head, excluding mandibles, about as long at central area as prothorax, notably elongate behind eyes (distance from posterior ocular edge to the prothorax 1.5 times as long as length of upper eye lobe). Longitudinal dorsal furrow distinct from clypeus to prothoracic edge. Area between antennal tubercles and middle of eyes deeply sulcate, coarsely, confluently punctate. Central area between posterior ocular edge and prothorax coarsely, abundantly punctate (punctures smaller than between eyes). Area behind upper eye lobes coarsely, confluently punctate (punctures smaller than between eyes). Area behind lower eye lobes with short, moderately abundant setae. Antennal tubercles coarsely, abundantly punctate on base, gradually sparsely punctate toward apex. Eyes proportionally large; distance between upper eye lobes 0.8 times length of scape; distance between lower eye lobes 1.2 times length of scape. Submentum trapezoid, punctate-vermiculate. Genae moderately finely, abundantly punctate. Antennae with 12 segments; attaining about distal one-third of elytra. Scape nearly attaining posterior ocular edge; moderately coarsely, abundantly punctate on base, gradually finer, sparser toward apex. Antennomere III 1.3 times longer than scape dorsally, distinctly enlarged toward apex (distal width equal to about 1.8 times basal width); on dorsal view, imbrication distinct, but not very projected; on ventral view, apex of imbrication somewhat emarginate; finely, sparsely punctate dorsally. Antennomere IV about as long as 0.7 times III; moderately finely punctate dorsally, more densely on base; imbrication dorsally as in III; in ventral view apical emargination deeper than in III. Antennomeres V–XI with imbrication as in IV. Antennomere XII slightly longer than XI; not appendiculate or partially divided.

Maximum prothoracic width 0.9 times elytral base; anterolateral angle slightly projected forward, rounded toward first lateral tooth; first lateral tooth small, rounded at apex, placed close to anterolateral angle; second lateral tooth large, acute at apex, slightly projected backwards, placed about middle of margin; margin between second tooth and posterolateral angle slightly concave; posterolateral angle obtuse, rounded at apex; basal margin sinuous; distal margin slightly sinuous centrally. Pronotum convex, distinctly explanate laterally; callosities distinct; disc moderately coarsely abundantly punctate centrally, coarsely, densely punctate laterally; glabrous. Prosternum moderately coarsely, abundantly punctate laterally, gradually sparser toward center; with moderately long, sparse setae. Prosternal process slightly narrowed centrally. Elytra moderately coarsely, abundantly punctate; each elytron with three distinct carinae, fused near apex; sutural spine absent. Metasternum about as long as ventrites I–II together; finely, abundantly punctate, less so centrally; with long, dense setae throughout (centrally sparser). Metepisterna with sculpture and setae as on sides of metasternum.



FIGURES 143–149. *Prionus heroicus*, lectotype male: **143**, dorsal habitus; **144**, ventral habitus; **145**, head, dorsal view; **146**, head, ventral view; **147**, head, lateral view; **148**, apex of mesotibiae; **149**, labels.



FIGURES 150–157. *Prionus heroicus*, paralectotype female: **150**, dorsal habitus; **151**, ventral habitus; **152**, head, dorsal view; **153**, head, ventral view; **154**, metasternum; **155**, head, lateral view; **156**, labels; **157**, apex of mesotibiae.

Ventrites I–IV finely sparsely punctate centrally; with distinct setae laterally; distal margin of ventrite V distinctly concave. Apex of meso- and metatibiae not spined, truncate (Fig. 148). Pro- and mesotarsomeres I–III wide; metatarsomere I moderately narrow, elongate.

Female (Figs. 150–155, 157). Dorsal side dark-brown; ventral side and legs mostly reddish-brown; antennae dark-brown, gradually reddish toward apex. Head, excluding mandibles, about as long at middle as prothorax. Sculpture on dorsal surface of head and area behind eyes similar to that in male, except for punctures between eyes smaller and sparser. Distance between upper eye lobes slightly shorter than length of scape; distance between lower eye lobes 1.2 times length of scape. Submentum as in male. Antennae with 12 segments, apex nearly reaching basal one-third of elytra. Scape more slender than in male, slightly surpassing posterior ocular edge. Antennomere III 1.2 times longer than scape; antennomeres III–XI without distinct imbrication, distinctly projected at outer distal side only after VII. Prothorax as in male. Metasternum only pubescent laterally. Metepisterna pubescent. Apex of meso- and metatibiae as in male.

Dimensions in mm (male/female). Total length (including mandibles), 42.0/48.8; prothoracic length at center, 6.5/7.5; greatest prothoracic width, 15.5/18.0; humeral width, 18.0/20.0; elytral length, 32.0/35.5.

Geographical distribution. USA [Arizona (Fall, 1905), New Mexico (Casey 1912), Colorado (Chemsak 1996].

Type, type locality. Of *Prionus heros* (Figs. 143–157): Description based on a couple specimens from USA (Arizona), deposited at MCZ.

To maintain the stability of the species, we designated as the lectotype the male specimen (Figs. 143–148) with the following labels (Fig. 149):

White (Printed): H. C. FALL COLLECTION
White (Handwritten): heros / TYPE
White (Handwritten): Arizona / (S. Sorby)
Red: M.C.Z. (Printed) / Type (Printed) / 24879 (Handwritten)
Red and yellow (Printed; added by us): LECTOTYPE / *Prionus heroicus* (= *P. heros*)

Of *Prionus* (*Prionus) vastus*: Holotype female from USA (Arizona), deposited at USNM. Figured at Lingafelter *et al.* (2016).

Of *Prionus* (*Prionus*) *tetricus* (Figs. 172): Holotype female from USA (New Mexico), deposited at USNM. Figured at Lingafelter *et al.* (2016).

Of *Prionus* (*Prionus*) *tristis* (only female paralectotype (Figs. 177–178)). Syntypes from USA (New Mexico), deposited at USNM. Lingafelter *et al.* (2014) recorded: ***tristis* Casey, 1912**: 236 (Fig. 173q, r), Holotype. However, according to Casey (1912): "Length (♂) 29.0, (♀) 46.0–47.0 mm.; width (♂) 11.8, (♀) 18.0–18.2 mm.; length of prothorax (♀) 6.25 mm.; width of head (♀) 8.3–8.8 mm. Thus, there is no holotype because Casey (1912) did not designate one and he had at least three specimens (one male and two females). The female syntype figured at Lingafelter *et al.* (2016) as holotype of *P.* (*P.*) *tristis* belongs to *P.* (*P.*) *californicus*. As *P.* (*P.*) *tristis* encompasses two species, we are herein designating as Lectotype the specimen figured by Lingafelter *et al.* (2014), and figuring the ventral side of this specimen (Fig. 176). The specimen has the following labels:

White (Printed): N. M
White (Handwritten): tristis Casey
Red: TYPE USNM (Printed) / 36426 (Handwritten)
Red and yellow (Printed; added by us): LECTOTYPE / *Prionus tristis* (= *P. californicus*)

Material examined. All types were examined.

Remarks. Lameere (1919), in doubt, indicated the following synonyms with *P. heroicus*: *Prionus* (*Prionus*) *tumidus*; *P.* (*P.*) *vastus*; *P.* (*P.*) *tristis*; *P.* (*P.*) *alutaceus*; and *P.* (*P.*) *tetricus*. Casey (1924) did not comment on Lameere's doubts, and considered all them as distinct from *P. heroicus*. Linsley (1957) formalized the synonyms indicated by Lameere (1919), but excluded *Prionus* (*Prionus*) *alutaceus* (considered a synonym of *P. californicus*), and added *Prionus* (*Prionus*) *fontinalis*, a species not mentioned by Lameere (1919).

According to Linsley (1957): "Casey had no specimens in his collection identified as this species [*P. heroicus*].

His six examples, all females…" This statement encompasses two mistakes: *P.* (*P.*) *fontinalis* was described based on a single male; and Casey (1912, 1924) listed seven specimens: 1 female of *P.* (*P.*) *tumidus*; 1 female of *P.* (*P.*) *vastus*; 1 male and 2 females of *P.* (*P.*) *tristis*; 1 female of *P.* (*P.*) *tetricus*; 1 male of *P.* (*P.*) *fontinalis*.

According to Linsley (1962) and Chemsak (1996), in the key: "antennae with external processes well developed"—leading to *P. californicus*; and "antennae with external processes moderate"—leading to *P. heroicus*. However, in the male lectotype of *P. heroicus*, the processes are very similar to many specimens of *P. californicus*, in which this feature is highly variable. The color, another feature used by those authors to differentiate these species, is also highly variable in *P. californicus*.

Males of *Prionus heroicus* differ from those of *P. californicus* by the apex of meso- and metatibiae not spined at dorsal margin. Females of the former differ from the latter by the metasternum with distinct pubescence only laterally (usually throughout in *P. californicus*), and by the apex of meso- and metatibiae as in male.

Prionus (*Prionus*) *vastus* and *P.* (*P.*) *tetricus* (Fig. 172) are kept in synonymy with *P.* (*Prionus*) *heroicus*, mainly by the shape of tibiae apex and by the metasternum centrally glabrous.

The redescription above was based on the male lectotype and female paralectotype of *Prionus heroicus*.

Apparently, the types of *P. heroicus* were not examined by Linsley (1962) and Chemsak (1996). Fall (1905) made clear a character that was not taken into account by those authors: the robust form of the body. The general appearance of the lectotype of *P. heroicus* is much more similar to *P. laticollis* than to *P. californicus*.

Linsley (1957) synonymized *P.* (*P.*) *tristis* with *P.* (*P.*) *heroicus*. However, the lectotype female and paralectotype male (the latter could not be located) belong to *P.* (*P.*) *californicus*, because the apex of meso- and metatibiae are as in that species. Notwithstanding, we believe that the paralectotype female (Figs. 177–178) is a true *P.* (*P.*) *heroicus*, because the apex of meso- and metatibiae clearly agrees with the paralectotype of *P.* (*P.*) *heroicus*.

***Prionus* (*Prionus*) *californicus* Motschulsky, 1845**

(Figs. 111–113, 158–171, 173–176, 183)

Prionus californicus Motschulsky, 1845: 89; LeConte, 1852a: 177; Melsheimer, 1853: 100 (cat.); LeConte, 1857: 23 (distr.); 1866: 349 (distr.); Lacordaire, 1868: 61 (note); Gemminger & Harold, 1872: 2757 (cat.); Horn, 1872: 390 (distr.); Snow, 1883: 42 (distr.); Leng, 1884: 57, 58; Rivers, 1886: 64 (biology); Blanchard, 1887: 86; Wickham, 1890: 34 (distr.); Osborn, 1890: 324 (biology); Townsend, 1892: 38; Blaisdell, 1892: 34 (host); Bates, 1892: 144 (distr.); Hamilton, 1894: 30 (distr.); Townsend, 1895: 46 (distr.); Beutenmüller, 1896: 74 (host); Wickham, 1897: 167 (host); Harrington, 1899: 107 (distr.); Wickham, 1899: 123 (distr.); Daggett, 1901: 319 (biology); Fall, 1901: 142 (distr.); Snow, 1906a: 170 (distr.); 1906b: 179 (distr.); Fall & Cockerell, 1907: 191 (distr.); Schaeffer, 1908: 329 (distr.); Lameere, 1912a: 242; 1913: 77 (cat.); Essig, 1915: 251 (biology); Craighead, 1915: 20 (larva); Garnett, 1918: 173 (distr.); Lameere, 1919: 138; Craighead, 1923: 29 (pupa); Essig, 1926: 449 (biology); Tanner, 1927: 33; Hardy & Preece, 1927: 187 (host); Tanner, 1928: 277 (distr.); Crawford & Eyer, 1928: 3 (biology); Knowlton, 1930: 56; Pack, 1930: 219 (distr.); Beaulne, 1932: 219 (host); Barret, 1932:289 (host); Herrick, 1935: 274 (biology); Knowlton & Thatcher, 1936: 278; Doane *et al.*, 1936: 164 (biology); Moore, 1937: 87 (distr.); Quayle, 1938: 319 (biology); Linsley, 1938: 105 (*syn.*); 1942: 26 (distr.); Hardy, 1942: 10 (biology); Leech, 1947: 141 (biology); Schuh & Mote, 1948: 103 (biology); Balazuc, 1948: 170 (teratology); Knowlton & Wood, 1950: 10 (distr.); Craighead, 1950: 262 (biology); Jaques, 1951: 251; DeLeon, 1952: 80 (host); Keen, 1952: 193 (host); Leech, 1955: 52 (biology); Nishio, 1956: 241; Linsley, 1957: 6 (*syn.*); Papp, 1959: 85; Linsley *et al.*, 1961: 5 (distr.); Tyson, 1970: 298 (distr.); Swan & Papp, 1972: 441; Tanner & Tanner, 1974: 220 (distr.); Kirk & Balsbaugh, 1975: 96 (distr.); Hovore & Giesbert, 1976: 350 (etology); Furniss & Carolin, 1977: 289 (host); Lewis, 1979: 22 (distr.); Bishop *et al.*, 1984: 20–24 (biology); Mackay *et al.*, 1987: 363 (distr.); Hovore, 1988: 3 (distr.); Chemsak *et al.*, 1992: 20 (checklist); Noguera & Chemsak, 1996: 396 (distr.); Linsley & Chemsak, 1997: 424 (host); Hanks, 1999: 485, 487 (biology); Weissmann & Kondratieff, 1999: 74 (distr.); Monné, 2002: 23 (host); Barbour *et al.*, 2006: 623; Swiecki & Bernhardt, 2006: 66; Rodstein *et al.*, 2009: 590; Maki *et al.*, 2011: 714; Barbour *et al.*, 2011: 588–592; Rodstein *et al.*, 2011: 114; Hart *et al.*, 2013: 134, 139 (distr.).

Prionus Californicus; Mannerheim, 1852: 364 (distr.); White, 1853: 16; LeConte, 1876: 519, 520 (distr.).

Prionus (*Prionus*) *californicus*; Casey, 1912: 242; Casey, 1924: 216; Linsley, 1962: 41; Hatch, 1971: 93; Monné & Giesbert, 1994: 14 (checklist); Monné, 1995: 50 (cat.); Chemsak, 1996: 106; Heffern, 1998: 6 (distr.); Monné & Hovore, 2005: 19 (checklist); 2006: 18 (checklist); Monné, 2006: 84 (cat.); Özdikmen & Turgut, 2009: 410; Bezark & Monné, 2013: 27 (checklist); Monné, 2015: 173 (cat.).

Prionus pocularis; Lord, 1866: 311 (error of identification).

Prionus crassicornis LeConte, 1852a: 108; White, 1853: 17; Melsheimer, 1853: 100 (cat.); LeConte, 1857: 23 (*syn.*); Lacordaire, 1868: 61 (note); Linsley (1938): 105 (*syn.*).

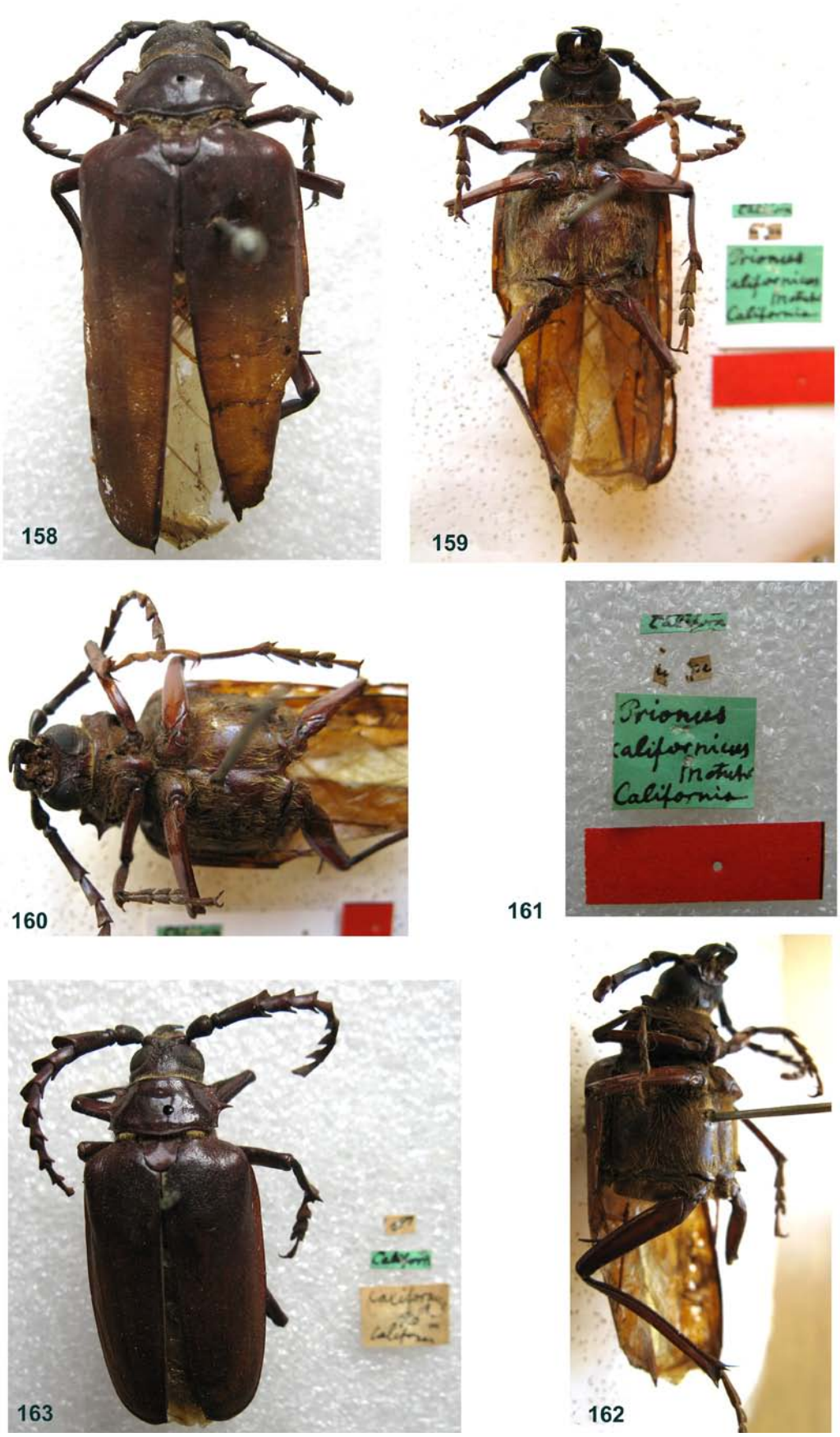
Prionus (*Prionus*) *crassicornis* Casey, 1924: 216 (reval.).
Prionus curvatus LeConte, 1859a: 19; Lacordaire, 1868: 61; Gemminger & Harold, 1872: 2757 (cat.); Lameere, 1912a: 242 (*syn*.); Leng, 1920: 266 (reval.); Leng, 1927: 39; Alexander, 1958: 49 (reval.); Linsley, 1962: 43 (*syn*.).
Prionus (*Prionus*) *curvatus*; Casey, 1912: 240; 1924: 17 (reval.).
Prionus californicus var. *curvatus*; Crotch, 1873: 83; 1880: 83.
Prionus horni Lameere, 1912a: 243; Lameere, 1913: 77 (cat.); 1919: 138; Linsley, 1935: 161; 1942: 26; 1957: 7; 1962: 43 (*syn*.); Damoiseau & Cools, 1987: 33 (type).
Prionus (*Prionus*) *angustulus* Casey, 1912: 241; Lameere, 1919: 138 (*syn*. in doubt); Linsley, 1957: 6 (*syn*.); Lingafelter *et al.*, 2014: 17 (type).
Prionus (*Prionus*) *ineptus angustulus*; Casey, 1924: 220 (reval.).
Prionus (*Prionus*) *fissifrons* Casey, 1912: 243; Lameere, 1919: 138 (*syn*. in doubt); Leng, 1920: 266 (cat.; *syn*.); Casey, 1924: 220 (reval.); Linsley, 1957: 7 (*syn*.); Lingafelter *et al.*, 2014: 63 (type).
Prionus (*Prionus*) *spiculosus fissifrons*; Casey, 1924: 218.
Prionus (*Prionus*) *terminalis* Casey, 1912: 244, 245; Lameere, 1919: 138 (*syn*. in doubt); Leng, 1920: 266 (cat.; *syn*.); Casey, 1924: 220 (reval.); Linsley, 1957: 7 (*syn*.); Lingafelter *et al.*, 2014: 331 (type).
Prionus (*Prionus*) *californicus ineptus* Casey, 1912: 242; Lingafelter *et al.*, 2014: 35 (type).
Prionus (Prionus) ineptus; Lameere, 1919: 138 (*syn*. in doubt); Casey, 1924: 219 (reval.).
Prionus ineptis [*sic*]; Linsley, 1938: 105 (syn.).
Prionus ineptus; Leng, 1920: 266 (cat.; *syn*.).
Prionus (*Prionus*) *texanus* Casey, 1912: 243; Lameere, 1919: 138 (*syn*. in doubt); Leng, 1920: 266 (cat.; *syn*.); Casey, 1924: 214 (reval.); Linsley, 1957: 7 (*syn*.); Lingafelter *et al.*, 2014: 332 (type).
Prionus (*Prionus*) *ineptus ambiguus* Casey, 1924: 219; Linsley, 1957: 7 (*syn*.); Lingafelter *et al.*, 2014: 80 (type).
Prionus (*Prionus*) *ambiguus*; Leng, 1927: 40 (cat.).
Prionus (*Prionus*) *ineptus uintanus* Casey, 1924: 220; Linsley, 1957: 7 (*syn*.); Lingafelter *et al.*, 2014: 80 (type).
Prionus (*Prionus*) *uintanus*; Leng, 1927: 40 (cat.).
Prionus (*Prionus*) *nanus* Casey, 1924: 222; Linsley, 1957: 7 (*syn*.); Lingafelter *et al.*, 2014: 103 (type).
Prionus (*Prionus*) *nanus*; Leng, 1927: 40 (cat.).
Prionus (*Prionus*) *spaldingi* Casey, 1924: 221; Linsley, 1957: 7 (*syn*.); Lingafelter *et al.*, 2014: 322 (type).
Prionus (*Prionus*) *spaldingi*; Leng, 1927: 40 (cat.).
Prionus (*Prionus*) *stultus* Casey, 1924: 221; Linsley, 1957: 7 (*syn*.); Lingafelter *et al.*, 2014: 326 (type).
Prionus (*Prionus*) *stultus*; Leng, 1927: 40 (cat.).
Prionus (*Prionus*) *stultus parvicollis* Casey, 1924: 221; Linsley, 1957: 7 (*syn*.); Lingafelter *et al.*, 2014: 327 (type).
Prionus (*Prionus*) *parvicollis*; Leng, 1927: 40 (cat.).
Prionus (*Prionus*) *humeralis* Casey, 1924: 216; Leng, 1927: 40; Lingafelter *et al.*, 2014: 77 (type).
Prionus humeralis; Linsley, 1938: 105 (syn.).
Prionus (*Prionus*) *consors* Casey, 1912: 240; Casey, 1924: 214 (reval.); Linsley, 1957: 6 (*syn*.); Lingafelter *et al.*, 2014: 44 (type).
Prionus consors; Lameere, 1919: 138 (*syn*. in doubt); Leng, 1920: 266 (transf. of *syn*.).
Prionus (*Prionus*) *consors acomanus* Casey, 1912: 241; Linsley, 1957: 6 (*syn*.); Lingafelter *et al.*, 2014: 44 (type).
Prionus (*Prionus*) *acomanus*; Casey, 1924: 218 (reval. as distinct species).
Prionus acomanus; Lameere, 1919: 138 (*syn*. in doubt); Leng, 1920: 266 (transf. of *syn*.).
Prionus (*Prionus*) *consors proximans* Casey, 1912: 241; Linsley, 1957: 6 (*syn*.); Lingafelter *et al.*, 2014: 45 (type).
Prionus (*Prionus*) *acomanus proximans*; Casey, 1924: 218 (reval.).
Prionus proximans; Lameere, 1919: 138 (*syn*. in doubt); Leng, 1920: 266 (transf. of *syn*.).
Prionus (*Prionus*) *alutaceus* Casey, 1912: 237; Casey, 1924: 216 (reval.); Linsley, 1957: 6 (*syn*.); Lingafelter *et al.*, 2014: 14 (type).
Prionus alutaceus; Lameere, 1919: 138 (*syn*. in doubt with *P. heroicus*).
Prionus (*Prionus*) *suspectus* Casey, 1924: 215; Leng, 1927: 40; Linsley, 1957: 7 (*syn*.); Lingafelter *et al.*, 2014: 330 (type).
Prionus (*Prionus*) *californicus ovipennis* Casey, 1924: 217; Linsley, 1957: 7 (*syn*.); Lingafelter *et al.*, 2014: 35 (type).
Prionus (*Prionus*) *ovipennis*; Leng, 1927: 40.
Prionus (Prionus) californicus punctulatus Casey, 1912: 243; Linsley, 1957: 7 (transf. of *syn*.); Lingafelter *et al.*, 2014: 35 (type).
Prionus punctulatus; Lameere, 1919: 138 (*syn*. in doubt); Leng, 1920: 266 (transf. of *syn*.).
Prionus (*Prionus*) *scutellaris* Casey, 1924: 219; Leng, 1927: 40; Linsley, 1957: 7 (*syn*.); Lingafelter *et al.*, 2014: 316 (type).
Prionus (*Prionus*) *spiculosus* Casey, 1912: 240; Casey, 1924: 217 (reval.); Linsley, 1957: 6 (*syn*.); Lingafelter *et al.*, 2014: 322 (type).
Prionus spiculosus; Lameere, 1919: 138 (*syn*. in doubt); Leng, 1920: 266 (transf. of *syn*.).
Prionus (*Prionus*) *spiculosus coloradensis* Casey, 1924: 218; Linsley, 1957: 7 (*syn*.); Lingafelter *et al.*, 2014: 322 (type).
Prionus (*Prionus*) *coloradensis*; Leng, 1927: 40.
Prionus (*Prionus*) *serriger* Casey, 1924: 215; Leng, 1927: 40; Linsley, 1957: 7 (*syn*.); Lingafelter *et al.*, 2014: 318 (type).
Prionus (*Prionus*) *californicus compar* Casey, 1924: 217; Linsley, 1957: 7 (*syn*.); Lingafelter *et al.*, 2014: 35 (lectotype).

Prionus (*Prionus*) *compar*; Leng, 1927: 40.
Prionus (*Prionus*) *orbiceps* Casey, 1924: 216; Leng, 1927: 40; Linsley, 1957: 7 (*syn.*); Lingafelter *et al.*, 2014: 35 (type).
Prionus (*Prionus*) *solidus* Casey, 1912: 238; Casey, 1924: 215; Linsley, 1957: 6 (syn.); Lameere, 1919: 138; Lingafelter *et al.*, 2014: 321 (type).
Prionus (*Prionus*) *tristis* Casey, 1912: 236, 244 **(Part: only lectotype female and paralectotype male)**; 1924: 212; Lameere, 1919: 138; Linsley, 1957: 8 (syn.); Lingafelter *et al.*, 2014: 336 (type). ***Syn. nov.***
Prionus (*Prionus*) *heroicus*; Linsley, 1962: 45 (males); Chemsak, 1996: 109 (males).
Prionus (*Prionus*) *validiceps* Casey, 1912: 235, 245; 1924: 214; Linsley, 1957: 8 (syn.); Lingafelter *et al.*, 2014: 339 (type). ***Syn. nov.***
Prionus (*Prionus*) *tumidus* Casey, 1912: 235, 245; 1924: 213; Lameere, 1919: 138; Linsley, 1957: 8 (syn.); Lingafelter *et al.*, 2014: 337 (type). ***Syn. nov.***
Prionus (*Prionus*) *fontinalis* Casey, 1924: 221; Lameere, 1919: 138; Linsley, 1957: 9 (syn.); Lingafelter *et al.*, 2014: 65 (type). ***Syn. nov.***

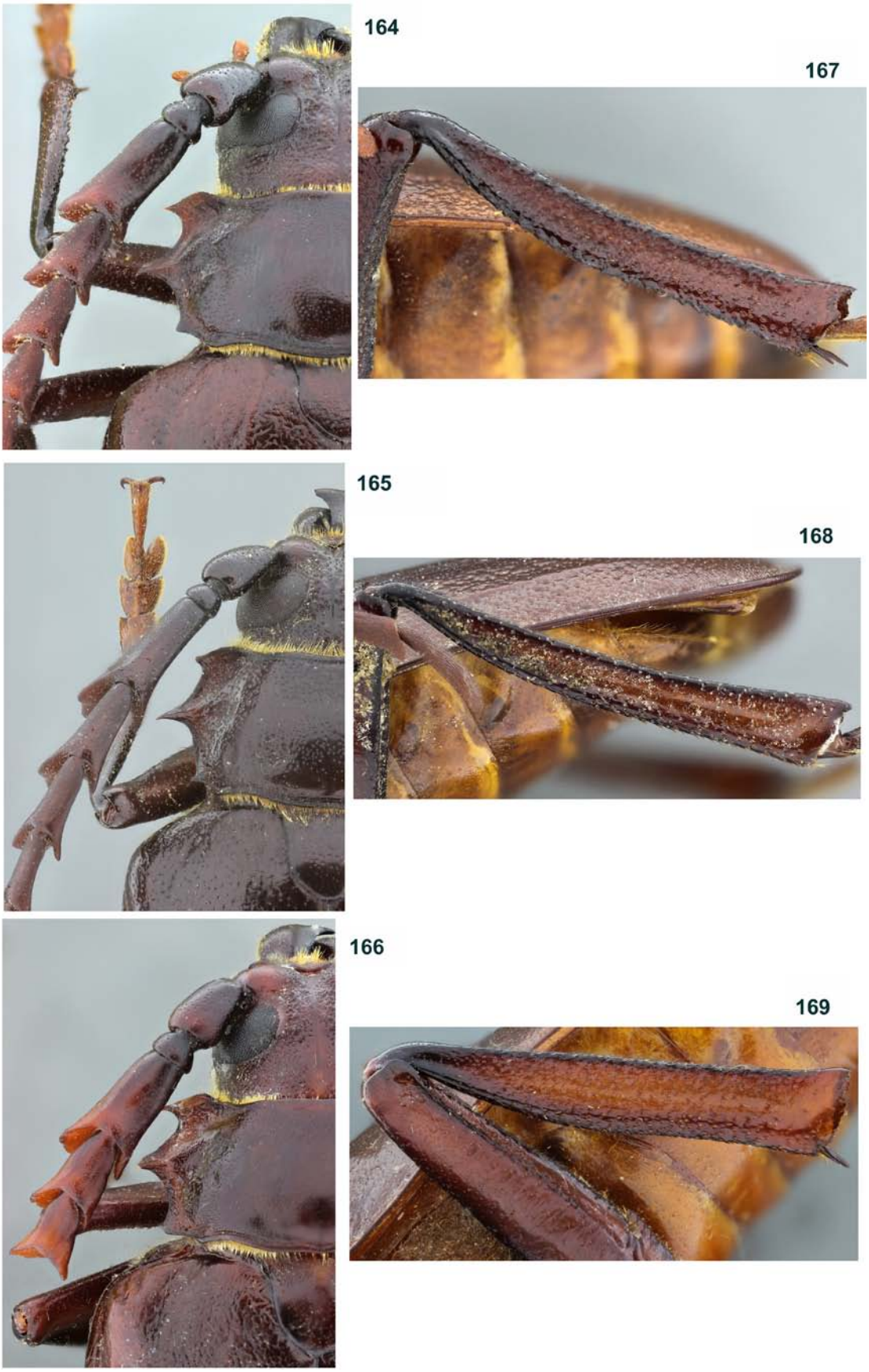
Note. For redescription of male we are using a specimen of the most common form of the species: eyes large, elytra parallel-sided, metatibiae narrow and elongate (see below). As the current concept of the species is highly variable, we are listing the most common variations after the redescription.

Male (Figs. 163–169, 173, 174, 183). Integument reddish-brown, except for: mandibles, most of head, scape, pedicel, part of antennomere III, dorsal surface of femora, inferior margins of femora, base and margins of tibiae, and sternite margins of meso- and metathorax dark-brown to black; base of elytra somewhat darker than remaining surface; metathoracic sternites and abdominal ventrites orange; antennomeres lighter from III to XII. Head, excluding mandibles, about as long as prothorax at central area, slightly elongate behind eyes (distance from posterior ocular edge to the prothorax equal to 0.45 times length of upper eye lobe). Longitudinal dorsal furrow distinct from clypeus to near anterior margin of prothorax, less conspicuous between eyes and prothorax. Frons short, smooth, shining, glabrous. Area on each side of longitudinal furrow, between antennal tubercles and middle of eyes, deeply sulcate, coarsely, sparsely punctate between antennal tubercles, confluently punctate between eyes. Area close to ocular carinae coarsely, confluently punctate, with short, sparse setae. Vertex coarsely, abundantly punctate close to eyes and toward sides, gradually finely, sparsely punctate toward central area close to prothorax; with very short, moderately sparse setae at center, gradually longer toward and behind eyes. Area behind upper eye lobes moderately coarsely, abundantly punctate (punctures coarser toward eye); with short, moderately sparse setae. Area behind lower eye lobes finely rugose, with short, moderately sparse setae near prothorax, with brush of moderately short setae close to eye. Antennal tubercles at base narrowly separated; coarsely, densely punctate at base, finely, sparsely punctate toward apex which is smooth. Postclypeus narrow, moderately finely, abundantly punctate laterally, gradually sparser toward center; with short, moderately abundant setae laterally, gradually sparser toward center. Anteclypeus shining, glabrous, impunctate. Labrum with very long, abundant setae. Eyes moderately large; upper eye lobes wide (about wide as 0.65 times length of scape); distance between upper eye lobes 0.5 times length of scape; distance between lower eye lobes 0.60 times length of scape; distance between posterior ocular edge to prothorax 0.6 times width of upper eye lobe. Submentum trapezoid, slightly depressed, rugose, with short, sparse setae (narrower or wider depending on distance between lower eye lobes); anterior edge distinctly carinate. Apex of labial palpi nearly attaining apex of maxillary palpomere III. Antennae with 12 segments; nearly attaining base of distal one-third of elytra. Scape not attaining posterior ocular edge; moderately enlarged toward apex; moderately finely, abundantly punctate dorsally. Antennomere III 1.15 times as long as scape dorsally, distinctly enlarged toward apex (distal width 2.1 times basal width); on dorsal view, imbrication distinct, projected; on ventral view imbrication with two distinct lobes centrally, separated by deep emargination, with outermost largest, at level of carina not emarginated, finely, sparsely punctate dorsally on basal three-fourths, microsculptured on distal one-fourth. Remaining antennomeres dorsally microsculptured. Antennomere IV 0.65 times as long as III. Imbrication of antennomeres IV–XI as in III, but typically with emargination of outermost lobe distinct.

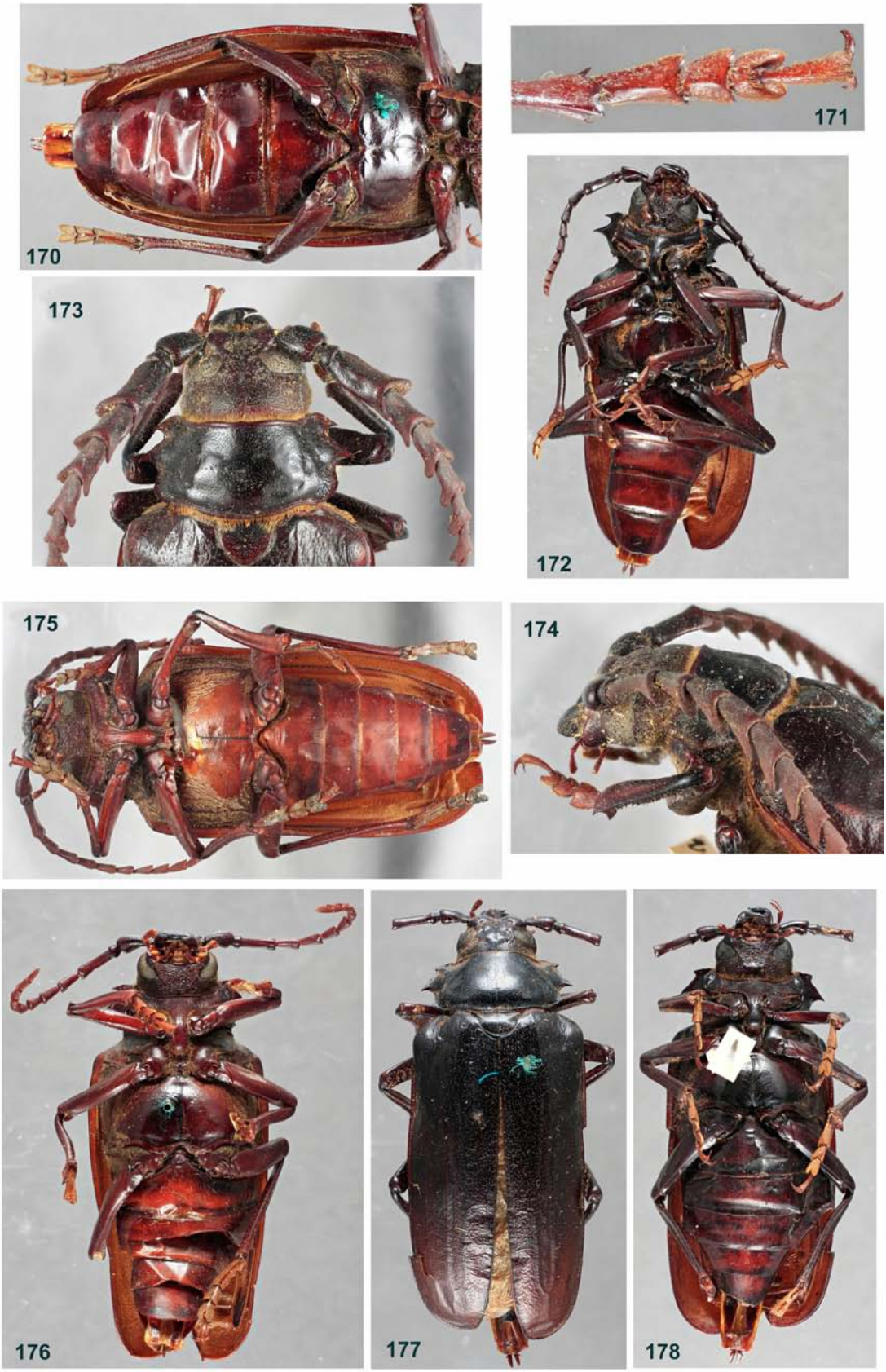
Maximum prothoracic width about 0.85 times as wide as elytral base; anterolateral angle spined (spine long), anterior margin slightly rounded; lateral spine very long, projected backwards; posterolateral angle acute, projected. Pronotum somewhat flat centrally; disc finely, moderately abundantly punctate, distinctly coarser, denser laterally; with sparse, long setae laterally. Prosternum finely, abundantly punctate, somewhat rugose laterally; with long, moderately dense setae. Elytra finely, abundantly punctate; each elytron with three carinae; sutural apex with short spine.



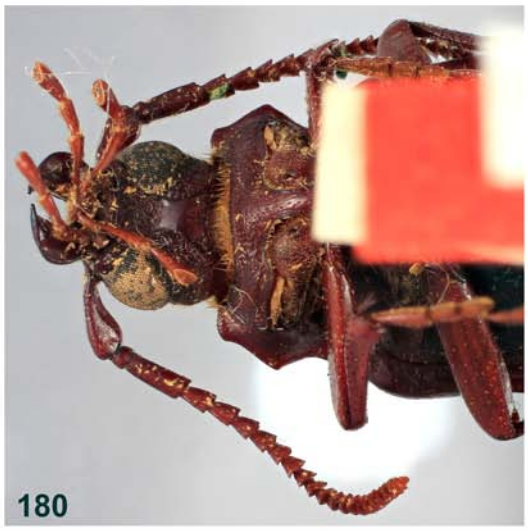
FIGURES 158–163. *Prionus californicus*: **158–162**, lectotype female**: 158**, dorsal habitus; **159**, ventral habitus; **160**, detail, ventral habitus; **161**, labels; **162**, lateral habitus. **163**, male from Motschulsky's collection. Photographs by Aleksey Gusakov.



FIGURES 164–169. *Prionus* (*Prionus*) *californicus*, variation in male: **164–166**, basal antennomeres; **167–169**, metatibiae, lateral view.



FIGURES 170–178. **170–171**, *Prionus* (*Prionus*) *tumidus*, holotype female: **170**, metasternum; **171**, apex of mesotibia and mesotarsus. **172**, *Prionus* (*Prionus*) *tetricus*, holotype female, ventral habitus. **173–174**, *Prionus* (*Prionus*) *validiceps*, holotype male: **173**, head, dorsal view; **174**, head, lateral view. **175**, *Prionus* (*Prionus*) *solidus*, holotype female, ventral habitus. **176–178**, *Prionus* (*Prionus*) *tristis*: **176**, lectotype female, ventral habitus; **177**, paralectotype female, dorsal habitus; **178**, paralectotype female ventral habitus.



FIGURES 179–183. **179–180**, *Prionus* (*Antennalia*) *fissicornis parviceps*, holotype female: **179**, head, fronto-lateral view; **180**, head and antennae, ventral view. **181**, *Prionus* (*Antennalia*) *thoracicus*, holotype female, head and antennae. **182**, *Prionus* (*Antennalia*) *fissicornis transversus*, holotype female, ventral habitus. **183**, *Prionus* (*Prionus*) *fontinalis*, holotype male, head, dorsal view.

Ventrites finely, moderately abundantly punctate; with moderately short, sparse setae (notably denser on basal center of I). Pro- and mesotarsomeres I–II acute at apex; apex of lobes of metatarsomere III with short, distinct spine.

Female (Figs. 111–113, 158–160, 162, 170-171, 175–176). Integument variable as in male. Head, excluding mandibles, slightly shorter than prothorax at middle. Dorsal sculpture of face on head and area behind eyes finer, sparser than in male. Distance between upper eye lobes 0.65 times length of scape; distance between lower eye lobes 0.65 times length of scape. Submentum as in male. Antennae with 12 segments, nearly reaching middle of elytra; scape distinctly slenderer than in male, not attaining posterior ocular edge; antennomere III 1.35 times as long as scape; imbrication of antennomeres III–XI distinct dorsally at outer side, especially after V. Prothorax as in male; pronotal sculpture as in male. Metasternum and metepisterna with, abundant, long setae throughout.

Variations. Male: body primarily dark-brown to black except; head from reddish-brown to black; elytra

mostly orangish-brown; meso- and metathoracic sternites mostly dark-brown; abdominal sternites mostly dark-brown with apex from orange to brown; head at central area from 1.0 to 1.2 times as long as prothorax; head from slightly elongate behind eyes to clearly elongate (distance from posterior ocular edge to prothorax from 0.45 to 1.2 times length of upper eye lobe); frons moderately large; longitudinal dorsal furrow distinct from clypeus to anterior margin of prothorax; Area on each side of longitudinal furrow, between antennal tubercles and middle of eyes, from deeply to slightly sulcate, from moderately coarsely to distinctly coarsely punctate, with punctures between antennal tubercles sparse to abundant, confluently punctate or not between eyes; sculpture on vertex variable, but usually finer and sparser toward center; center of vertex glabrous; antennal tubercles close at base; upper eye lobes from 0.50 to 0.65 times as wide as length of scape; distance between upper eye lobes from 0.50 to 0.75 times length of scape; distance between lower eye lobes from 0.60 to 1.30 times length of scape; distance between posterior ocular edge to prothorax from 0.6 to 1.5 times width of upper eye lobe; antennae attaining base at distal one-fourth of elytra; scape ending from near middle of upper eye lobe to posterior ocular edge; scape slightly enlarged toward apex; punctures on dorsal surface of scape sparse; antennomere III dorsally from 1.15 to 1.40 times as long as scape; distal width of scape from 1.80 to 2.35 times basal width; lobes of imbrication of antennomere III highly variable in size; lobes of imbrication of antennomere III separated by emargination with variable appearance (from almost "V-like" to distinctly wider and shallower; outermost lobe of imbrication of antennomere III at level of carina from not to distinctly emarginated; punctures on dorsal surface of antennomere III present throughout; dorsal side of antennomere IV not totally microsculptured; antennomere IV from 0.60 to 0.75 times length of III; maximum prothoracic width from 0.85 to 0.95 times elytral base; spine of anterolateral angle of prothorax long, with anterior margin from straight to slightly rounded; posterolateral angle of prothorax from acute to obtuse, projected or not; center of pronotal disc with punctures from moderately sparse to abundant, but always fine; sutural elytral apex projected; apex of lobes of metatarsomere III with short, distinct spine on both lobes, or only one lobe, or absent in both lobes. Female: head, excluding mandibles, as long as prothorax at middle; dorsal sculpture on face of head and area behind eyes as in male; distance between upper eye lobes from 0.65 to 0.75 times length of scape; distance between lower eye lobes from 0.65 to 0.85 times length of scape; scape not distinctly slenderer than in male; antennomere III from 1.35 to 1.40 times length of scape; metasternum glabrous or nearly so centrally.

Dimensions in mm (male/female). Total length (including mandibles), 24.2–49.2/36.0–49.0; prothoracic length at center, 3.3–6.0/5.2–7.3; widest prothoracic width, 8.9–15.0/12.1–15.0; humeral width, 9.6–17.5/13.1–18.3; elytral length, 18.5–35.7/27.2–37.6.

Geographical distribution. Canada [British Columbia (Hardy & Preece 1927)], USA [Alaska (Motschulsky 1845), Washington (Jyne 1880), Oregon (LeConte, 1851), Idaho (Wickham 1897), Montana (Chemsak 1996), California (Motschulsky 1845), Nevada (Horn 1872), Wyoming (Linsley 1962), Utah (Casey 1924), Colorado (Hamilton 1894), South Dakota (Chemsak 1996), Nebraska (Chemsak 1996), North Dakota (Heffern 1998), Arizona (Townsend 1895), New Mexico (LeConte 1859), Texas (Casey 1912), Arkansas (Heffern 1998), Oklahoma (Alexander 1958), Georgia (**new state record)**], Mexico [Sonora (Bates 1892), Barra California (Linsley 1942)].

Type, type locality. Of *Prionus californicus*: Description based on an unspecified number of specimens, male and female, from California (USA) and Sitka (at that time, Russia, currently Alaska, USA). The species has been recorded as being described based on a single specimen [*e.g.* Linsley (1962), Monné (1995), and Chemsak (1996)]. However, it is clear that the species was described based on more than one specimen. According to Motschulsky (1845) [translation]: "This species is from Sitka and northern California and must not be confused with the species of North America, quoted in the catalog of Comte Dejean [*Prionus brevicornis* Fabricius, 1801]." Currently, there are two specimens identified as *Prionus californicus* in ZMUM, from ex-Collection Motschulsky: one male, without type label; and a female, with type label. Both are from California. According to Mikhail Danilevsky (pers. comm.), a big number of Motschusky's types were destroyed or lost. As the male specimen deposited at ZMUM lacks a type label, it is not possible to be sure if it is part of the original description. To maintain the stability of the species, we designate as lectotype the female specimen (Figs. 158–160, 162) with the following labels (Fig. 161):

Green (Handwritten): Californ [California]
White (Handwritten): Type
Green (Handwritten): Prionus californicus / Motschs [Motschulsky] / California

Red: without letters
Red and yellow (Printed; added by us): LECTOTYPE / *Prionus californicus*

Of *Prionus crassicornis*: Description based on at least one male and one female from USA (Oregon), deposited at MCZ. Figured at http://www.mcz.harvard.edu/

Of *Prionus curvatus*: holotype female from USA (New Mexico, Santa Fé), deposited at MCZ. Figured at http://www.mcz.harvard.edu/

Of *Prionus horni* (Fig. 111–113): One male and two females from USA (Arizona, Prescott). A couple deposited at NHMW, and a female at IRSN.

Of *Prionus* (*Prionus*) *angustulus*: Holotype male from USA (Arizona, Cañon of the Colorado River), deposited at USNM. Lectotype figured at Lingafelter *et al.* (2016).

Of *Prionus* (*Prionus*) *fissifrons*: Holotype male from USA (Arizona), deposited at USNM. Figured at Lingafelter *et al.* (2016).

Of *Prionus* (*Prionus*) *terminalis*: Holotype male from USA (Arizona, Cañon of the Colorado), deposited at USNM. Figured at Lingafelter *et al.* (2016).

Of *Prionus* (*Prionus*) *californicus ineptus*: Holotype male from USA (California), deposited at USNM. Figured at Lingafelter *et al.* (2016).

Of *Prionus* (*Prionus*) *texanus*: Holotype male from USA (Texas, near El Paso), deposited at USNM. Figured at Lingafelter *et al.* (2016).

Of *Prionus* (*Prionus*) *ineptus ambiguus*: Seven syntypes males from USA (Utah, Eureka), deposited at USNM. Lingafelter *et al.* (2014) designated lectotype. Lectotype figured at Lingafelter *et al.* (2016).

Of *Prionus* (*Prionus*) *ineptus uintanus*: Description based on at least one male and one female, from USA (Utah, North Fork, Provo Cañon), deposited at USNM. Lingafelter *et al.* (2014) designated a male as lectotype. Lectotype figured at Lingafelter *et al.* (2016).

Of *Prionus* (*Prionus*) *nanus*: Holotype male from USA (Utah, Eureka), deposited at USNM. Figured at Lingafelter *et al.* (2016).

Of *Prionus* (*Prionus*) *spaldingi*: 13 syntypes (7 males e 6 females) from USA (Utah, Eureka; Colorado, Bounder County). Lingafelter *et al.* (2014) designated a male as lectotype. The type locality is now Eureka in Utah. Lectotype figured at Lingafelter *et al.* (2016).

Of *Prionus* (*Prionus*) *stultus stultus*: Three syntypes (male and female, number of each sex unknown) from the United States (Utah, Eureka), deposited at USNM. Lingafelter *et al.* (2014) designated lectotype. Lectotype figured at Lingafelter *et al.* (2016).

Of *Prionus* (*Prionus*) *stultus parvicollis*: Holotype male from USA (Utah, Eureka), deposited at USNM. Figured at Lingafelter *et al.* (2016).

Of *Prionus* (*Prionus*) *consors*: Syntypes (males and females) from USA (Colorado), deposited at USNM. Lingafelter *et al.* (2014) recorded: ***consors* Casey, 1912**: 240 (Fig. 46q, r), Holotype. However, according to Casey (1912): "Length (♂) 34.0–39.5, (♀) 37.0–43.0 mm.; width (♂) 14.5–16.2, (♀) 13.8–17.0 mm.; length and width of prothorax (♂, ♀) 5.5 X 10.0 mm.; width of head (♂) 6.8–7.5, (♀) 6.0–6.8 mm. Colorado (Boulder Co.). Abundant. Male syntype figured at Lingafelter *et al.* (2016).

Of *Prionus* (*Prionus*) *acomanus*: Holotype female from USA (New Mexico), deposited at USNM. Figured at Lingafelter *et al.* (2016).

Of *Prionus* (*Prionus*) *consors proximans*: Holotype female from USA (New Mexico), deposited at USNM. Figured at Lingafelter *et al.* (2016).

Of *Prionus* (*Prionus*) *alutaceus*: Holotype male from USA (Arizona), deposited at USNM. Figured at Lingafelter *et al.* (2016).

Of *Prionus* (*Prionus*) *suspectus*: Holotype male from USA (Utah), deposited at USNM. Figured at Lingafelter *et al.* (2016).

Of *Prionus* (*Prionus*) *californicus ovipennis*: Holotype male from USA (Utah), deposited at USNM. Figured at Lingafelter *et al.* (2016).

Of *Prionus* (*Prionus*) *scutellaris*: Holotype female from USA (Utah), deposited at USNM. Figured at Lingafelter *et al.* (2016).

Of *Prionus* (*Prionus*) *spiculosus*: Holotype female from USA (Arizona), deposited at USNM. Figured at Lingafelter *et al.* (2016).

Of *Prionus* (*Prionus*) *spiculosus coloradensis*: Holotype male from USA (Colorado), deposited at USNM. Figured at Lingafelter *et al.* (2016).

Of *Prionus* (*Prionus*) *serriger*: Holotype male from USA (Utah), deposited at USNM. Figured at Lingafelter *et al.* (2016).

Of *Prionus* (*Prionus*) *compar*: Syntypes male from USA (Utah), deposited at USNM. Lingafelter *et al.* (2014) designated lectotype. Lectotype figured at Lingafelter *et al.* (2016).

Of *Prionus* (*Prionus*) *orbiceps*: Holotype male from USA (Utah), deposited at USNM. Figured at Lingafelter *et al.* (2016).

Of *Prionus* (*Prionus*) *validiceps* (Figs. 173–174): Holotype male from USA ("A single example without indication of locality"), deposited at USNM. Figured at Lingafelter *et al.* (2016).

Of *Prionus* (*Prionus*) *tumidus* (Fig. 170–171): Holotype female from USA (New Mexico), deposited at USNM. Figured at Lingafelter et al. (2016).

Of *Prionus* (*Prionus*) *solidus* (Fig. 175): Holotype female from USA (Colorado), deposited at USNM. Figured at Lingafelter *et al.* (2016).

Of *Prionus* (*Prionus*) *tristis* (Fig. 176). See types of *Prionus* (*Prionus*) *tristis* in *P.* (*P.*) *heroicus*.

Of *Prionus* (*Prionus*) *fontinalis* (Fig. 183): Holotype male from USA (New Mexico), deposited at USNM. Figured at Lingafelter *et al.* (2016).

Material examined. All types deposited at USNM were examined. USA, *Texas*: Fort Davis (Jeff Davis County), 1 male, 26.VI.1965, A. & M.E. Blanchard col. (ESSIG); The Woodlands (Montgomery County), 1 male, 10–18.VI.1977, Wappes col. (MZSP); 1 female, 15.VI.1978, Wappes col. (MZSP). *Georgia*: Dekalb County, 1 male, 2.VII.1971 (no collector indicated) (MZSP). *Arizona*: Cochise County, 2 males, Huachuca Mountains, Carr Canyon, Streit, 8/4/1993 (ENPC); 7 males, Chiricahua Mtns, North Fork, 31˚58.265N, 109˚18.299W, 1781 m, 23-VII-2009, MV light, N.P. Lord collector (ENPC); 2 males, same except: Pine Canyon, 31˚56.895N, 109˚20.495W, 1798 m, 22-VII-2009, MV light, N.P. Lord collector (ENPC); Cave Creek Canyon (Cochise County), 1 male , 15.VII.1960, J. M. Linsley col. (MZSP); 1 male, 20–25.VII.2012, Wappes & King col. (MZSP); Hualapai Mountains (Mohave County), 1 male, 3.VII.1976, Cope col. (MZSP); 1 male, 2.VIII.1993, Okeefe col. (ESSIG); Portal, 1 male, 1.VII.1963, Raske col. (MZSP); 1 male, 9.VII.1963, Raske col. (MZSP); 5 miles SW Portal female, 25.VII.1960, J. M. Linsely col. (MZSP); Madera Canyon (Santa Cruz County), 1 female, 30.VI.1988, Stackwell col. (ESSIG); up Madera Canyon (Madera, 5,600', 31º42'38"N / 110º52'32"W), 1 male, 18–19.VII.2012, Wappes & King col. (MZSP); Chiricahua Mountains, 1 male, 9.VII.1959, D.J. & J.N. Knull col. (MZSP); 1 male, 16.VII.1959, D.J. & J.N. Knull col. (MZSP); 2 males, 30.VII.1959, D.J. & J.N. Knull col. (MZSP); M., 1 male, 15.VII.1961, D.J. & J.N. Knull col. (MZSP). *California*: San Bernardino Co., 2 females, San Gabriel Mtns., 2,000 m, Wrightwood, at light, Beierl, 8/25/1987 (ENPC); Berkeley, 1 male, 5.VII.1931, McClay col. (MZSP); Big Bear Valley (San Bernardino County), 1 female, 12.IX.1967, Stone col. (ESSIG); Big Creek Reserve (University of California Natural Reserve System; Monterey County), 1 male, 6–8.VII.1992, Powell col. (ESSIG); Del Puerto Canyon (Stanislaus County; 1,200'; Frank Raines Park), 1 female, 19.V.1972, Rogers col. (ESSIG); 1 male, 19.V.1972, Kuba col. (ESSIG); (900–1200'), 1 male, 6.VI.1970, Bentzien col. (ESSIG); 1 male, 6.VI.1970, Schlinger col. (ESSIG); Fallsdale (San Bernardino County), 1 female, 21.VII.1956, Johnson col. (ESSIG); Blodgett Forest Research Station (El Dorado County, 13 miles E Georgewtown), 1 male, 5.VIII.1988, Lindgren col. (ESSIG); Hat Creek (Shasta County, USFS Work Center), 1 male, VII.1991, Tupy col. (ESSIG); 1 female, 23.VII.1991, Tupy col. (ESSIG); Hemet (Riverside County), 1 male, 13.V.1972, Fleming col. (ESSIG); Kernville (Kern County), 1 male, 1 female, 17.VI.1965, Johnson col. (ESSIG); Kilkare Woods (Alameda County), 1 male, VII.1921, Hagen col. (ESSIG); Lone Pine (Owens Valley, Inyo County), 1 male, 8.VI.1937, Johnson col. (ESSIG); Lytle Creek (San Bernardino County), 1 male, 19.VII.1934, Johnson col. (ESSIG); 1 male, 13.VIII.1934, Johnson col. (ESSIG); Miami Creek (Madera County, 4500'), 1 male, 20.VII.1968, O'Brien col. (ESSIG); Mount Saint Helena, 2 males, V.1930, Linsley col. (MZSP); Oak Glen (Riverside County), 1 male, 6.VII.1965, Johnson col. (ESSIG); Oak Knoll Campground (Lake Henshaw, San Diego County), 1 female, VII.1971, Orsak col. (ESSIG); Orinda (Contra Costa County), 1 male, 16.VII.1985, Hart col. (ESSIG); Pine Cove (Riverside County, 6100', San Jacinto Mountains), 2 males, 17.VIII.1986, Brown col. (ESSIG); Placerville, 1 male, 10.IX.1937, (no collector indicated) (ESSIG); San Jose, 1 female, 28.VII.1958, Mewaldt col. (ESSIG); San Mateo, 1 male, 23.VII.1952, DeNoble col. (ESSIG); Sequoia National Park, 1 male, 15.VII.1972, Whitman col. (ESSIG); (Whitakers Forest), 1 male, 24.VII.1974, Whitman col. (ESSIG); Ventura, 1 male, 23.VI.1941, Stone col. (ESSIG); Waddell (Santa Cruz

County), 1 female, 10.VII.1930 (MZSP); Wildrose, 1 male, VII.1935, Johnson col. (ESSIG); Yosemite National Park, 1 female, 4.II.1934 (no collector indicated) (MZSP). *New Mexico*: Sandoval County, 1 male, Valles Caldera Nat. Pres., Redondo Mdws, 8100 ft. elev., @ UV & MV light, 35˚51.70N, 106˚36.17W, Nearns & Lingafelter 13-VII-2007 (ENPC); Las Cruces, 5 males, 1 female, 30.VI.1941, Dawson col. (ESSIG). *Nevada*: Leidy Creek (Esmeralda County, 6200'), 1 male, 7.VII.1965, Bechtel col. (ESSIG); McIntyre Summit (Nye County, 6940'), 1 male, 23.VII.1964, Bechtel col. (ESSIG); Peavine Canyon (Nye County, 6300'), 1 male, 9.VIII.1966, Cooney col. (ESSIG); Peavine Ranch (Nye County), 5 males, 1 female, 29.VII.1964, Cooney col. (ESSIG); Silver Springs (Lyon County), 1 male, 25.VI.1966, Cooney col. (ESSIG); 5 miles W Hot Creek Ranch (Nye County), 1 male, 23.VII.1964, Bechtel col. (ESSIG). *Washington*: Friday Harbor, 1 male, 7.VIII.1939, Dawson col. (ESSIG). *Utah*: Castle Valley (Grand County, 1550 m), 1 male, 12–14.VII.1993, Powell col. (ESSIG). *Colorado*: Hesperus, 1 female, 28.VIII.1948, Dawson col. (ESSIG). MEXICO, *Sonora*: Rancho Los Alisos, 9.4 km WSW Aconchi, 29º79'83"N / 110º31'97"W, 3 males, 1–2.VII.2013, T. Van Devender col. (ACMT).

Remarks. Linsley (1942) wrote: "This species has not been previously recorded from Lower California. Three males were taken by Michelbacher and Ross, one of which differs in having thirteen segmented antennae, the last segment of the maxillary palpi widest at the middle, the tarsi more slender, and the elytra rougher. Thus this specimen is even more extreme than the form to which Lameere gave the name *Prionus hornii* [sic]. Although the antennae are thirteen segmented, the form is not at all like *P. lecontei* Lameere, from California, which is larger and has very long antennal processes. However, practically all of the forms (species, subspecies, varieties?) which have been named from the *californicus* complex are based upon males, and until females can be definitely associated with them their status cannot be satisfactorily determined. In the opinion of the present writer they will probably prove to be no more than individual variants of a single plastic species." We cannot be sure without examination of the specimen, but we believe that the specimen with 13-segmented antennae is *P. mexicanus*, a species very similar in general appearance to *P. californicus*.

The first author who synonymized *P. crassicornis* with *P. californicus* was LeConte (1857). This synonymy was apparently lost and not mentioned in the more recent catalogues (*e.g.* Monné, 1995). LeConte (1859a) also confirmed this synonym: "Resembles nearly *P. californicus* Motsch. (*crassicornis* Lec.), but…"

Later, Casey (1924), without any explanation, revalidated *P. crassicornis*. After this, Linsley (1938) was the first who considered the former as a synonym of the latter. We agree with the synonymy proposed by Linsley (1938).

Crotch (1873) considered *P. curvatus* as a variety of *P. californicus*. This nomenclatural act does not appear in recent catalogues (*e.g.* Monné, 1995). *Prionus curvatus* was synonymized with *P. californicus* by Lameere (1912). Casey (1912) considered the former as distinct from *P. californicus*. Leng (1920) listed *P. curvatus* as a valid species, and considered as its synonyms: *P.* (*P.*) *spiculosus*; *P.* (*P.*) *consors*; *P.* (*P.*) *acomanus*; *P.* (*P.*) *proximans*; *P.* (*P.*) *angustulus*; *P.* (*P.*) *horni*; *P.* (*P.*) *ineptus*; *P.* (*P.*) *punctulatus*; *P.* (*P.*) *fissifrons*; *P.* (*P.*) *texanus*; *P.* (*P.*) *terminalis*. All those synonyms were not observed in the recent catalogues, and many of them are wrongly attributed exclusively to Linsley (1938, 1957), including Linsley himself. Later, Casey (1924), again ignoring Lameere's works (1912, 1913, 1919), also considered *P. curvatus* as a distinct species. Alexander (1958) considered *P. curvatus* as a valid species. Later, Linsley (1962) once again put *P. curvatus* under synonymy with *P. californicus*.

Linsley (1935) wrote on *P. horni*: "I have a number of *Prionus* from southern Arizona which agree with Lameere's description of *P. horni*. These differ from *californicus* only in their slightly smaller average size and in having the twelfth segment of the antennae appendiculate and longer than the penultimate segment. It seems probable that these are no more than a subspecies of *P. californicus*." Linsley (1942) still did not formalize the synonym of *P. horni*: "…Thus this specimen [of *P. californicus* from Baja California] is even more extreme than the form to which Lameere gave the name *Prionus hornii* [*sic*]." The same position was maintained in Linsley (1957): "*Prionus horni* Lameere also appears to me to be based on a variation of infrequent occurrence. It has been taken with the typical form at Prescott, Arizona, and elsewhere." It was only in 1962 that Linsley listed *P. horni* as a synonym of *P. californicus*. We also examined specimens with the twelfth antennomere more or less divided, but as mentioned by Linsley (1935, 1942, 1957) they are just variations of *P. californicus*. It should be noted that the synonymy between *P. horni* and *P. californicus* was proposed by Leng (1920).

Casey (1924) ignored the synonymies by Lameere (1919) and Leng (1920), and considered: *Prionus* (*Prionus*) *angustulus* as a subspecies of *P.* (*P.*) *ineptus*; *P.* (*P.*) *fissifrons* as subspecies of *P.* (*P.*) *spiculosus*; *P.* (*P.*) *ineptus* as a species different from *P. californicus*.

Leng (1927) commented on the species described by Lameere and Casey: "This genus [*Prionus*] has been reviewed by Lameere in 1919 and by Casey in 1924 with contradictory results. Lameere considers lecontei Lmr. valid, curvatus Lec. a synonym / horni Lmr. valid / debilis Csy. a synonym / simplex Csy. doubtful / pubicollis Csy. doubtful / debiliceps Csy. doubtful. Casey affirms the validity of the species he described in 1912…"; and "In view of wide difference of opinion [between Lameere and Casey], especially as to 14087 [*Prionus curvatus* in Leng (1920)], no number is assigned to any of the above [the species described by Casey (1924)]."

Apparently, there are at least three groups of specimens within what is currently accepted as *Prionus californicus*. It is possible that *Prionus californicus* is a complex of species that we are unable to separate. The groups of specimens can only be recognized in males. Group 1: eyes large, not notably apart from each other dorsally and ventrally, elytra parallel-sided, metatibiae (Fig. 168) narrow and long; Group 2: eyes small, narrow, notably apart from each other, elytra narrowed toward apex, metatibiae (Fig. 169) wider, not clearly elongate; Group 3: eyes as group 1, metatibiae as group 2, elytra variable. These variations are not geographically isolated, nor related to the size of specimen or specimen color. Other highly variable features are: size and shape of prothorax, pubescence of prosternum, and shape of apex of antennomere III. Linsley (1962) separated *P. californicus* from *P. heroicus* (males) based on the shape of pronotum (narrow in *P. californicus*; very broad in *P. heroicus*), shape of antennomeres (antennae with external processes well developed in *P. californicus*; antennae with external processes moderate in *P. heroicus*), and color (reddish-brown to piceous-brown in *P. californicus*; piceous to black in *P. heroicus*). However, as seen above, all these features are variable in *P. californicus*. For example, we examined brownish specimens with external processes of antennae slightly projected as well as very projected; brownish specimens with prothorax very wide as well as distinctly narrower; blackish specimens with prosternum having very sparse setae, or distinctly abundant. Linsley (1962), for *P. heroicus*, also recorded: "posterior tarsi with lobes of third segment angulate at apex but not spinose". However, we examined specimens distinctly blackish with both lobes almost rounded at apex (not spined), with distinct spine at apex of outer lobe and unarmed at apex of inner lobe, as well as with a spine at apex of both lobes.

In his synonymy of several species described by Casey (1912, 1924) with *P. californicus*¸ Linsley (1957) recorded "After studying a long series of specimens of *Prionus californicus* from various localities in western North America, I have been unable to recognize any of the numerous forms described by Casey as anything but individual variants." However, some of this same variation also occurs in males redescribed by Linsley as *Prionus heroicus*. Linsley (1957) also did not comment on the kind of variations he found in *P. californicus*.

We consider males of *P. heroicus sensu* Linsley (1962) as *P. californicus*. We do not know if Linsley (1962) examined females of *P. heroicus*, but as the description of the metasternum and number of antennomeres agree with the original description, we believe that females of *P. heroicus sensu* Linsley (1962) correspond to that species.

As seen above, the "external processes" of antennae in *P. californicus* is variable. Chemsak (1996) used the same features as Linsley (1962) to separate *P. californicus* from *P. heroicus*. That author also illustrated the basal antennomeres of both species to show the difference in the "external processes". However, any of the blackish specimens studied by us have the antennomeres as in his figure of "*P. heroicus*". Even the holotype male of *P. heroicus* has the "external processes" the same as his figure. Thus, we consider males of *P. heroicus sensu* Chemsak (1996) as *P. californicus*, and the females as *P. heroicus*.

Females of *P. californicus* also show considerable variation in the pubescence of the metasternum: long and dense throughout; distinctly sparser centrally than laterally; moderately short and dense laterally, with central area glabrous.

Linsley (1957) synonymized *Prionus* (*Prionus*) *validiceps* Casey, 1912 with *Prionus pocularis* Dalman, 1817. Examination of the holotype of the former revealed that the eyes are notably different from that in the latter. *Prionus* (*P.*) *validiceps* is one of the several forms found in *P.* (*P.*) *californicus*. Thus, we propose the transfer of *P.* (*P.*) *validiceps* from synonymy with *P.* (*P.*) *pocularis* to synonymy with *P.* (*P.*) *californicus*.

Linsley (1957) synonymized *Prionus* (*Prionus*) *tumidus* Casey, 1912 with *P.* (*P.*) *heroicus* Semenov, 1907. Apparently, the synonymy was based on the pubescence of the metasternum (centrally absent). However, we examined specimens of *P.* (*P.*) *californicus* with the same variation. Furthermore, the apex of meso- and metatibiae is spined at the dorsal margin, as occurs in *P.* (*P.*) *californicus*, while in *P.* (*P.*) *heroicus* the apex is truncate.

Linsley (1957) synonymized *Prionus* (*Prionus*) *fontinalis* Casey, 1924 with *P.* (*P.*) *heroicus*. In our opinion, *Prionus* (*Prionus*) *fontinalis* is just a dark male of *P.* (*P.*) *californicus*.

Regarding *P.* (*P.*) *tristis*, see remarks under *P.* (*P.*) *heroicus*.

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