

An Illustrated Checklist  
of the American Crayfishes  
(Decapoda: Astacidae, Cambaridae,  
and Parastacidae)

*Horton H. Hobbs, Jr.*

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## ABSTRACT

Horton H. Hobbs, Jr. An Illustrated Checklist of the American Crayfishes (Decapoda: Astacidae, Cambaridae, and Parastacidae). *Smithsonian Contributions to Zoology*, number 480, 236 pages, 379 figures, 1989.—This alphabetical list consists of the names of all of the American crayfishes, including two fossil species, that were described prior to 1 January 1988. In the treatment accorded each specific or subspecific taxon there is a synonymy citing alterations in generic and subgeneric assignments, erroneous spellings, and synonyms. References are also made to recent descriptions, discussions, and keys. The composition and locations of type series are cited, as are the type locality, range, and habitat of each. Nomina nuda that have been neither validated nor synonymized with other crayfish taxa, together with two names suppressed by the International Commission on Zoological Nomenclature, are listed separately. Comparable illustrations, which are arranged in related species groups, are presented for each of the 379 recognized extant species and subspecies. Appendix 1 provides an alphabetical list of American crayfishes and the countries, states, and/or provinces in which they live. Appendix 2 consists of an alphabetical list of American countries and states, or provinces, and their crayfish faunas; also cited are references to studies that pertain either directly to them or which should be helpful in studies of them. Appendix 3 includes information comparable to that in the main body of the checklist on crayfishes described during 1988 and 1989.

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# An Illustrated Checklist of the American Crayfishes (Decapoda: Astacidae, Cambaridae, and Parastacidae)

*Horton H. Hobbs, Jr.*

## Introduction

With the realization that some seventy-odd species had been described since the appearance of the most recent checklist of the North and Middle American crayfishes (Hobbs, 1974b), that a revision of the genus *Cambarellus* had been completed by Fitzpatrick (1983a), and that a similar undertaking by him treating the genus *Orconectes* was in progress, it seemed appropriate that preparation begin on updating the 1974 checklist. Soon after the project was initiated, it became obvious that numerous modifications in the synonymies would be essential; to the best of my knowledge, aided by the assistance of those recognized in the "Acknowledgments" section, such emendations and additions have been included.

Although Bahamonde (1951, 1958) and Holthuis (1956) helped immeasurably in elucidating the nature of the parastacid fauna of Chile, and Buckup and Rossi (1980) ably reviewed the parastacids of Brazil and Uruguay, the only comprehensive summary of the crayfishes of South America since Faxon's (1914) compilation was that of Riek (1971). This work constituted an important contribution, particularly in pointing out the distinct nature of the two Chilean stocks, but it lacked the benefit of the information provided in the study of Buckup and Rossi in which species that had been declared synonyms by Riek were resurrected and a previously unknown one was described. With these additions to our knowledge of the South American crayfish fauna, it seemed appropriate that the revised checklist be expanded to encompass the American parastacids. Unfortunately, unavailable at this time is a review of the Chilean crayfish fauna by Dr. Ludwig Buckup, which is in press.

All of the American crayfishes (including two fossil species)

that were described prior to 1 January 1987 are believed to be accounted for in the following list. While those few species that have been described since that date do not appear in the list, combinations involving older names have been updated to 1 October 1987, and all new taxa that have come to my attention as of 1 January 1989 are included in Appendix 3.

The format of the 1974 checklist has been followed to the extent possible. Thus a list of collections containing type specimens of American crayfishes is followed by a brief historical summary of nomenclatural changes affecting the supraspecific taxa embracing these American crayfishes, and appended to it is a list of those taxa adopted herein. Preceding the alphabetical list of species the nomina nuda that have been neither validated nor associated with an established crayfish taxon are cited as are those names that have been suppressed by the International Commission on Zoological Nomenclature. For each of the specific or subspecific taxa listed, a synonymy is provided in which are included alterations in generic and subgeneric assignments, erroneous spellings, and synonyms; in only rare instances are references to misidentifications listed. Citations are also made to recent descriptions, discussions, illustrations, and keys. The locations of the type series are pointed out, and, where possible, the sexes of the syntypes and primary types (holotype, allotype, and morphotype) are noted. In instances in which the type designations included a holotypic male, form I, and a "paratypic male, form II" (the latter clearly separated from the remainder of the paratypic series), the paratypic male has been referred to here as "morphotype," the name enclosed in quotation marks. In citing the types of those taxa for which a morphotype was designated by the describer, the quotation marks are omitted.

The type locality, range, and habitats are cited for each species and subspecies. The designations "primary, secondary, and tertiary burrowers" follow Hobbs (1942b:20): primary burrowers are those largely restricted to burrows; secondary

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burrowers are those that generally occupy burrows but often wander into open water during times when the mouths of the burrows are flooded; and tertiary burrowers are those that burrow "only in periods of drought or occasionally [or usually], but not necessarily, during the breeding season."

To the extent possible, the illustrations, which are arranged in related species groups, are made from types of the species, and the rather few instances in which types were not available, specimens were chosen from, or as close to, the type locality as possible (see "Explanation of Illustrations").

Appendix 1 consists of an alphabetical list of the families, subfamilies, genera, species, and subspecies of the crayfishes occurring in the Americas and the countries and states or provinces in which each occurs. Appendix 2 contains a list of the countries and states or provinces with references to the crayfishes (listed in Appendix 1) that are known or have been reported to occur within their boundaries. Appendix 3 consists of an alphabetical list of American crayfishes described during 1987 and 1988, after this manuscript had been completed.

LOCATION OF TYPES.—The following abbreviations are used for institutional collections and most personal collections in which specimens of one or more type series have been deposited.

Alabama Mus. Nat. Hist.	Alabama Museum of Natural History, Tuscaloosa, Alabama.
AMNH	American Museum of Natural History, New York, New York.
AMS	Australian Museum, Sydney, Australia.
ANSP	Academy of Natural Sciences of Philadelphia, Pennsylvania.
BCPM	British Columbia Provincial Museum, Victoria, British Columbia, Canada.
BMNH	British Museum (Natural History), London, England. (paratypes not listed in Hobbs (1974b) subsequently received in exchange from USNM.)
BSNH	Boston Society of Natural History, Boston, Massachusetts.
Chas. Mus.	Charleston Museum, South Carolina.
CM	Carnegie Museum, Pittsburg, Pennsylvania.
GM	Museum d'Histoire Naturelle, Geneva, Switzerland.
FSM	Florida State Museum, Gainesville, Florida.
FSBC	Bureau of Marine Research, St. Petersburg, Florida.
IBM	Instituto de Biología de la Universidad Nacional Autónoma de México, Mexico City, Mexico.
INHS	Illinois State Laboratory of Natural History, Urbana, Illinois.
La. Polytechnic Inst.	Louisiana Polytechnic Institute, Ruston, Louisiana.
MCZ	Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts.
MHNP	Museum National d'Histoire Naturelle, Paris, France.
MMNH	Mississippi Museum of Natural History, Jackson, Mississippi.
MMZ	Museum of Zoology, University of Michigan, Ann Arbor, Michigan.
MN.UFRJ	Museu Nacional da Universidade Federal do Rio de Janeiro, Brazil.
Mus. Washburn Coll.	Museum of Washburn College, now Department of Biology, Washburn University, Topeka, Kansas.

Mus. Zool. Torino	Instituto e Museo de Zoologia, Della Università di Torino, Italy.
NCSM	North Carolina State Museum of Natural History, Raleigh, North Carolina.
NMV	National Museum of Victoria, Melbourne, Australia.
OSM	Ohio State Museum, Columbus, Ohio.
PM	Peabody Museum of Natural History, Yale University, New Haven, Connecticut.
RNHL	Rijksmuseum van Natuurlijke Historie, Leiden, The Netherlands.
RR	Collection of Rendell Rhoades, Ashland College, Ashland, Ohio (insofar as is known, all of collection has now been deposited in OSM or USNM).
TMM	Texas Memorial Museum, Austin, Texas.
TU	Department of Zoology, Tulane University, New Orleans, Louisiana.
UF	Department of Zoology, University of Florida, Gainesville, Florida (most, if not all of the crayfish types in this collection were transferred to FSBC).
USNM	Collections of former United States National Museum, now in National Museum of Natural History, Smithsonian Institution, Washington, D.C.
UTM	University of Tennessee Museum, Knoxville, Tennessee.
UZM	Universitets Zoologiske Museum, Krystalgade, København Ø, Denmark.
Würzburg Mus.	Würzburg Museum, Würzburg, Germany.
ZBM	Zoologisches Museum der Humboldt-Universität, Berlin, East Germany.
ZIAS	Zoological Institute, Academy of Sciences, Leningrad, U.S.S.R.

In addition, paratypic specimens of a few species have been reported to be in the collections of the following: D.W. Albaugh, address uncertain; Donald Batch, Eastern Kentucky University, Richmond, Kentucky; Joe B. Black, Louisiana College, Pineville, Louisiana; Coe College, Cedar Rapids, Iowa; Troy C. Dorris, Oklahoma State University, Stillwater, Oklahoma; H.H. Hobbs III, Wittenberg University, Springfield, Ohio; Leslie Hubricht, Meridian, Mississippi; Hugo L. James, University of Bridgeport, Bridgeport, Connecticut; Max R. Matteson, University of Illinois, Urbana, Illinois; Ronald D. Oesch, Glendale, Missouri; Joseph F. Pickett, Sr., Jacksonville, Florida; Rudolph Prins, Western Kentucky University, Bowling Green, Kentucky; Rollin D. Reimer, address uncertain; H.W. Robison, Southern Arkansas University, Magnolia, Arkansas; Jerry G. Walls, Hightstown, New Jersey.

Five large crayfish collections—those of the University of Michigan Museum of Zoology, the University of Kansas Museum of Natural History, personal collections of Raymond W. Bouchard, Joseph F. Fitzpatrick, Jr., and the author—have been transferred to the National Museum of Natural History, Smithsonian Institution, and most, if not all, of the paratypic specimens cited by previous authors as having been deposited in those collections are now in the Smithsonian crayfish collection.

BRIEF HISTORY OF THE NOMENCLATURE OF AMERICAN CRAYFISHES.—*North America and Middle America:* Prior to



the publication of the first summary treatment of North American crayfishes by Girard (1852), the eight recognized species were assigned to the genus *Astacus*. Erichson (1846) had proposed the subgenus *Cambarus* to receive the North American species included in his study, and this taxon was elevated to generic rank by Girard (1852) in his revision of the nearctic crayfishes in which 20 species were recognized. With the adoption of the genus *Cambarus* by Hagen (1870) in his "Monograph of the North American Astacidae," in which a clear delineation was made between *Cambarus* (occurring east of the continental divide) and *Astacus* (largely restricted to the western versant) a generic stability became established that remained unchanged until 1933. Faxon (1884) presented the first checklist of holarctic crayfishes and listed 60 North American species. In the following year, his revision of the family Astacidae appeared, but in it he made few changes in the "species groups" that had been proposed by Hagen.

As recounted in my previous checklist (Hobbs, 1974:2-3),

with some reshuffling of species, Ortmann (1905c, 1905d, 1906a) proposed the recognition of six subgenera of *Cambarus*: *Cambarus*, *Bartonius*, *Faxonius*, *Cambarellus*, *Procambarus*, and *Paracambarus*. Fowler (1912), in reviewing the Crustacea of New Jersey, pointed out that Ortmann (1905c) overlooked Faxon's (1898) selection of *Astacus Bartonii* Fabricius as the type species of *Cambarus*. Ortmann had chosen that crayfish as the type species of the subgenus *Bartonius*, and *Astacus Blandingii* Harlan as that of his subgenus *Cambarus*. Thus the name *Bartonius* was shown to be a junior objective synonym of Erichson's *Cambarus*, and *Ortmannicus* was proposed to replace Ortmann's subgenus *Cambarus*.

In his checklist of the crayfishes[,] Faxon (1914) included 110 species and subspecies from North America but recognized no subgenera. An alteration in the generic assignment of the North American crayfishes had its inception with Creaser (1933a) who elevated Ortmann's subgenus *Faxonius* to generic rank. Not until 1942, however, was there a major departure from the generic structure that had been established by Girard (1852) and Hagen (1870).

Creaser (1933b) erected the monotypic subgenus *Faxonella* to receive *Cambarus clypeatus* Hay. This subgenus was questionably accorded generic status by Creaser (1962) and was clearly so treated by Fitzpatrick (1963).

Lyle (1938) designated the subgenus *Girardiella* to encompass Faxon's (1914) Group II.

Hobbs (1942a) proposed the elevation of Ortmann's subgeneric groupings of *Cambarus* to generic rank, recognizing the subfamilies Astacinae and Cambarinae, the latter comprising the following genera: *Cambarus*, *Procambarus* (including Fowler's *Ortmannicus* and Lyle's *Girardiella*), *Orconectes* (= Ortmann's *Faxonius*), *Cambarellus*, *Paracambarus*, and *Troglocambarus*, the latter described as new. *Orconectes* Cope (1872) was considered to be a subjective senior synonym of Ortmann's *Faxonius*.

[Bott (1950), in revising the European crayfishes, proposed the genus *Pacifastacus* to receive the American astacids largely restricted to the Pacific versant of North America, a group that had been assigned previously to the genus *Astacus*].

Villalobos (1955) recognized the Cambaroidinae [comprising the eastern Asiatic crayfishes] as a subfamily of the Astacidae, and Laguarda (1961) designated a fourth subfamily, the Cambarellinae. Fitzpatrick and Payne (1968) added the genus *Hobbsseus*, and Hobbs (1969b), in revising the genus *Cambarus*, proposed the genus *Fallicambarus*. In the latter revision, 10 subgenera of *Cambarus* were recognized. One of them, *Barbicambarus*, was elevated to generic rank by Bouchard (1972a).

In 1972, Hobbs (1972a) recognized 16 subgenera of *Procambarus*, resurrecting the subgenus *Ortmannicus* (Fowler, 1912) and *Girardiella* (Lyle, 1938) and returning *Paracambarus* to subgeneric status in *Procambarus*. Later

in the same year, Hobbs' (1972b) key to most of the crayfishes included [t]herein was made available.

In a synopsis of the families and genera of crayfishes of the world, Hobbs (1974a) proposed a revised structure of the Astacuran infraorder Astacidea in which three superfamilies, Nephropoidea, Parastacoidea, and Astacoidea were recognized and diagnosed. Synonymies and diagnoses were included for the families and genera of the last two. In that study, the subfamily Cambarinae was elevated to familial rank, and the proposal made that, in addition to the nominate subfamily, the Cambaroidinae and Cambarellinae be included within it. The most recent checklist of the North (and Middle) American crayfishes was that of Hobbs (1974b) in which 294 species and subspecies were recognized.

Bouchard and Hobbs (1976) added the monotypic subgenus *Exilicambarus* to the genus *Cambarus*, and Hobbs (1977c) proposed the monotypic genus *Bouchardina* for a disjunct crayfish occurring in southwestern Arkansas. Bouchard (1978b) erected the subgenus *Hobbsastacus* in the genus *Pacifastacus*, and Hobbs (1981) recognized the then monotypic subgenus *Distocambarus* of the genus *Procambarus*. The latter subgenus was elevated to generic rank by Hobbs and Carlson (1983). Hobbs (1983) proposed the subgenus *Fitzcambarus* to receive an apparently disjunct member of the genus.

The genus *Cambarellus* was revised by Fitzpatrick (1983a) who recognized within it three subgenera: *Dirigicambarus* and *Pandicambarus* in addition to the nominate subgenus. The most recent major revision was that of Fitzpatrick (1987a) who proposed the recognition of 10 subgenera in the genus *Orconectes*: *Billecambarus*, *Buannulifictus*, *Crockerinus*, *Faxonius*, *Gremicambarus*, *Hespericambarus*, *Orconectes*, *Procericambarus*, *Rhoadesius*, and *Tragulicambarus*.

*South America*: Of those who described crayfishes occurring in South America, the first five authors (Poeppig, 1835; H. Milne Edwards, 1837; Nicolet, 1849; Martens 1869; and Philippi, 1882, 1894) who described crayfishes occurring on this continent employed the generic name *Astacus*. In a revision of the genus, Erichson (1846) proposed that five subgenera of *Astacus* be recognized, and assigned all of the American crayfishes (including *Astacus* (C.) *Chilensis* H. Milne Edwards, 1837) to the subgenus *Cambarus*; presumably, he was unaware of Poeppig's (1835) description of *A. pugnax*. Herklots (1861), in abstracting the taxa treated by De Haan in his Fauna Japonica, placed the same species in the subgenus *Astacus*. The generic name *Parastacus* Huxley (1879) was not generally applied to the South American crayfishes until Faxon (1898:683) expanded the definition of the genus and presented descriptions of five new species, two of which had been previously described. The only supraspecific change that has been suggested subsequent to the adoption of the generic name *Parastacus* was the proposal of Riek (1971) that two of the species that had been assigned to *Parastacus* be reassigned to a new genus *Samastacus*, establishing the new combinations *S. araucanius* (Faxon, 1914) and *S. spinifrons* (Philippi, 1882).

The most recent study adding or resurrecting taxa was that of Buckup and Rossi (1980).

SYNOPSIS OF AMERICAN ASTACIDEA.—The following structuring of the American Astacidea is modified from the classification of the Astacidea presented by Hobbs (1974a, 1974b).

Infraorder ASTACIDEA

Superfamily NEPHROPOIDEA Dana, 1852 (lobsters and marine allies)

Superfamily ASTACOIDEA Latreille, 1802–1803

Family ASTACIDAE Latreille, 1802–1803

Genus *Pacifastacus* Bott, 1950

Subgenus *Hobbsastacus* Bouchard, 1978b

Subgenus *Pacifastacus* Bott, 1950

Family CAMBARIDAE Hobbs, 1942a

Subfamily CAMBARELLINAE Laguarda, 1961

Genus *Cambarellus* Ortmann, 1905c

Subgenus *Cambarellus* Ortmann, 1905c

Subgenus *Dirigicambarus* Fitzpatrick, 1983a

Subgenus *Pandicambarus* Fitzpatrick, 1983a

Subfamily CAMBARINAE Hobbs, 1942a

Genus *Barbicambarus* Hobbs, 1969b

Genus *Bouchardina* Hobbs, 1977c

Genus *Cambarus* Erichson, 1846

Subgenus *Aviticambarus* Hobbs, 1969b

Subgenus *Cambarus*, Erichson, 1846

Subgenus *Depressicambarus* Hobbs, 1969b

Subgenus *Erebicambarus* Hobbs, 1969b

Subgenus *Exilicambarus* Bouchard and Hobbs, 1976

Subgenus *Hiaticambarus* Hobbs, 1969b

Subgenus *Jugicambarus* Hobbs, 1969b

Subgenus *Lacunicambarus* Hobbs, 1969b

Subgenus *Punciticambarus* Hobbs, 1969b

Subgenus *Veticambarus* Hobbs, 1969b

Genus *Distocambarus* Hobbs, 1981

Subgenus *Distocambarus* Hobbs, 1981

Subgenus *Fitzcambarus* Hobbs, 1983

Genus *Fallicambarus* Hobbs, 1969b

Subgenus *Creaserinus* Hobbs, 1973a

Subgenus *Fallicambarus* Hobbs, 1969b

Genus *Faxonella* Creaser, 1933b

Genus *Hobbseus* Fitzpatrick and Payne, 1968

Genus *Orconectes* Cope, 1872

Subgenus *Billecambarus* Fitzpatrick, 1987a

Subgenus *Buannulifictus* Fitzpatrick, 1987a

Subgenus *Crockerinus* Fitzpatrick, 1987a

Subgenus *Faxonius* Ortmann, 1905c

Subgenus *Gremicambarus* Fitzpatrick, 1987a

Subgenus *Hespericambarus* Fitzpatrick, 1987a

Subgenus *Orconectes* Cope, 1872

Subgenus *Procericambarus* Fitzpatrick, 1987a

Subgenus *Rhoadesius* Fitzpatrick, 1987a

Subgenus *Tragulicambarus* Fitzpatrick, 1987a

Genus *Procambarus* Ortmann, 1905d

Subgenus *Acucauda* Hobbs, 1972a

Subgenus *Austrocambarus* Hobbs, 1972a

Subgenus *Capillicambarus* Hobbs, 1972a

Subgenus *Girardiella* Lyle, 1938

Subgenus *Hagenides* Hobbs, 1972a

Subgenus *Leonticambarus* Hobbs, 1972a

Subgenus *Lonnbergius* Hobbs, 1972a

Subgenus *Mexicambarus* Hobbs, 1972a

Subgenus *Ortmannicus* Fowler, 1912

Subgenus *Paracambarus* Ortmann, 1906a

Subgenus *Pennides* Hobbs, 1972a

Subgenus *Procambarus* Ortmann, 1905d

Subgenus *Remoticambarus* Hobbs, 1972a

Subgenus *Scapulicambarus* Hobbs, 1972a

Subgenus *Tenuicambarus* Hobbs, 1972a

Subgenus *Villalobosus* Hobbs, 1972a

Genus *Troglocambarus* Hobbs, 1942a

Superfamily PARASTACOIDEA Huxley, 1879

Family PARASTACIDAE Huxley, 1879

Genus *Parastacus* Huxley, 1879

Genus *Samastacus* Riek, 1971

ACKNOWLEDGMENTS.—Again, I extend my thanks to all of those persons listed under “Acknowledgments” in Hobbs (1974b:4) for their assistance in obtaining information concerning crayfish types and/or for their criticisms and suggestions pertaining to one or more drafts of that manuscript, and for corrections and improvements resulting from their assistance in the preparation of the 1974 checklist that have been incorporated in this revision. In subsequent queries concerning a number of items in the 1974 checklist, J.F. Fitzpatrick, Jr., has been most helpful, and his careful reading, suggestions, and corrections of the manuscript have resulted in a much more reliable and complete final version. Invaluable also was the assistance of Douglas G. Smith, of the University of Massachusetts, who provided me with meticulous responses to questions related to type material housed in the Museum of Comparative Zoology. Jacques Forest, of the Museum National d’Histoire Naturelle, Paris, generously furnished me not only with photographs of H. Milne Edwards’ type of *Astacus chilensis*, but lent me the other South American parastacids in the Paris museum. Gustavo Augusto S. de Melo of the Museu de Zoologia da São Paulo kindly lent me a specimen of *Parastacus laevigatus*, which could not be obtained elsewhere.

A number of persons have assisted in checking the numerous references cited herein or have read parts or the entire manuscript, offering advice and criticisms; those assisting with the present manuscript are Margaret A. Andolshek, formerly of the Smithsonian Institution; three other Smithsonian colleagues, Thomas E. Bowman, Fenner A. Chace, Jr., and C.W. Hart, Jr.; H.H. Hobbs III of Wittenberg University; Douglas G. Smith, and Monica Ter-Minasian, of the Madeira School; and my wife, Georgia B. Hobbs. Janice Clark and C.W. Hart, Jr., have been both patient and helpful in assisting me in organizing the manuscript in the word processor, as has Molly Ryan in offering advice involving the preparation of the figures. Through the expertise of Carolyn S. Hahn of the Smithsonian Library, many incomplete and/or difficult-to-find references became available. To all of those persons mentioned above I extend my thanks for their interest and help; unquestionably, the compilation is much improved by their contributions. Finally, I am indeed grateful to Barbara Spann and Don Fisher for the skillful editing of this work.

### Nomina Nuda neither Validated nor Synonymized with Other Crayfish Taxa

Through the efforts of J.F. Fitzpatrick, Jr., the nomina nuda created by Clay Lyle (1938), and listed by Hobbs (1974b:4) in his checklist as not having been validated or synonymized with other species, now have been associated with previously or subsequently described taxa. The synonymies involved were kindly furnished to me by Dr. Fitzpatrick (in litt., 3 March 1983). During his tenure on the faculty of Mississippi State University, Dr. Fitzpatrick received from Dr. Lyle the collection on which the latter had based his unpublished dissertation and the abstract (1938) creating the nomina nuda. Much of the collection was in rather poor condition, but retrievable parts of it are now housed in the Smithsonian Institution. The synonymies involved may be traced through the index herein.

To my knowledge, only two nomina nuda applied to American crayfishes, one inadvertently, have not been unquestionably synonymized with currently recognized crayfish taxa:

*Cambarus schmittii* Penn, 1941:8 [questionably synonymized with *Cambarellus puer* Hobbs (Hobbs, 1974b:4)].

*Cambarus lucifugus* Packard, 1888:82 [lapsus for *Crangonyx lucifugus* Hay, an amphipod (Hobbs, 1974b:4)].

### Suppressed Names

*Astacus fossor* Rafinesque, 1817:42 [Suppressed by Opinion 522 of the International Commission on Zoological Nomenclature. (See Hemming, 1958:212.)]

*Astacus oregonus* Randall, 1840:138 [Suppressed by Opinion 855 of the International Commission on Zoological Nomenclature. (See Melville and China, 1968:84.)]

### Species Inquirenda

With the discovery of additional fossils conspecific with *Cambarus primaevus* Packard (1880:222) (= *Procambarus (Austrocambarus) primaevus* (Feldmann et al., 1981:794)), only the lack of an association of one taxon with a crayfish seems to remain:

#### *Procambarus wiegmanni* (Erichson)

*Astacus (Cambarus) Wiegmanni* Erichson, 1846:99.

*Cambarus Wiegmanni*.—Hagen, 1870:54.

*Cambarus wiegmanni*.—Faxon, 1890:621.

*Procambarus wiegmanni*.—Hobbs, 1942a:342 [by implication]; 1974b:4.

*Procambarus weigmanni*.—Villalobos, 1949:338 [erroneous spelling].

*Procambarus Weigmanni*.—Villalobos, 1950:381 [erroneous spelling].

TYPES.—Type lost from BMNH.

TYPE LOCALITY.—Mexico.

RANGE.—Unknown.

HABITAT.—Unknown.

REMARKS.—Nothing further is known than was reported in my previous checklist (Hobbs:1974b:4–5):

The identity of this crayfish has not been recognized with certainty since it was described. Villalobos (1950) reviewed its history and designated Erichson's name a nomen nudum. Inasmuch as Erichson diagnosed and described the species and stated that it occurs in Mexico, it cannot be considered a nomen nudum.

The species was referred to the genus *Procambarus* on the basis of Erichson's (1846:99) statement, "Des zweite Glied am dritten und am vierten Beinpaar beim Männchen mit einem hakenförmigen Fortsatz." Only [three] crayfish genera are known to occur in Mexico [*Orconectes (G.) virilis* has been reported to have been introduced (Campos and Contreras, 1985:218)], and, of the [three], this statement could apply only to a member of the genus *Procambarus*.



## The Checklist

## Family ASTACIDAE Latreille, 1802–1803

Genus *Pacifastacus* Bott

- Astacus*.—Dana, 1852:522.  
*Cambarus*.—Girard, 1852:90.  
*Cambrus*.—Girard, 1852:90 [erroneous spelling].  
*Potamobius*.—Ortmann, 1902:286.  
*Cambaras*.—Anonymous, 1927, explanation of figure [erroneous spelling].  
*Cambals*.—Anonymous, 1927:258 [erroneous spelling].  
*Pacifastacus* Bott, 1950:24. [Type species, by original designation, *Astacus Klamathensis* Stimpson, 1857a:87. Gender: masculine.]  
*Pasifastacus*.—Sanders, 1967:33 [erroneous spelling].  
*Pacificastacus*.—LaCaze, 1970:2 [erroneous spelling].  
*Pasifastacus*.—Anonymous, 1972, cover page [erroneous spelling].  
*Pacifastaculus*.—Kamita, 1973:123 [erroneous spelling].  
*Gambelly*.—Cabantous, 1976:50 [erroneous spelling].  
Subgenus *Hobbsastacus* Bouchard, 1977b:38 [nomen nudum]; 1978b:431.  
[Type species, by original designation, *Cambrus* [sic] *Gambelii* Girard, 1852:90 (= "*Astacus Gambelii* Girard, 1852:90"). Gender: masculine.]  
*Pacifastacus*.—Mason, 1976:473 [erroneous spelling].  
*Pacifasticus*.—Crenshaw, Lemons, and Russo, 1980:243 [erroneous spelling].

Subgenus *Hobbsastacus* Bouchard

- Cambrus*.—Girard, 1852:90 [lapsus for *Cambarus*].  
*Astacus*.—Stimpson, 1857a:87.  
*Cambarus*.—Hagen, 1870:31.  
Subgenus *Astacus*.—Faxon, 1898:666.  
*Potamobius*.—Ortmann, 1902:286.  
Subgenus *Potamobius*.—Ortmann, 1902:286.  
*Pacifastacus* Bott, 1950:24.  
*Gambelly*.—Cabantous, 1976:50 [erroneous spelling].  
Subgenus *Hobbsastacus* Bouchard, 1977b:38 [nomen nudum]; 1978b:431.  
[Type species, by original designation, *Cambrus* [sic] *Gambelii* Girard, 1852:90 (= "*Astacus Gambelii* Girard, 1852:90." Gender: masculine.)

*Pacifastacus (Hobbsastacus) chenoderma* (Cope)

- Astacus chenoderma* Cope, 1871:606.—Rathbun, 1926:130, pl. 29: fig. 7; pls. 31–34.  
?*Astacus subgrundialis* Cope, 1871:605. [Types not extant. Type locality, "fresh water deposit in the Territory of Idaho, near Hot Springs Mountain."  
?*Astacus breviforceps* Cope, 1871:606. [Types not extant. Type locality, same as that for *Astacus chenoderma*, see below.]  
*Astacus chinoderma*.—Brodsky, 1981:122 [erroneous spelling].  
*Pacifastacus chenoderma*.—Hobbs, 1974b:5.  
*Pacifastacus (Hobbsastacus) chenoderma*.—Bouchard, 1978b:431.

TYPES.—Syntype, USNM 353343; other syntypes probably lost.

TYPE LOCALITY.—"Catherine's creek, Idaho." According to an annotation in a reprint, this is "a local name for the upper part of Castle Creek, Owyhee County." Previously reported to be a Pliocene deposit, Feldmann et al. (1981:788) stated that this fossil was "described from the Miocene Payette Formation in Idaho and Oregon."

RANGE.—Miocene and Pliocene(?) deposits in Idaho and Oregon.

REMARKS.—Rathbun (1926) redescribed and figured Cope's

*A. chenoderma*, suggesting that both *A. breviforceps* and *A. subgrundialis* are probable synonyms. Since the types are lost and accounts of specimens assignable to either have not appeared since Miss Rathbun's review of the species, I have followed her in including these species as probable synonyms of *Pacifastacus chenoderma*. The species was transferred to the genus *Pacifastacus* and referred to the subgenus *Hobbsastacus* because the rostrum with as many as seven pairs of marginal spines is a feature foreign to members of the Eurasian Astacidae but strongly resembles that of four members of the American astacid genus *Pacifastacus*: *P. connectens*, *P. fortis*, *P. gambelii*, and *P. nigrescens*.

*Pacifastacus (Hobbsastacus) connectens* (Faxon)

## FIGURE 1

- Astacus gambelii connectens* Faxon, 1914:360, pl. 7: figs. 6, 10, pl. 10.  
*Pacifastacus gambelii connectens*.—Bott, 1950:24 [by implication].  
*Pacifastacus gambelii connectens*.—Riegel, 1959:43.  
*Pacifastacus gambelii connectans*.—Holt, 1960:61 [erroneous spelling].  
*Pacifastacus connectens*.—Hobbs, 1972b:22, figs. 12d, 14a; 1974b:5, fig. 1.  
*Pacifastacus (Hobbsastacus) connectens*.—Bouchard, 1978b:431.  
*Pacifastacus connectens*.—Fitzpatrick, 1983b:155 [erroneous spelling].

TYPES.—Syntypes, USNM 23096 (2 males, 1 female), USNM 44410 (1 female), MCZ 7385 (1 male) transferred from USNM.

TYPE LOCALITY.—Snake River, Upper Salmon Falls, Twin Falls County (not Logan County as cited by Hobbs, 1974b), Idaho.

RANGE.—Idaho and Oregon.

HABITAT.—Streams.

*Pacifastacus (Hobbsastacus) fortis* (Faxon)

## FIGURE 3

- Astacus nigrescens fortis* Faxon, 1914:360, pl. 7: figs. 5, 9, pl. 9: fig. 2.  
*Pacifastacus nigrescens fortis*.—Bott, 1950:24 [by implication].  
*Pacifastacus fortis*.—Hobbs, 1972b:23, figs. 13c, 14c; 1974b:5, fig. 3.—Eng and Daniels, 1982:197, figs. 1–6.  
*Pacifastacus (Hobbsastacus) fortis*.—Bouchard, 1978b:431; 1980a:416.

TYPES.—Syntypes, USNM 44404 (1 male, 2 females), USNM 44405 (3 females), MCZ 7383 (1 male, 1 female).

TYPE LOCALITY.—Fall River, Fall City Mills, Shasta County, California.

RANGE.—Known only from Shasta County, California.

HABITAT.—Streams.

*Pacifastacus (Hobbsastacus) gambelii* (Girard)

## FIGURE 2

- Cambrus Gambelii* Girard, 1852:90 [lapsus for *Cambarus*].  
*Astacus Gambelii*.—Stimpson, 1857b:492.—Hagen, 1870:90, pl. 1: figs. 97, 98, pl. 3: fig. 170, pl. 11.

*Astacus Gambeli*.—Hagen, 1870:28 [erroneous spelling].  
*Cambarus Gambeli*.—Hagen, 1870:31 [erroneous spelling].  
*Astacus (Astacus) Gambellii*.—Faxon, 1884:152 [by implication].  
*Astacus Gambellii*.—Underwood 1886:364 [erroneous spelling].  
*Astacus (Astacus) gambellii*.—Faxon, 1898:666 [by implication].  
*Astacus gambeli*.—Kingsley, 1899:822 [erroneous spelling].  
*Potamobius (Potamobius) gambeli*.—Ortmann, 1902:286 [by implication; erroneous spelling].  
*Astacus gambellii gambellii*.—Faxon, 1914:360 [by implication].  
*Astacus gambellii*.—Rathbun, 1926:133.  
*Pacifastacus gambellii gambellii*.—Bott, 1950:24 [by implication].  
*Pacifastacus gambellii*.—Kozloff, 1955:156.—Hobbs, 1972b:22, figs. 13a, 14b; 1974b:5, fig. 2.  
*Pacifastacus gambeli*.—Riegel, 1959:29, 43–44, figs. 3c, 8.  
*Astacus gambellii*.—Laguarda, 1962:284 [erroneous spelling].  
*Astacus gambellii gambellii*.—Laguarda, 1962:280 [erroneous spelling].  
*Cambarus gambellii*.—Hobbs, 1967a:130 [erroneous spelling].  
*Pacifastacus gambellii gambellii*.—Hobbs, 1967a:130 [erroneous spelling].  
*Pacifastacus (Hobbsastacus) gambellii*.—Bouchard, 1978b:431.

TYPES.—Syntypes, ANSP 1531 (10+, mostly fragments), ANSP 1532 (5 specimens).

TYPE LOCALITY.—“California.”

RANGE.—Pacific slope and in the Missouri River drainage in California(?), Idaho, Montana, Nevada, Oregon, Utah, Washington, and Wyoming.

HABITAT.—Streams and lakes.

### *Pacifastacus (Hobbsastacus) nigrescens* (Stimpson)

FIGURE 4

*Astacus nigrescens* Stimpson, 1857a:87; 1857b:492.—Hagen, 1870:92, pl. 3: fig. 168.  
*Astacus (Astacus) nigrescens*.—Faxon, 1884:152 [by implication].  
*Potamobius (Potamobius) nigrescens*.—Ortmann, 1902:286 [by implication].  
*Astacus nigrescens nigrescens*.—Faxon, 1914:360 [by implication].  
*Pacifastacus nigrescens nigrescens*.—Bott, 1950:24 [by implication].  
*Pacifastacus nigrescens*.—Riegel, 1959:44, figs. 3d, 9, 10.—Hobbs, 1972b:23, figs. 13b, 14d; 1974b:7, fig. 4.—Bouchard, 1978c:419.  
*Pacifastacus nigrescens*.—Goldman, 1973:107 [erroneous spelling].  
*Gambelly nigrescens*.—Cabantos, 1976:50 [erroneous spelling].  
*Pacifastacus (Hobbsastacus) nigrescens*.—Bouchard, 1978b:431.

TYPES.—Not extant; “probably destroyed in Chicago fire in 1871” (Faxon, 1914:408).

TYPE LOCALITY.—Vicinity of San Francisco, California.

RANGE.—Vicinity of San Francisco, California.

HABITAT.—Streams.

REMARKS.—This crayfish is probably extinct.

### Subgenus *Pacifastacus* Bott

*Astacus*.—Dana, 1852:522.  
 Subgenus *Astacus*.—Faxon, 1884:151 [by implication].  
*Potamobius*.—Ortmann, 1902:286.  
 Subgenus *Potamobius*.—Ortmann, 1902:286.  
*Cambaras*.—Anonymous, 1927, unnumbered figure [erroneous spelling].  
*Cambals*.—Anonymous, 1927:258 [erroneous spelling].  
*Pacifastacus* Bott, 1950:24. [Type species, by original designation, *Astacus klamathensis* Stimpson, 1857a:87. Gender: masculine.]  
 Subgenus *Pacifastacus*.—Brinck, 1968:85.  
*Pasifasticus*.—Anonymous, 1972, cover page [erroneous spelling].

*Pacifastaculus*.—Kamita, 1973:123 [erroneous spelling].  
*Pacifastacus*.—Mason, 1976:473 [erroneous spelling].

### *Pacifastacus (Pacifastacus) leniusculus klamathensis* (Stimpson)

FIGURE 6

*Astacus Klamathensis* Stimpson, 1857a:87.—Hagen, 1870:93, pl. 3: fig. 169.—Faxon, 1885a:131, pl. 6: figs. 1, 2.  
*C[ambarus] Klamathensis*.—Hagen, 1870:102 [erroneous combination].  
*Astacus klaymathensis*.—Huxley, 1880b:223 [erroneous spelling].  
*Astacus (Astacus) Klamathensis*.—Faxon, 1884:151 [by implication].  
*Astacus klamathensis*.—Faxon, 1890:634.  
*Astacus (Astacus) klamathensis*.—Faxon, 1898:665.  
*Potamobius (Potamobius) klamathensis*.—Ortmann, 1902:286.  
*Pacifastacus klamathensis*.—Bott, 1950:24 [by implication].—Riegel, 1959:41, figs. 3b, 7, 10.  
*Pacifastacus leniusculus klamathensis*.—Miller and Van Hyning, 1970:77.—Hobbs, 1974b:6, fig. 6 [not 5 as noted].  
*Pacifastacus leniusculus leniusculus*.—Hobbs, 1974b:81 [figs. 5 and 6 are interchanged].  
*Pacifastacus klamathensis*.—Upson, 1977:43 [erroneous spelling].  
*Pacifastacus (Pacifastacus) leniusculus klamathensis*.—Bouchard, 1978b:431.  
*Pacifastacus leniusculus klamathensis*.—Huner and Barr, 1980:145 [erroneous spelling].  
*Pacifastacus leniusculus klamathensis*.—Brodsky, 1981:188 [erroneous spelling].  
*Pacifastacus lenisculus klamathensis*.—Fitzpatrick, 1983b:155 [erroneous spelling].

TYPES.—Not extant; “probably destroyed in the Chicago fire in 1871” (Faxon, 1914:409).

TYPE LOCALITY.—Lake Klamath, Klamath County, Oregon.  
 RANGE.—British Columbia and Idaho south to central California.

HABITAT.—Lakes and cold, swift streams.

### *Pacifastacus (Pacifastacus) leniusculus leniusculus* (Dana)

FIGURE 5

*Astacus leniusculus* Dana, 1852:522, 524; 1855, pl. 33: fig. 1a,b.—Hagen, 1870:94.  
*Astacus laeviusculus*.—Lockington, 1878:304 [erroneous spelling].  
*Astacus leenisculus*.—Huxley, 1880a:305 [erroneous spelling].  
*Astacus (Astacus) leniusculus*.—Faxon, 1884:151 [by implication]; 1885a:132, pl. 6: fig. 4.  
*Potamobius (Potamobius) leniusculus*.—Ortmann, 1902:286 [by implication].  
*Potamobius leniusculus*.—Bowkiewicz, 1926:1.  
*Cambaras americanus* Anonymous, 1927, unnumbered figures [nomen nudum].  
*Cambals americanus* Anonymous, 1927:258 [nomen nudum].  
*Pacifastacus leniusculus*.—Bott, 1950:24 [by implication].—Riegel, 1959:39, figs. 1d–h, 3a, 6, 10.  
*Pacifastacus leniusculus*.—Hopkins, 1967:53 [erroneous spelling].  
*Pacifastacus trowbridgeii*.—Sanders, 1967:33 [figure: misidentification and erroneous spelling].  
 “*Astacus*” (*Pacifastacus*) *leniusculus*.—Brinck, 1968:85.  
*Pacifastacus leniusculus leniusculus*.—Miller and Van Hyning, 1970:77.—Hobbs, 1972b:21, figs. 12a, 14c; 1974b:6, fig. 6 (not 5 as noted).  
*Pasifasticus leniusculus*.—Anonymous, 1972, cover page [erroneous spelling].  
*Pacifastaculus leniusculus*.—Kamita, 1973:123 [erroneous spelling].  
*Pacifastacus lenisculus*.—Brodsky, 1973:52 [erroneous spelling].  
*P[acifastacus] l. lenisculus*.—Hart and Hart, 1974:132 [erroneous spelling].

*Pacifastacus leniusculus klamathensis*.—Hobbs, 1974b: fig. 6 [figs. 5 and 6 are interchanged].

*Pacifastacus leniusculus*.—Schapiro, 1975:15 [erroneous spelling].

*Pacifastacus (Pacifastacus) leniusculus leniusculus*.—Bouchard, 1978b:431.

*Pacifastacus leniusculus*.—Crenshaw, Lemons, and Russo, 1980:243 [erroneous spelling].

*Pacifastacus liniusculus*.—Crenshaw, Lemons, and Russo, 1980:254 [erroneous spelling].

*Pacifastacus leniusculus*.—Brodsky, 1981:109 [erroneous spelling].

*Pacifastacus l. leniuaculus*.—Brodsky, 1981:189 [erroneous spelling].

*Pacifastacus l. leniusculus*.—Fitzpatrick, 1983b:155 [erroneous spelling].

*Pacifastacus leniusculus*.—McGriff, 1983:238 [erroneous spelling].

*Pacifastacus leniusculus*.—Avault and Huner, 1985:43 [erroneous spelling].

TYPES.—Syntypes, USNM 2019 (1 male), USNM 2161 (1 male), USNM 44408 (1 male).

TYPE LOCALITY.—Columbia River and Puget Sound, Washington.

RANGE.—British Columbia, California, Idaho, Nevada, Oregon, Utah, and Washington. Introduced into Sweden (Svardson, 1965:92) and Japan (Kamita, 1970:140).

HABITAT.—Streams and lakes.

REMARKS.—*Astacus leniusculus* was placed on the Official List of Specific Names in Zoology, name number 2244, in Opinion 855 of the International Commission on Zoological Nomenclature. (See Melville, 1968:84).

*Pacifastacus (Pacifastacus) leniusculus trowbridgii*  
(Stimpson)

FIGURE 7

*Astacus Trowbridgii* Stimpson, 1857a:87; 1857b:493.—Hagen, 1870:93, pl.3: fig. 171, pl. 10.

*Astacus Trownbridgi*.—Huxley, 1883:271 [erroneous spelling].

*Astacus (Astacus) Trowbridgii*.—Faxon, 1884:152 [by implication].

*Astacus (Astacus) trowbridgii*.—Faxon, 1898:666 [by implication].

*Astacus trowbridgii*.—Hay 1899b:958.

*Potamobius (Potamobius) trowbridgei*.—Ortmann, 1902:286 [by implication; erroneous spelling].

*Pacifastacus trowbridgii*.—Bott, 1950:24 [by implication].—Riegel, 1959:30, fig. 1c-e.—Mason, 1970a:37, figs. 1-16; 1970b:969, figs. 1-7.

*Astacus trowbridgi*.—Pennak, 1953:461.

*Astacus trowbridgei*.—Pilgrim, 1960:249 [erroneous spelling].

*Pacifastacus Trowbridgii*.—Haertel and Osterberg, 1967:464.

*Pacifastacus trowbridgeii*.—Sanders, 1967:33 [erroneous spelling].

*Pacifastacus trowbridgeii*.—Sanders, 1967:33 [erroneous spelling].

*Pacifastacus leniusculus trowbridgii*.—Miller and Van Hynning, 1970:77.—Hobbs, 1972b:22, figs. 5a, 12b; 1974b:6, fig. 7.

*Pacifastacus trowbridgi*.—Goldman, 1973:106 [erroneous spelling].

*Pacifastaculus trowbridgii*.—Kamita, 1973:123 [erroneous spelling].

*Pacifastacus trowbridgii*.—Miyake, 1973:7 [erroneous spelling].

*Pacifastacus leniusculus trowbridgii*.—Mason, 1976:450 [erroneous spelling].

*Pacifastacus trowbridgei*.—Lake and Newcombe, 1975:211 [erroneous spelling].

*Pacifastacus leniusculus trowbridgii*.—Mason, 1976:473 [erroneous spelling].

*Pacifastacus leniusculus trowbridgii*.—Momot and Gowing, 1977:2043 [erroneous spelling].

*Pacifastacus (Pacifastacus) leniusculus trowbridgii*.—Bouchard, 1978b:431.

*Pacifastacus leniusculus trowbridgii*.—Fitzpatrick, 1983b:155 [erroneous spelling].

TYPES.—Syntypes, USNM 2080 (2 males, 2 females), MCZ

3510 (1 male), BSNH, PM.

TYPE LOCALITY.—Columbia River above Astoria, Oregon.

RANGE.—British Columbia, California, Idaho, Oregon, Nevada and Washington. Introduced into Japan (Kamita, 1970:148).

HABITAT.—Streams and lakes.

Family CAMBARIDAE Hobbs, 1942a

Subfamily CAMBARELLINAE Laguarda, 1961

Genus *Cambarellus* Ortmann

*Cambarus*.—Saussure, 1857a:102.

Subgenus *Cambarellus* Ortmann, 1905c:106. [Type species, by original designation, *Cambarus Montezumae* Saussure, 1857a:102. Gender: masculine.]—Fitzpatrick, 1983a:267.

*Cambarellus*.—Hobbs, 1942a:350.

*Camberellus*.—Villalobos, 1953:357 [erroneous spelling].

*Caambarus*.—Villalobos, 1955:276 [erroneous spelling].

*Cambarella*.—Carlisle and Knowles, 1959:50 [erroneous spelling].

Subgenus *Dirigicambarus* Fitzpatrick, 1983a:267. [Type species, by original designation, *Cambarus Shufeldtii* Faxon, 1884:134. Gender: masculine.]

Subgenus *Pandicambarus* Fitzpatrick, 1983a:268. [Type species, by original designation, *Cambarellus schmitti* Hobbs, 1942b:149. Gender: masculine.]

Subgenus *Cambarellus* Ortmann

*Cambarus*.—Saussure, 1857a:102.

Subgenus *Cambarellus* Ortmann, 1905c:106. [Type species, by original designation, *Cambarus Montezumae* Saussure, 1857a:102. Gender: masculine.]—Fitzpatrick, 1983a:267.

*Cambarellus*.—Hobbs, 1942a:340.

*Caambarus*.—Villalobos, 1955:276 [erroneous spelling].

*Cambarellus (Cambarellus) alvarezii* Villalobos

FIGURE 9

*Cambarellus alvarezii* Villalobos, 1952:525, pl. 1: figs. 1-7, pl. 2: figs. 1-5.—Hobbs, 1972b:27, fig. 15f; 1974b:7, fig. 14.

*Cambarellus (Cambarellus) alvarezii*.—Fitzpatrick, 1983a:267, fig. 3L.

TYPES.—Holotype and morphotype, IBM 1-1952 (male I, male II); paratypes, USNM.

TYPE LOCALITY.—Potosí, Nuevo León, 23 km (14.4 mi) northwest of Galena, Mexico.

RANGE.—Known only from the vicinity of the type locality.

HABITAT.—“Colecta realizada en un deposito de agua de una cuenca cerrada, situada en la parte Norte de Valle Salado” (Villalobos, 1952:531).

*Cambarellus (Cambarellus) areolatus* (Faxon)

FIGURE 12

*Cambarus Montezumae* var. *areolata* Faxon, 1885a:123.

*Cambarus montezumae areolatus*.—Faxon, 1898:661, pl. 66: fig. 2.

*Cambarus (Cambarellus) montezumae areolatus*.—Ortmann, 1906a:23.

*Cambarellus montezumae areolatus*.—Hobbs, 1942a:350 [by implication].—Villalobos, 1955:276.



- Cambarellus montezumae* var. *areolata*.—Villalobos, 1953:358.  
*Caambarus montezumae areolatus*.—Villalobos, 1955:276 [erroneous spelling].  
*Cambarellus areolatus*.—Hobbs, 1972b:27, figs. 16b, 17b; 1974b:7, fig. 16.  
*Cambarellus (Cambarellus) areolatus*.—Fitzpatrick, 1983a:267, fig. 3s.

TYPES.—Syntypes, MCZ 3650 (male I, 3 females, male II).  
 TYPE LOCALITY.—Near Parras, Coahuila, Mexico.  
 RANGE.—Known only from vicinity of type locality.  
 HABITAT.—Unknown.

### *Cambarellus (Cambarellus) chapalanus* (Faxon)

FIGURE 10

- Cambarus chapalanus* Faxon, 1898:661, pl. 67: figs. 1, 2.  
*Cambarus chaplanus*.—Harris, 1903:82 [erroneous spelling].  
*Cambarus (Cambarellus) chapalanus*.—Ortmann, 1905c:106.  
*Cambarus montezumae chapalanus*.—Faxon, 1914:371.  
*Cambarus chapalamus*.—Van Straelen, 1942:5 [erroneous spelling].  
*Cambarellus montezumae chapalanus*.—Hobbs, 1942a:350 [by implication].  
*Cambarellus chapalanus*.—Villalobos, 1955:277.—Hobbs, 1972b:28, figs. 16c, 17c; 1974b:7, fig. 15.  
*Cambarellus campalanus*.—Villalobos, 1983:263 [erroneous spelling in Hobbs' translation].  
*Cambarellus (Cambarellus) chapalanus*.—Fitzpatrick, 1983a:267, fig. 3p.

TYPES.—Holotype, USNM 17698 (male I); paratypes, USNM, MCZ.  
 TYPE LOCALITY.—Lake Chapala, State of Jalisco, Mexico.  
 RANGE.—Jalisco and Michoacán, Mexico.  
 HABITAT.—Lentic situations.

### *Cambarellus (Cambarellus) chihuahuae* Hobbs

FIGURE 11

- Cambarellus chihuahuae* Hobbs, 1980:194, fig. 1.  
*Cambarellus (Cambarellus) chihuahuae*.—Fitzpatrick, 1983a:267, fig. 3k.  
*Cambarellus chihauhuae*.—Fitzpatrick, 1983b:160 [erroneous spelling].

TYPES.—Holotype, allotype, and morphotype, USNM 148895, 148896, 148897; paratypes, USNM, BMNH, RNHL.  
 TYPE LOCALITY.—Ojo de Carbonera, 4.3 kilometers (2.7 mi) south of Ejido Rancho Nuevo, approximately 57.6 kilometers (36 air miles) west of Villa Ahumada (30°35'N, 106°51'W), Chihuahua, Mexico.  
 RANGE.—Known only from the vicinity of the type locality.  
 HABITAT.—Streams.

### *Cambarellus (Cambarellus) montezumae* (Saussure)

FIGURE 14

- Cambarus Montezumae* Saussure, 1857a:102; 1858:459, fig. 22.  
*Cambarus Montezumae* var. *tridens* von Martens, 1872:130. [Syntypes, ZBM. Type locality: Puebla, Mexico.]  
*Cambarus Montezumae Montezumae*.—von Martens, 1872:130 [by implication].  
*Cambarus montezumae*.—Faxon, 1890:633.  
*Cambarus montezumae montezumae*.—Faxon, 1898:660 [by implication].  
*Cambarus montezumae dugesii* Faxon, 1898:660, pl. 66: fig. 1. [Syntypes,

USNM 16087 (4 male II, 12 female), MCZ. Type locality: State of Guanajuato, Mexico.]

- Cambarus montezumae dugesi*.—Hay, 1899b:960.—Villalobos, 1953:345.  
*Cambarus (Cambarellus) montezumae*.—Ortmann, 1905c:106.  
*Cambarellus (Cambarellus) montezumae dugesi*.—Ortmann, 1906a:20.  
*Cambarus (Cambarellus) Montezumae*.—Andrews, 1910:83 [by implication].  
*Cambarellus montezumae*.—Hobbs, 1942a:340; 1972b:28, figs. 16f, 18b,d; 1974b:8, fig. 17.  
*Cambarellus montezumae montezumae*.—Hobbs, 1942a:350 [by implication].—Villalobos, 1943:588, pl. 1; 1955:256; 1983:243.  
*Cambarellus montezumae dugesii*.—Hobbs, 1942a:350 [by implication].  
*Cambarellus montezumae* forma *lermensis* Villalobos, 1943:603, pl. 2: figs. 3, 5, 8, 11, 14, 18, 20. [Holotype, allotype, and "morphotype," IBM 50043(009) (male I, female, male II); paratypes, IBM. Type locality: Lerma, Estado de Mexico, Mexico.]  
*Cambarellus Montezumae*.—Villalobos, 1943:587.  
*Cambarellus montezumae lermensis*.—Villalobos, 1953:345, 359; 1955:38, 262, pl. 59: figs. 3, 5, 8, 11, 14, 18, 20; 1983:40, 248, pl. 59: figs. 3, 5, 8, 11, 14, 18, 20.  
*Cambarellus montezumae* var. *tridens*.—Villalobos, 1953:345.  
*Cambarellus montezumae dugesi*.—Villalobos, 1953:345.  
*Cambarus montezumae* var. *tridens*.—Villalobos, 1953:353.  
*Cambarellus montazumae*.—Huner and Barr, 1980:140 [erroneous spelling].  
*Cambarellus (Cambarellus) montezumae*.—Fitzpatrick, 1983a:267, fig. 30.

TYPES.—Syntypes, USNM 20583 (male I), GM (uncatalogued, dry, 13 specimens), BMNH 3587.

TYPE LOCALITY.—Swamps of the Valley of Mexico; ponds in Chapultepec Park, Mexico.

RANGE.—Pacific slope and Valley of Mexico.

HABITAT.—Sluggish streams and lentic situations.

### *Cambarellus (Cambarellus) occidentalis* (Faxon)

FIGURE 8

- Cambarus montezumae occidentalis* Faxon, 1898:661, pl. 66: figs. 3, 4.  
*Cambarus (Cambarellus) montezumae occidentalis*.—Ortmann, 1905c:106 [by implication].  
*Cambarellus montezumae occidentalis*.—Hobbs, 1942a:350 [by implication].—Villalobos, 1953:358; 1955:276.  
*Cambarellus occidentalis*.—Hobbs, 1972b:27, figs. 16a, 17a; 1974b:8, fig. 13.  
*Cambarellus (Cambarellus) occidentalis*.—Fitzpatrick, 1983a:267, fig. 3m.

TYPES.—Syntypes, MCZ 3652 (2 male I, 2 male II, female dry).

TYPE LOCALITY.—Mazatlán, State of Sinaloa, Mexico.

RANGE.—Michoacán and Sinaloa, Mexico.

HABITAT.—Lentic situations.

### *Cambarellus (Cambarellus) patzcuarensis* Villalobos

FIGURE 15

- Cambarellus montezumae patzcuarensis* Villalobos, 1943:607, pl. 2: figs. 1, 6, 9, 10, 12, 15, 19, 21, 23; 1953:345; 1955:265, pl. 59: figs. 1, 6, 9, 10, 12, 15, 19, 21, 23; 1983:252, pl. 59: figs. 1, 6, 9, 10, 12, 15, 19, 21, 23.—Miyake, 1973, fig. 9.—Kamita, 1973:123, figs. 1–4.  
*Cambarellus patzcuarensis*.—Villalobos, 1953:345 [erroneous spelling].  
*Cambarellus patzcuarensis*.—Villalobos, 1955:280.—Hobbs, 1972b:28, figs. 16d, 17d; 1974b:8, fig. 18.  
*Cambarellus (Cambarellus) patzcuarensis*.—Fitzpatrick, 1983a:267 [erroneous spelling].

*Cambarellus (Cambarellus) patzcuarensis*.—Fitzpatrick, 1983a:274, fig. 3R.

TYPES.—Holotype, allotype, and "morphotype," IBM 90040(005) (male I, female, male II); paratypes, IBM.

TYPE LOCALITY.—Lago de Patzcuaro, State of Michoacán, Mexico.

RANGE.—Known only from the type locality.

HABITAT.—Lake.

### *Cambarellus (Cambarellus) prolixus* Villalobos and Hobbs

FIGURE 13

*Cambarellus prolixus* Villalobos and Hobbs, 1981:490, figs. 1-3.

*Cambarellus (Cambarellus) prolixus*.—Fitzpatrick, 1983a:267, fig. 3N.

TYPES.—Holotype, allotype, and morphotype, USNM 177206, 177207, 177208 (male I, female, male II); paratypes, IBM, RNHL, TMM, USNM, BMNH.

TYPE LOCALITY.—Lago de Chapala, 500 meters offshore from north levee at Ajijic, Jalisco, Mexico.

RANGE.—Known only from Lago de Chapala.

HABITAT.—Lentic situations.

### *Cambarellus (Cambarellus) zempoalensis* Villalobos

FIGURE 16

*Cambarellus montezumae* forma *zempoalensis* Villalobos, 1943:601, pl. 2: figs. 2, 4, 7, 13, 16, 17, 22.

*Cambarellus montezumae zempoalensis*.—Villalobos, 1953:345; 1955:257, pl. 59: figs. 2, 4, 7, 13, 16, 17, 22; 1983:244, pl. 59: figs. 2, 4, 7, 13, 16, 17, 22.

*Cambarellus zempoalensis*.—Hobbs, 1972b:28, figs. 16e, 18a,c; 1974b:9, fig. 19.

*Cambarellus (Cambarellus) zempoalensis*.—Fitzpatrick, 1983a:267, fig. 3Q.

TYPES.—Holotype, allotype, and "morphotype," IBM 100042(00FA) (male I, female, male II); paratypes, IBM.

TYPE LOCALITY.—Lagunas de Zempoala, State of Morelos, Mexico.

RANGE.—Known only from the type locality.

HABITAT.—Crater lakes.

### Subgenus *Dirigicambarus* Fitzpatrick

*Cambarus*.—Faxon, 1884:134.

Subgenus *Cambarellus*.—Ortmann, 1905c:106.

*Cambarellus*.—Hobbs, 1942a:350.

*Cambarella*.—Carlisle and Knowles, 1959:50 [erroneous spelling].

Subgenus *Dirigicambarus* Fitzpatrick, 1983a:267. [Type species, by original designation, *Cambarus shufeldtii* Faxon, 1884:134. Gender: masculine.]

### *Cambarellus (Dirigicambarus) shufeldtii* (Faxon)

FIGURE 17

*Cambarus Shufeldtii* Faxon, 1884:134; 1885a:124, pl. 7: fig. 1; pl. 10: figs. 8, 8', 8a, 8a'.

*Cambarus shufeldtii*.—Underwood, 1886:372.

*Cambarus shufeldii*.—Ortmann, 1902:278.

*Cambarus (Cambarellus) shufeldii*.—Ortmann, 1905c:106.

*Cambarellus shufeldtii*.—Hobbs, 1942a:350 [by implication]; 1972b:25, fig. 15a; 1974b:9, fig. 8.—Penn, 1942:644; 1959:14, figs. 24, 45, 63, 77, 86.—Hobbs and Marchand, 1943:17, figs. 1, 11, 15, 21.—Albaugh and Black, 1973, fig. 2.—Huner, 1977:10.—Bouchard, 1978d, cover photograph.—Page, 1985b:363, figs. 90-93.—Pflieger, 1987a:29; 1987b:13.

*Cambarellus shufeldtii*.—Bick, Hornuff, and Lambremont, 1953:227 [erroneous spelling].

*Cambarellus shufeldii*.—Pennak, 1953:462.

*Cambarella shufeldii*.—Carlisle and Knowles, 1959:50 [erroneous spelling.]

*Cambarellus shufeldii*.—Sprague and Couch, 1971:530 [erroneous spelling.]

*Cambarellus shufeldii*.—Anonymous, 1976, caption for illustration on unnumbered page [erroneous spelling].

*Cambarellus shufeldtii*.—Jordan and Dunham, 1981:385 [erroneous spelling].

*Cambarellus (Dirigicambarus) shufeldtii*.—Fitzpatrick, 1983a:268, fig. 3C.

TYPES.—Syntypes, USNM 4860 (3 male I, 7 female), MCZ 3684 (male I, male II, 2 females).

TYPE LOCALITY.—Near New Orleans, Louisiana.

RANGE.—Mississippi River drainage system in southern Illinois, Missouri, Kentucky, Tennessee, Arkansas, and in Louisiana east of the Mississippi and Atchafalaya rivers; Red River system in Louisiana and Texas; Brazos and Colorado rivers in Texas; Pascagoula, Pearl, upper Tombigbee, and Escatawpa river systems in Mississippi; and southwestern Alabama. Introduced into Rapides, St. Bernard, and St. Tammany parishes, Louisiana (Penn, 1950b:422), and into Harris County, Georgia (Penn, personal communication). It has not been collected subsequently in the last-mentioned area.

HABITAT.—Swamps, ditches, sloughs, lakes, ponds, and sluggish streams. Burrows as water disappears from habitat.

### Subgenus *Pandicambarus* Fitzpatrick

*Cambarus*.—Penn, 1941:8.

*Cambarellus*.—Hobbs, 1942b:149.

Subgenus *Pandicambarus* Fitzpatrick, 1983a:268. [Type species, by original designation, *Cambarellus schmitti* Hobbs, 1942b:149. Gender: masculine.]

### *Cambarellus (Pandicambarus) blacki* Hobbs

FIGURE 18

*Cambarellus blacki* Hobbs, 1980:201, fig. 2.

*Cambarellus (Pandicambarus) blacki*.—Fitzpatrick, 1983a:268, fig. 3E.

TYPES.—Holotype, allotype, and morphotype, USNM 148901, 148902, and 148903; paratypes, USNM.

TYPE LOCALITY.—Small cypress pond at Oak Grove, Escambia County, Florida.

RANGE.—Known only from the type locality.

HABITAT.—Cypress pond.

### *Cambarellus (Pandicambarus) diminutus* Hobbs

FIGURE 24

*Cambarellus diminutus* Hobbs, 1945b:467, figs. 1, 2, 5, 6, 10, 12, 13, 17, 18, 20, 25, 26; 1972b:26, fig. 15b; 1974b:7, fig. 12.

*Cambarellus (Pandicambarus) diminutus*.—Fitzpatrick, 1983a:268, fig. 3H.

TYPES.—Holotype, allotype, and "morphotype," USNM

81554 (male I, female, male II); paratypes, USNM, MCZ, CM, TU.

TYPE LOCALITY.—Sand-bottomed stream, 3.5 miles (5.6 km) south of Irvington, Mobile County, Alabama.

RANGE.—Mobile County, Alabama, and George and Jackson counties, Mississippi.

HABITAT.—Pools, sluggish portions of streams and ditches. Burrows as water disappears from habitat.

*Cambarellus (Pandicambarus) lesliei* Fitzpatrick and Laning

FIGURE 20

*Cambarellus schmitti*.—Hobbs, 1942b:151 [in part].

*Cambarellus lesliei* Fitzpatrick, 1976b:55 [nomen nudum].—Fitzpatrick and Laning, 1976:138, fig. 1.

*Cambarellus lesliei*.—Bouchard, 1978b:451 [erroneous spelling].

*Cambarellus (Pandicambarus) lesliei*.—Fitzpatrick, 1983a:268, fig. 3F.

TYPES.—Holotype, allotype, and morphotype, USNM 146616, 146617, 146618 (male I, female, male II); paratypes, USNM, TU.

TYPE LOCALITY.—0.5 mile (0.8 km) south of Alabama Port, Mobile County, Alabama.

RANGE.—Baldwin, Mobile, and Washington counties, Alabama, and George County, Mississippi.

HABITAT.—Streams and pools.

*Cambarellus (Pandicambarus) ninae* Hobbs

FIGURE 23

*Cambarellus ninae* Hobbs, 1950a:89, figs. 1-17; 1972b:26, fig. 15d; 1974b:8, fig. 4.—Albaugh and Black, 1973:177, fig. 2.

*Cambarellus (Pandicambarus) ninae*.—Fitzpatrick, 1983a:268, fig. 3J.

TYPES.—Holotype, allotype, and morphotype, USNM 89768, 89770, 89769 (male I, female, male II); paratypes, MCZ, ANSP, USNM, TU.

TYPE LOCALITY.—Borrow ditches in the Aransas Refuge (along East Short Road), Aransas County, Texas.

RANGE.—Aransas, Calhoun, Refugio, and Victoria counties, Texas.

HABITAT.—Lentic situations.

*Cambarellus (Pandicambarus) puer* Hobbs

FIGURE 21

?*Cambarus schmittii* Penn, 1941:8 [nomen nudum].

*Cambarellus puer* Hobbs, 1945b:469, figs. 7-9, 11, 14-16, 19, 21-24; 1972b:27, figs. 5c, 15e; 1974b:8, fig. 10.—Penn, 1950b:423.—Albaugh and Black, 1973:177, fig. 2.—Chambers, Payne, and Kennedy, 1979:39, figs. 1-5; 1980:169, figs. 1-4.—Page, 1985b:366, figs. 94-97.—Pflieger, 1987a:29; 1987b:13.

*Cambarellus (Pandicambarus) puer*.—Fitzpatrick, 1983a:268, fig. 3G.

TYPES.—Holotype, allotype, and "morphotype," USNM

81556 (male I, female, male II); paratypes, MCZ, ANSP, TU, USNM.

TYPE LOCALITY.—Roadside ditch, 7 miles (11.2 km) west of Dayton, Liberty County, Texas, on U.S. Highway 90.

RANGE.—From Brazos and Brazoria counties, Texas, eastward through the coastal plain to and in the Mississippi basin from the lower part of the delta to Johnson County, Illinois.

HABITAT.—Swamps, ditches, sloughs, ponds, and sluggish streams.

*Cambarellus (Pandicambarus) schmitti* Hobbs

FIGURE 19

*Cambarellus schmitti* Hobbs, 1942b:149-153 [in part, not specimens from Alabama], figs. 176-180, 286-295; 1972b:26, fig. 15c; 1974b:9, fig. 9.—Fitzpatrick and Laning, 1976:137.

*Cambarellus (Pandicambarus) schmitti*.—Fitzpatrick, 1983a:268, fig. 3D.

TYPES.—Holotype, allotype, and "morphotype," USNM 81291 (male I, female, male II); paratypes, USNM, MCZ, Chas. Mus., TU, UF (now in USNM and FSBC).

TYPE LOCALITY.—Small spring flowing into the Suwannee River at Branford, Suwannee County, Florida (Sec. 16, T. 6S, R. 14E).

RANGE.—From Santa Rosa County, eastward to the Suwannee River drainage system in Florida.

HABITAT.—Clear streams and springs.

*Cambarellus (Pandicambarus) texanus* Albaugh and Black

FIGURE 22

*Cambarellus texanus* Albaugh and Black, 1973:177, fig. 1.

*Cambarellus (Pandicambarus) texanus*.—Fitzpatrick, 1983a:268, 3L.

TYPES.—Holotype, allotype, and morphotype, USNM 144191, 144192, 144193 (male I, female, male II); paratypes, USNM, MCZ, TU, Texas A&M University, and Joe B. Black.

TYPE LOCALITY.—Ditch beside Farm Road 521, 1.5 mile (2.4 km) south, 1 mile (1.6 km) west of Wadsworth, 12 miles (19.2 km) south of Bay City, Matagorda County, Texas.

RANGE.—East of the Lavaca River and Bay to the Brazos River drainage system, Texas.

HABITAT.—Roadside ditches.

Subfamily CAMBARINAE Hobbs, 1942a

CAMBARINAE Hobbs, 1942a:338.

CARBARINAE Eberly, 1955:283 [erroneous spelling].

Genus *Barbicambarus* Hobbs

*Cambarus*.—Faxon, 1884:120.

Subgenus *Bartoni* Ortmann, 1905c:120.

Subgenus *Cambarus*.—Fowler, 1912:341 [by implication].

Subgenus *Barbicambarus* Hobbs, 1969b:98. [Type species, by original designation, *Cambarus cornutus* Faxon, 1884:120. Gender: masculine.]

*Barbicambarus*.—Bouchard, 1972a:56.



***Barbicambarus cornutus* (Faxon)**

FIGURE 25

- Cambarus cornutus* Faxon, 1884:120; 1885a:80, pl. 5: figs. 1, 2; pl. 9: figs. 3, 3'.—Cooper and Cooper, 1968:19, illustrated.  
*Cambarus* (*Bartoni*) *cornutus*.—Ortmann, 1905c:120.  
*Cambarus* (*Cambarus*) *cornutus*.—Fowler, 1912:341 [by implication].  
*Cambarus* (*Barbicambarus*) *cornutus*.—Hobbs, 1969b:98, figs. 2d, 5, 13k, 14j, 17b; 1974b:9, fig. 20.  
*Barbicambarus cornutus*.—Bouchard, 1972a:56.

TYPES.—Holotype, MCZ 3566 (1 male I).

TYPE LOCALITY.—Green River, near Mammoth Cave, Edmonson County, Kentucky.

RANGE.—Barren and Green river systems in Kentucky and Tennessee.

HABITAT.—Streams.

**Genus *Bouchardina* Hobbs**

- Bouchardina* Hobbs, 1977c:734. [Type species, by original designation, *Bouchardina robisoni* Hobbs, 1977c:734. Gender: feminine.]  
*Bouchardina*.—Anonymous, 1987:4 [erroneous spelling].

***Bouchardina robisoni* Hobbs**

FIGURE 26

- Bouchardina robisoni* Hobbs, 1977c:734, fig. 1.  
*Bouchardina robinsoni*.—Anonymous, 1987:4 [erroneous spelling].

TYPES.—Holotype, allotype, and morphotype, USNM 147146, 147147, 145743 (male I, female, male II); paratypes, BMNH, USNM.

TYPE LOCALITY.—Backwaters of Bayou Bodcaw (Red River Basin) in borrow ditch along Sunray Road, 4 miles (6.4 km) north of Lewisville off State Route 29, Lafayette County, Arkansas (Sec. 14, T. 15S, R. 2W).

RANGE.—Bodcaw and Dorcheat bayou basins in southwestern Arkansas.

HABITAT.—Lentic to sluggish lotic situations.

**Genus *Cambarus* Erichson**

- Astacus*.—Fabricius, 1798:407.  
 Subgenus *Cambarus* Erichson, 1846:97. [Type species, by subsequent designation (Faxon, 1898:644), *Astacus Bartonii* Fabricius, 1798:407. Proposed as subgenus of *Astacus*. Gender: masculine.]  
*Cambarus*.—Girard, 1852:88.  
*Cambarus*.—Anonymous, 1861:27 [erroneous spelling].  
*Gambarus*.—Huxley, 1880b:81 [erroneous spelling].  
*Orconectes* Cope, 1881:881 [in part].  
*Cambarus*.—Faxon, 1885c:358 [erroneous spelling].  
*Cambarus*.—W.S. Miller, 1895:336 [erroneous spelling].  
*Camparus*.—Williamson, 1899:47 [erroneous spelling].  
*S[ambarus]*.—Steele, 1902:11 [erroneous spelling].  
*Bartoni* Ortmann, 1905c:97. [Type species, by original designation, "*C. bartoni*" Fabricius, 1798:407. Proposed as subgenus of *Cambarus*, treated unintentionally as generic name by Williamson, 1907:749, and declared a synonym of *Cambarus* by Fowler, 1912:341. Gender: masculine.]  
 ?*Cambarus*.—Turner, 1926:43 [erroneous spelling].  
*Cambarus*.—Bierstein and Vinogradov, 1934:62 [erroneous spelling].

- Bartoni*.—Rioja, 1941:193 [erroneous spelling].  
*Cambarus*.—Okada, 1948:133 [erroneous spelling].  
*Canbarus*.—McKeever, 1958:324 [erroneous spelling].  
 Subgenus *Veticambarus* Hobbs, 1969b:96. [Type species, by original designation, *Cambarus pristinus* Hobbs, 1965:268. Gender: masculine.]  
 Subgenus *Aviticambarus* Hobbs, 1969b:99. [Type species, by original designation, *Orconectes hamulatus* Cope, 1881:881. Gender: masculine.]  
 Subgenus *Erebicambarus* Hobbs, 1969b:99. [Type species, by original designation, *Cambarus bartoni tenebrassus* Hay, 1902a:232. Gender: masculine.]  
 Subgenus *Puncticambarus* Hobbs, 1969b:101. [Type species, by original designation, *Cambarus extraneus* Hagen, 1870:73. Gender: masculine.]  
 Subgenus *Depressicambarus* Hobbs, 1969b:102. [Type species, by original designation, *Astacus latimanus* LeConte, 1856:402. Gender: masculine.]  
 Subgenus *Hiaticambarus* Hobbs, 1969b:105. [Type species, by original designation, *Cambarus longulus* Girard, 1852:90. Gender: masculine.]  
 Subgenus *Jugicambarus* Hobbs, 1969b:106. [Type species, by original designation, *Cambarus bartonii asperimanus* Faxon, 1914:391. Gender: masculine.]  
 Subgenus *Lacunicambarus* Hobbs, 1969b:110. [Type species, by original designation, *Cambarus diogenes* Girard, 1852:88. Gender: masculine.]  
*Cambaroides*.—Unestam, 1969:204 [lapsus calami].  
*cambarus*.—Padgett, 1970:19 [lapsus calami].  
*Cambarus*.—Bouchard, 1973a:106 [erroneous spelling].  
*Cambrarus*.—Peters, 1975:iii [erroneous spelling].  
 Subgenus *Exilicambarus* Bouchard and Hobbs, 1976:2. [Type species, by original designation, *Cambarus* (*Exilicambarus*) *cracens* Bouchard and Hobbs, 1976:2. Gender: masculine.]  
*Carbarus*.—Bouchard, 1976c:17 [erroneous spelling].  
*Cambarinus*.—Spitzzy, 1976:445 [erroneous spelling].  
*Camabarus*.—Huner, 1977:12 [erroneous spelling].  
*Procambarus*.—Wharton, 1978:46 [lapsus calami].  
*cabarus*.—Root, 1979:K-2 [erroneous spelling].  
*Cambarus*.—Brodsky, 1983:465 [erroneous spelling].  
*Cabmarus*.—Thorne, 1987:421 [erroneous spelling].

**Subgenus *Aviticambarus* Hobbs**

- Orconectes* Cope, 1881:881 [in part].  
*Cambarus*.—Faxon, 1884:145 [in part].  
 Subgenus *Bartoni* Ortmann, 1905c:97 [in part].  
 Subgenus *Cambarus*.—Fowler, 1912:341.  
 Subgenus *Aviticambarus* Hobbs, 1969b:99. [Type species, by original designation, *Orconectes hamulatus* Cope, 1881:881. Gender: masculine.]  
*Carbarus*.—Bouchard, 1976c:17 [erroneous spelling].

***Cambarus* (*Aviticambarus*) *hamulatus* (Cope)**

FIGURE 27

- Orconectes hamulatus* Cope, 1881:881, pl. 7: fig. 1a,b.  
*Cambarus hamulatus*.—Faxon, 1884:145.—Hobbs and Barr, 1960:17, figs. 1–10.  
*Cambarus* (*Bartoni*) *hamulatus*.—Ortmann, 1905c:120.  
*Cambarus* (*Cambarus*) *hamulatus*.—Fowler, 1912:341 [by implication].—Ortmann, 1931:96.  
*Cambarus hamueatus*.—Fleming, 1938:303 [erroneous spelling].  
*Cambarus* (*Aviticambarus*) *hamulatus*.—Hobbs, 1969b:99, figs. 5, 13f, 14f, 17j; 1974b:10, fig. 21.  
*Cambarus hamuietus*.—Bouchard, 1976a:573 [erroneous spelling].  
*Orconectes haninlatus*.—Brodsky, 1981:199 [erroneous spelling].

TYPES.—Syntypes, MCZ 3678 (male II, female).

TYPE LOCALITY.—Nickajack Cave, Marion County, Tennessee.

RANGE.—From the upper Sequatchie Valley, Tennessee,

southward to Blount County, Alabama.

HABITAT.—Subterranean streams.

### *Cambarus (Aviticambarus) jonesi* Hobbs and Barr

FIGURE 28

*Cambarus jonesi* Hobbs and Barr, 1960:19, figs. 11–20.

*Cambarus (Aviticambarus) jonesi*.—Hobbs, 1969b:99, figs. 5, 17k; 1974b:10, fig. 22.

*Aviticambarus jonesi*.—Cooper, 1975:54.—Culver, 1982:65.

*Carbarus jonesi*.—Bouchard, 1976c:17 [erroneous spelling].

TYPES.—Holotype, allotype, and morphotype, USNM 104407, 104408, 104799 (male I, female, male II); paratypes: TU, USNM.

TYPE LOCALITY.—Cave Spring Cave, 12.1 miles (19.4 km) northwest of Valhermosa, Morgan County, Alabama.

RANGE.—Tennessee River basin between Florence and environs of Guntersville, Alabama.

HABITAT.—Subterranean waters.

### Subgenus *Cambarus* Erichson

*Astacus*.—Fabricius, 1798:407.

Subgenus *Cambarus* Erichson, 1846:97 [in part].—Fowler, 1912:341 [in part].—Hobbs, 1969b:109. [Type species, by subsequent designation (Faxon 1898:644), *Astacus Bartonii* Fabricius, 1798:407. Gender: masculine.]

*Cambarus*.—Girard, 1852:88.

Subgenus *Astacus*.—Herklots, 1861:144.

Subgenus *Bartonius* Ortmann, 1905c:97 [in part].

*Bartonius*.—Williamson, 1907:749 [intended as subgeneric name].

*Procambarus*.—Estrada, 1972:73 [lapsus].

*Cambaras*.—Bouchard, 1973a:106 [erroneous spelling].

### *Cambarus (Cambarus) bartonii bartonii* (Fabricius)

FIGURE 29

*Astacus Bartonii* Fabricius, 1798:407.

*Astacus ciliaris* Rafinesque, 1817:42 [Types not extant. Type locality: brooks near Fishkill, Dutchess County, and Newburgh, Orange County, New York.]

*Astacus pusillus* Rafinesque, 1817:42. [Types not extant. Type locality: brooks in New York, near "Saratoga, Lake George, Lake Champlain, Utica, Oswego, &c."]

*Astacus bartonii*.—Harlan, 1835:230.

*Astacus Bartonii*.—Tellskamp, 1845:85.

*Astacus (Cambarus) Bartonii*.—Erichson, 1846:97.

*Cambarus Bartonii*.—Girard, 1852:88.

*Cambarus montanus* Girard, 1852:88. [Types destroyed in the Chicago fire in 1871; paratype(?) ANSP 322 (male II), from James River, Virginia. Type locality, restricted by Ortmann, 1931:114, "Tributary of James River, Rockbridge County, Virginia."]

*Cambarus pusillus*.—Girard, 1852:90.

*Astacus (Astacus) Bartonii*.—Herklots, 1861:144.

*Cambarus Bartonii*.—Hagen, 1870:30.

*Cambarus bartonii*.—Packard, 1880:222.

*Cambarus Bartonii Bartonii*.—Faxon, 1885a:61 [by implication].

*Cambarus bartonii*.—Shufeldt, 1898:227.

*Cambarus bartonii bartonii*.—Hay, 1899b:959 [by implication].

*Cambarus bartonii bartonii*.—Hay, 1902b:435.—Crocker, 1957:42, pl. 1: figs. 2, 3, 6, pl. 2: figs. 5–7.

*Cambarus (Bartonius) bartonii*.—Ortmann, 1905c:117, 120.

*Astacus bartonii*.—Ortmann, 1906b:348.

*Cambarus bartonii typicus*.—Ortmann, 1906b:450.

*Cambarus bartonius bartonii*.—Chidester, 1908:710.

*Cambarus (Cambarus) bartonii*.—Fowler, 1912:341.

*Cambarus bartonii montanus*.—Faxon, 1914:385.

*Cambarus montanus montanus*.—Ortmann, 1931:106.

*Cambarus (Cambarus) montanus montanus*.—Ortmann, 1931:114.

*Cambarus (Cambarus) bartonii bartonii*.—Ortmann, 1931:130.

*Cambarus bartonii montanus*.—Ortmann, 1931:114.

*Cambarus (Cambarus) bartonii bartonii*.—Fleming, 1938:303.—Hobbs, 1969b:109, figs. 5, 13, 14, 19l; 1974b:10, fig. 23.

*Cambarus bartonius*.—Roberts, 1944:370 [erroneous spelling].

*Canbarus bartonii*.—Thompson, 1967:47 [erroneous spelling].

*Cambarus bartonii*.—Coleman, 1972:21 [erroneous spelling].

*Procambarus bartonii*.—Estrada, 1972:73 [lapsus calami].

*Cambaras bartonii*.—Bouchard, 1973a:106 [erroneous spelling].

*Cambarus (Cambarus) bartonii bartonii*.—Hobbs III, 1975:298 [erroneous spelling].

*Cambarus (cambarus) bartonii bartonii*.—Seaman, 1979:24 [lapsus].

*Cambarus bouioni*.—Blewett and Eble, 1979:39 [erroneous spelling].

TYPES.—Type, UZM (male II).

TYPE LOCALITY.—North America; "probably neighborhood of Philadelphia, Pa." (Faxon, 1914:423).

RANGE.—New Brunswick, Canada, to northern Georgia, and eastern parts of Kentucky and Tennessee to the Atlantic Ocean; restricted to the mountains and foothills in South Carolina and Georgia.

HABITAT.—Mostly lotic habitats, but occasionally frequenting ponds and often burrowing along streams and in seepage areas.

### *Cambarus (Cambarus) bartonii carinirostris* Hay

FIGURE 30

*Cambarus bartonii carinirostris* Hay, 1914:384.

*Cambarus (Cambarus) bartonii carinirostris*.—Ortmann, 1931:107.

*Cambarus (Cambarus) bartonii carinirostris*.—Hobbs, 1969b:109, fig. 19m; 1974b:11, fig. 24.—Thoma, 1982:875.—Thoma and Jezerinac 1982:136.—Jezerinac, 1983:4.

TYPES.—"Type" and paratypes, USNM 23962 (male I, 7 male II, 15 female); paratypes, MCZ 7399 (male I, male II, female).

TYPE LOCALITY.—Gandy Creek at Osceola, Randolph County, West Virginia.

RANGE.—Tributaries of the Cheat, Greenbrier, and Tygart rivers in West Virginia and widespread in eastern Ohio. Exact range not known.

HABITAT.—Small to moderate sized streams.

REMARKS.—Both Ortmann (1931) and Hobbs (1972b) have remarked on the advisability of recognizing this subspecies, and the latter indicated that "it is questionable that this subspecies should be recognized." Bouchard (1976b:587) recognized no subspecies of *Cambarus (C.) bartonii* and placed Hay's *C. (C.) bartonii carinirostris* and *C. (C.) bartonii cavatus* in synonymy with this species. Inasmuch as Jezerinac (1983) and Thoma (1982), who are currently investigating the subspecies of *Cambarus bartonii*, continue to recognize the two non-nominate subspecies, the two taxa are provisionally retained herein.

*Cambarus (Cambarus) bartonii cavatus* Hay

FIGURE 31

*Camparus bartonii*.—Williamson, 1899:47.  
*Cambarus bartoni cavatus* Hay, 1902b:435.  
*Cambarus (Bartonius) bartoni*.—Ortmann 1905c:120 [in part].  
*Cambarus (Cambarus) bartonii cavatus*.—Fowler, 1912:341 [by implication].—Hobbs, 1969b:109, figs. 5, 19n; 1974b:11, fig. 25.  
*Cambarus bartonii cavatus*.—Faxon, 1914:425.  
*Cambarus (Cambarus) bartoni cavatus*.—Ortmann, 1931:127.  
*Cambarus (Cambarus) species* L.—Hobbs, 1969b:109, fig. 5.  
*Cambarus species* K.—Hobbs, 1969b:145 [not p. 109 and fig. 5].

TYPES.—Syntypes, USNM 25017 (male II, female, 2 juv. male).

TYPE LOCALITY.—Powell River, Tazewell, Claiborne County, Tennessee.

RANGE.—From Tennessee and northwestern Georgia to southwestern Virginia and Ohio.

HABITAT.—Streams and springs.

REMARKS.—See "Remarks" under *Cambarus (C.) bartonii carinirostris*.

*Cambarus (Cambarus) howardi* Hobbs and Hall

FIGURE 32

*Cambarus (Cambarus) species* K.—Hobbs, 1969b:109, fig. 5.  
*Cambarus (Cambarus) howardi* Hobbs and Hall, 1969:281, figs. 1-12.—Hobbs, 1974b:11, fig. 26.  
*Cambarus howardi*.—Anonymous, 1971:158.  
*Procambarus howardi*.—Wharton, 1978:46 [lapsus calami].

TYPES.—Holotype, allotype, and morphotype, USNM 129866, 129867, 129868 (male I, female, male II); paratypes, USNM.

TYPE LOCALITY.—Sope Creek, tributary to the Chattahoochee River at Paper Mill Road, 1.5 miles (2.4 km) above mouth, Cobb County, Georgia.

RANGE.—Chattahoochee drainage system from Lumpkin and Hall counties, Georgia, to Lee County, Alabama.

HABITAT.—Streams, usually in riffle areas.

*Cambarus (Cambarus) ortmanni* Williamson

FIGURE 34

*Bartonius ortmanni* Williamson, 1907:749 [*Bartonius* intended as a subgeneric name].  
*Cambarus (Bartonius) ortmanni* Williamson, 1907:754, pl. 35: figs. 1-3.  
*Cambarus (Cambarus) ortmanni*.—Fowler, 1912:341 [by implication].—Hobbs, 1969b:109, figs. 5, 19o; 1974b:11, fig. 28.  
*Cambarus ortmanni*.—Faxon, 1914:394.

TYPES.—Syntypes, CM 74.826 (male I, female), MCZ 7587 (female).

TYPE LOCALITY.—Six-Mile Creek and Craven Ditch, tributary to Wabash River, above Bluffton, Wells County, Indiana.

RANGE.—Southern Indiana and Ohio, and adjacent northern Kentucky.

HABITAT.—Lentic situations and burrows (secondary burrower).

*Cambarus (Cambarus) sciotensis* Rhoades

FIGURE 33

*Cambarus bartoni sciotensis* Rhoades, 1944b:96.  
*Cambarus sciotensis*.—Holt, 1954:170.—Hobbs, Holt, and Walton, 1967:27, fig. 5.  
*Cambarus bartoni sciotensis*.—Hobbs, 1955b:330.  
*Cambarus (Cambarus) sciotensis*.—Hobbs, 1969b:109, figs. 5, 19p; 1974b:12, fig. 27.—Jezerinac and Thoma, 1984:120, figs. 6, 7.

TYPES.—Holotype, allotype, and "morphotype," USNM 81533 (male I, female, male II); paratypes, MCZ, OSM.

TYPE LOCALITY.—Limestone cliffs below O'Shaughnessy Dam, Scioto River, Sec. 3, Liberty Township, Delaware County, Ohio.

RANGE.—Scioto and Little Scioto river drainages in Ohio, and Kanawha drainage in southwestern Virginia and West Virginia. Jezerinac and Thoma (1984:123) stated that this crayfish seems to be restricted to the Scioto and Little Scioto rivers and to tributaries of the Ohio River in Scioto and Lawrence counties, Ohio. They did not mention the populations in the Kanawha Basin of Virginia and West Virginia that formerly have been assigned to this species.

HABITAT.—Riffle areas in small to large streams.

Subgenus *Depressicambarus* Hobbs

*Astacus*.—LeConte, 1856:402.  
*Cambarus*.—Hagen, 1870:83.  
Subgenus *Bartonius* Ortmann, 1905c:97 [in part].  
Subgenus *Cambarus*.—Fowler, 1912:341 [in part].  
Subgenus *Depressicambarus* Hobbs, 1969b:102. [Type species, by original designation, *Astacus latimanus* LeConte, 1856:402. Gender: masculine.]

*Cambarus (Depressicambarus) catagius* Hobbs and Perkins

FIGURE 42

*Cambarus catagius* Hobbs and Perkins, 1967:141, figs. 1-11.  
*Cambarus (Depressicambarus) catagius*.—Hobbs, 1969b:104, figs. 8, 18c; 1974b:12, fig. 36.—Bouchard, 1978a:30, figs. 1d, 2a.

TYPES.—Holotype, allotype, and morphotype, USNM 117779, 117780, 117781 (male I, female, male II); paratypes, USNM, MCZ, BMNH.

TYPE LOCALITY.—Lawn at East Whittington Street in southeastern section of Greensboro, Guilford County, North Carolina.

RANGE.—Known only from the type locality.

HABITAT.—Burrows (primary burrower).

*Cambarus (Depressicambarus) cymatilis* Hobbs

FIGURE 44

*Cambarus (Depressicambarus) cymatilis* Hobbs, 1970b:251, figs. 3, 4;



1974b:12, fig. 37; 1981:100, figs. 23h, 37e, 39a, 43, 44, 198.—Bouchard, 1978a:30, figs. 1c,j,m,2b.

*Cambarus cymatilis*.—Hobbs, 1970b:241.

TYPES.—Holotype, allotype, and morphotype, USNM 129860, 129861, 129862 (male I, female, male II); paratypes, USNM.

TYPE LOCALITY.—Western city limits of Chatsworth, Murray County, Georgia, in lawn and rose garden of Mr. Charles S. Dunn, off Chestnut Street.

RANGE.—Vicinity of Chatsworth, Murray County, Georgia, and along Mill Creek, upstream from State Route 74, Bradley County, Tennessee.

HABITAT.—Burrows (primary burrower).

*Cambarus (Depressicambarus) deweesae* Bouchard and Etnier

FIGURE 46

*Cambarus (Depressicambarus) deweesae* Bouchard and Etnier, 1979:589, fig. 1.

*Cambarus deweesae*.—Bouchard and Etnier, 1979:596.

TYPES.—Holotype and allotype, USNM 148363, 148364 (male I, female), and morphotype, CM 74.1092; paratypes, USNM.

TYPE LOCALITY.—Seepage area near east bank of Poplar Creek at State Highway 61 (south side of highway), Anderson County, Tennessee.

RANGE.—Known from only four localities in the Clinch (Anderson County) and Emory (Roane County) river basins in Tennessee.

HABITAT.—Burrows (primary burrower).

*Cambarus (Depressicambarus) englishi* Hobbs and Hall

FIGURE 36

*Cambarus (Depressicambarus) englishi* Hobbs and Hall, 1972:151, fig. 1a-n.—Hobbs, 1974b:12, fig. 30; 1981:92, figs. 23j, 37a, 39b, 40, 41, 199.—Bouchard, 1978a:31, figs. 1b,h,3c.

*Cambarus englishi*.—Wharton, 1978:46.

TYPES.—Holotype, allotype, and morphotype, USNM 131700, 131701, 132519 (male I, female, male II); paratypes, USNM, BMNH.

TYPE LOCALITY.—Tallapoosa River, in riffle area 1 mile (1.6 km) north of Tallapoosa, Haralson County, Georgia, a few hundred yards east of bridge on State Route 100.

RANGE.—Endemic in the Tallapoosa Basin, where known from two subjacent localities in Georgia and from Clay, Cleburne, and Tallapoosa counties, Alabama.

HABITAT.—Streams.

*Cambarus (Depressicambarus) graysoni* Faxon

FIGURE 49

*Cambarus graysoni* Faxon, 1914:393.—Hobbs, 1974b:14.

*Cambarus (Depressicambarus) striatus*.—Hobbs, 1969b, fig. 8; 1974b, fig. 38.  
*Cambarus (Depressicambarus) graysoni*.—Bouchard, 1976b:589; 1978a:31, figs. 1k, 2c, 3d,e, 4a-l.

TYPES.—Syntypes, MCZ 3593 (male II, 3 female).

TYPE LOCALITY.—Bear Creek, a tributary of Green River, Grayson Springs, Grayson County, Kentucky.

RANGE.—Nashville Basin, Highland Rim, and western edge of the Cumberland Plateau in Kentucky, Tennessee, and Alabama.

HABITAT.—Streams.

*Cambarus (Depressicambarus) halli* Hobbs

FIGURE 35

*Cambarus halli* Hobbs, 1968a:269, figs. 12–22.

*Cambarus (Depressicambarus) halli*.—Hobbs, 1969b:104, figs. 8, 18; 1974b:13, fig. 29; 1981:96, figs. 23i, 37b, 39c, 42, 43, 200.—Bouchard, 1978a:33, figs. 1a,e,f, 3f.

TYPES.—Holotype, allotype, and morphotype, USNM 129288, 129289, 129290 (male I, female, male II); paratypes, USNM.

TYPE LOCALITY.—Tributary of the Tallapoosa River, 1.3 miles (2.1 km) south of the river on U.S. Highway 27, Haralson County, Georgia.

RANGE.—Tallapoosa drainage system in Alabama and Georgia.

HABITAT.—Streams.

*Cambarus (Depressicambarus) harti* Hobbs

FIGURE 47

*Cambarus (Depressicambarus) harti* Hobbs, 1981:104, figs. 23e, 38b, 39d, 41, 45, 201.

TYPES.—Holotype, allotype, and morphotype, USNM 148348, 148349, 148350 (male I, female, male II); paratypes, USNM.

TYPE LOCALITY.—Seepage and wooded area adjacent to the National Fish Hatchery at Warm Springs, Meriwether County, Georgia.

RANGE.—Known from only two localities in the piedmont section of the Chattahoochee and Flint river basins in Meriwether County, Georgia.

HABITAT.—Burrows (primary burrower).

*Cambarus (Depressicambarus) latimanus* (Le Conte)

FIGURE 38

*Astacus latimanus* LeConte, 1856:402.

*Cambarus latimanus*.—Hagen, 1870:83, pl. 1: figs. 43–46; pl. 3: fig. 162.—Faxon, 1885a:69, pl. 2: fig. 3.—Hobbs, 1942b:158, figs. 186–190.

*Cambarus obesus* var. *latimanus*.—Packard, 1880:222.

*Cambarus Jordani* Faxon, 1884:119; 1885a:83, pl. 3: fig. 3. [Type: MCZ 3561 (male II). Type locality: Etowah River, near Rome, Floyd County, Georgia.]

*Cambarus jordani*.—Hay, 1899b:959.

*Cambarus latimus*.—Steele, 1902:7 [erroneous spelling].

*Cambarus (Bartoniuss) latimanus*.—Ortmann, 1905c:120.

*Cambarus (Bartoniuss) jordani*.—Ortmann, 1905c:120 [by implication].

*Cambarus (Cambarus) latimanus*.—Fowler, 1912:341 [by implication].

*Cambarus (Cambarus) jordani*.—Fowler, 1912:341 [by implication].

*Cambarus (Depressicambarus) latimanus*.—Hobbs, 1969b:104, figs. 1f, 8, 13g, 14g, 18f; 1974b:13, fig. 33; 1981:109, figs. 23f, 37c,d, 39e-g, 46-51, 202.—Bouchard 1978a:34, figs. 11, 2a,b, 5-8.

*Cambarus (Depressicambarus) jordani*.—Hobbs, 1969b:104 [by implication].

TYPES.—Syntypes, MCZ 3378 (male I, dry), MCZ 236 (listed by Faxon, 1914:425, as paratypes), ANSP 329 (female).

TYPE LOCALITY.—Athens, Clarke County, Georgia (by subsequent designation, Faxon 1914:395).

RANGE.—Piedmont and coastal plain from the Tar and Cape Fear basins in North Carolina southward to the Altamaha and Apalachicola basins in Georgia and Florida, westward to the Coosa Basin in Alabama.

HABITAT.—Small to moderately large streams and burrows (secondary burrower).

#### *Cambarus (Depressicambarus) obstipus* Hall

FIGURE 37

*Cambarus obstipus* Hall, 1959:221, figs. 1-9.

*Cambarus (Depressicambarus) obstipus*.—Hobbs, 1969b:104, figs. 8, 18g; 1974b:13, fig. 31.—Bouchard, 1978a:37, figs. 1i, 2f, 3g.

TYPES.—Holotype and allotype, USNM 102123, 102124 (male I, female); paratypes, USNM.

TYPE LOCALITY.—Black Warrior River at Underwood's Ferry, 8 miles (12.8 km) downstream from Cordova, Walker County, Alabama.

RANGE.—Known only from the Black Warrior River system in Alabama.

HABITAT.—Streams.

#### *Cambarus (Depressicambarus) pyronotus* Bouchard

FIGURE 40

*Cambarus latimanus*.—Hobbs, 1942b:159 [in part].

*Cambarus (Depressicambarus) pyronotus* Bouchard, 1978a:37, fig. 9.

*Cambarus pyronotus*.—Bouchard, 1978a:27.

TYPES.—Holotype, allotype, and morphotype, USNM 146761, 146762, 146763 (male I, female, male II); paratypes, USNM.

TYPE LOCALITY.—Burrows along tributary of the Apalachicola River south of Indian Ridge, Torreya State Park, Liberty County, Florida.

RANGE.—Known only from the vicinity of the type locality.

HABITAT.—Burrows (primary burrower).

#### *Cambarus (Depressicambarus) reduncus* Hobbs

FIGURE 50

*Cambarus reduncus* Hobbs, 1956b:61, figs. 1-11.

*Cambarus (Depressicambarus) reduncus*.—Hobbs, 1969b:104, figs. 8, 18h; 1974b:13, fig. 39.

TYPES.—Holotype, allotype, and morphotype, USNM 99183, 99184, 99185 (male I, female, male II); paratypes, TU, USNM.

TYPE LOCALITY.—Floodplain pools of Little River, 10.3 miles (16.3 km) west of Winnsboro on State Route 22, Fairfield County, South Carolina.

RANGE.—Piedmont Province from Orange County, North Carolina to Richland County, South Carolina.

HABITAT.—Streams, ponds, and burrows (primary or secondary burrower).

#### *Cambarus (Depressicambarus) reflexus* Hobbs

FIGURE 39

*Cambarus (Depressicambarus) reflexus* Hobbs, 1981:120, figs. 23c, 38a, 39h, 52, 53, 203.

TYPES.—Holotype, allotype, and morphotype, USNM 148116, 148117, 148118 (male I, female, male II); paratypes, USNM.

TYPE LOCALITY.—Savannah River floodplain at U.S. Highway 301, Allendale County, South Carolina.

RANGE.—Coastal plain of the Savannah through the Santee basins in Georgia and South Carolina.

HABITAT.—Burrows (primary burrower).

#### *Cambarus (Depressicambarus) sphenoides* Hobbs

FIGURE 41

*Cambarus bartonii bartonii*.—Hobbs and Shoup, 1942:636, figs. 5, 8.

*Cambarus sphenoides* Hobbs, 1968a:262, figs. 1-11.

*Cambarus (Depressicambarus) sphenoides*.—Hobbs, 1969b:104, figs. 8, 18i; 1974b:13, fig. 35.—Bouchard, 1978a:40, figs. 1g, 3j.

TYPES.—Holotype, allotype, and morphotype, USNM 129325, 129326, 129327 (male I, female, male II); paratypes, USNM.

TYPE LOCALITY.—Tributary to Clear Creek (Emory River drainage), 11.2 miles (17.9 km) north of Crossville, Cumberland County, Tennessee, on U.S. Highway 127.

RANGE.—Stream tributaries of the Cumberland, Emory, Sequatchie, and Tennessee river systems on the Cumberland Plateau in Kentucky and Tennessee.

HABITAT.—Streams.

#### *Cambarus (Depressicambarus) striatus* Hay

FIGURE 48

*Cambarus* sp. [Ashland City, Tennessee].—Faxon, 1885c:358 [lapsus for *Cambarus*].

*Cambarus latimanus striatus* Hay, 1902b:437.

*Cambarus (Bartoniuss) latimanus* var. *striatus*.—Ortmann, 1905c:119 [by implication].

*Cambarus (Cambarus) latimanus striatus*.—Fowler, 1912:341 [by implication].

*Cambarus (Cambarus) bartonii striatus*.—Ortmann, 1931:140.

*Cambarus (Cambarus) bartonii striatus*.—Fleming, 1938:303.



- Cambarus latimanus*.—Fleming, 1939:311 [erroneous spelling].  
*Cambarus latimus*.—Fleming, 1939:319 [erroneous spelling].  
*Cambarus (Cambarus) floridanus* Hobbs, 1941b:114, figs. 1, 4, 5, 8, 9, 16, 19, 22, 25, 31, 32. [Holotype and allotype: USNM 79341. "Morphotype": USNM 79344. Paratypes: USNM, MCZ, FSBC. Type locality: 12 miles (19.2 km) west of Tallahassee on State Route 19, Leon County, Florida.]  
*Cambarus bartonii striatus*.—Hobbs, 1942a:354 [by implication].  
*Cambarus floridanus*.—Hobbs, 1942a:356; 1942b:161, pl. 11: figs. 191–195.  
*Cambarus bartoni striatus*.—Rhoades, 1944a:114.  
*Cambarus striatus*.—Hobbs, 1956b:61.  
*Cambarus (Depressicambarus) striatus*.—Hobbs, 1969b:102, fig. 18j; 1974b:14 [not fig. 38, see *C. (D.) graysoni* herein]; 1981:127, figs. 23g, 38c,d, 39i, 53–55, 204.—Bouchard, 1978a:40, figs. 2d,e, 10–14.  
*Cambarus (Depressicambarus) floridanus*.—Hobbs, 1969b:104, figs. 8, 18d.

TYPES.—Syntypes, USNM 20519 (male I, 3 male II, 4 female), MCZ 7348 (male I, male II, 3 female).

TYPE LOCALITY.—Nashville, Davidson County, Tennessee.

RANGE.—From the Savannah and Ochlockonee basins in South Carolina, Georgia, and Florida westward into Mississippi and northward through Tennessee into the Green watershed in Kentucky.

HABITAT.—Streams and burrows (primary burrower in the southern part of the range).

#### *Cambarus (Depressicambarus) strigosus* Hobbs

FIGURE 45

- Cambarus* sp.—Wharton, 1978:46.  
*Cambarus (Depressicambarus) strigosus* Hobbs, 1981:134, figs. 23d, 38e, 39j, 41, 56, 205.

TYPES.—Holotype, allotype, and morphotype, USNM 148284, 148574, 148575 (male I, female, male II); paratypes, USNM.

TYPE LOCALITY.—Roadside ditch within 30 meters of Susan Smith Branch (tributary to Long Creek and Broad River) west of State Route 17 on unnumbered county road, Wilkes County, Georgia.

RANGE.—Known from only five localities in the Broad and Little river basins in Elbert, Oglethorpe, and Wilkes counties, Georgia.

HABITAT.—Burrows (primary burrower).

#### *Cambarus (Depressicambarus) truncatus* Hobbs

FIGURE 43

- Cambarus (Depressicambarus) truncatus* Hobbs, 1981:140, figs. 23b, 38f, 39k,m, 41, 57, 206.

TYPES.—Holotype, allotype, and morphotype, 116966, 146649, 146650; paratypes, USNM.

TYPE LOCALITY.—Roadside ditch 15.4 miles (24.6 km) east of Irwinton, Wilkinson County, Georgia, on State Route 57.

RANGE.—Known from only four localities on the Fall Line Hills District in the Oconee Basin of Laurens and Wilkinson counties, Georgia.

HABITAT.—Burrows (primary burrower).

#### Subgenus *Erebicambarus* Hobbs

- Cambarus*.—Hay, 1902a:232.  
 Subgenus *Bartoni* Ortmann, 1905c:120.  
 Subgenus *Cambarus*.—Fowler, 1912:341.  
 Subgenus *Bartoni*.—Rioja, 1941:193 [erroneous spelling].  
 Subgenus *Erebicambarus* Hobbs, 1969b:99 [Type species, by original designation, *Cambarus bartoni tenebrosus* Hay, 1902a:232. Gender: masculine.]  
 Subgenus *Erebicambarus*.—Hobbs III, 1975:291 [erroneous spelling].  
 Subgenus *Erebicambarus*.—Hobbs III, 1980:148 [erroneous spelling].

#### *Cambarus (Erebicambarus) hubbsi* Creaser

FIGURE 51

- Cambarus (Bartoni) hubbsi* Creaser, 1931a:4, figs. 7–12.  
*Cambarus hubbsi*.—Hobbs, 1942a:356.—Williams, 1954:904, figs. 233, 235–245.—Pflieger, 1987a:23; 1987b:7.  
*Cambarus (Erebicambarus) hubbsi*.—Hobbs, 1969b:100, fig. 17d; 1974b:14, fig. 40.—Gardner, 1986:19.

TYPES.—Holotype and allotype, USNM 98332, 98333 (male I, female); paratypes, USNM.

TYPE LOCALITY.—Little Creek, tributary to St. Francis River, 1 mile (1.6 km) northeast of Chloride, Iron County, Missouri.

RANGE.—Southeastern Missouri and northeastern Arkansas.  
 HABITAT.—Streams, burrows, and caves.

#### *Cambarus (Erebicambarus) hubrichti* Hobbs

FIGURE 53

- Cambarus hubrichti* Hobbs, 1952c:689, figs. 1–8.—Hobbs and Barr, 1960:23, figs. 21–30.—Pflieger, 1987a:24; 1987b:8.  
*Cambarus hubrichti*.—Hobbs, 1952c:693 [erroneous spelling].  
*Cambarus Hubrichtii*.—Cooper and Poulson, 1968:130, fig. 8.  
*Cambarus (Erebicambarus) hubrichti*.—Hobbs, 1969b:100, fig. 17e; 1974b:14, fig. 42.—Gardner, 1986:19, 20 [fig.].

TYPES.—Holotype and allotype, USNM 92295, 92296 (male II, female); paratypes, USNM.

TYPE LOCALITY.—Stream in Lewis Cave, 15 miles (24 km) northwest of Doniphan, Ripley County, Missouri.

RANGE.—Current, Eleven Point, and Meramec river basins in Carter, Oregon, Phelps, Pulaski, Ripley, Shannon, and Texas counties, Missouri.

HABITAT.—Subterranean waters and springs.

#### *Cambarus (Erebicambarus) laevis* Faxon

FIGURE 56

- ?*Cambarus bartoni brevis* Rietz, 1912 [nomen nudum; see Page, 1985b:335].  
*Cambarus bartonii laevis* Faxon, 1914:391.  
*Cambarus (Cambarus) bartoni laevis*.—Ortmann, 1931:143.  
*Cambarus bartoni laevis*.—Fleming, 1939:311.  
*Cambarus (Erebicambarus) laevis*.—Hobbs, 1969b:100, figs. 6, 17f; 1974b:15, fig. 46.  
*Cambarus laevis*.—Hobbs III, 1971:140.  
*Cambarus (erebicambarus) laevis*.—Hobbs III, 1973:58 [lapsus].

*Cambarus laevi*.—Holt, 1973:250 [erroneous spelling].  
*Cambarus (Erebicambarus) laevis*.—Hobbs III, 1975:280.  
*Cambarus (Erebicambarus) laevis*.—Hobbs III, 1975:291 [erroneous spelling].  
*Cambarus (Erebicambarus) laevis*.—Hobbs III, 1980:148 [erroneous spelling].

TYPES.—Holotype and paratype, MCZ 3812 (holotypic male II, female); paratypes, MCZ, USNM.

TYPE LOCALITY.—Bloomington, Monroe County, Indiana.

RANGE.—Southern parts of Illinois(?) and Indiana, and northern Kentucky(?).

HABITAT.—Streams, springs, and caves.

REMARKS.—Page (1985b:428) tentatively referred the Illinois populations possibly assignable to this taxon to *Cambarus (E.) tenebrosus*, and as pointed out by him, it is probable that when a careful study of the subgenus *Erebicambarus* is made, *C. (E.) laevis* will be declared a synonym of *C. (E.) tenebrosus*. Until such a study is conducted, I deem it advisable to maintain specific status for it. Jezerinac and Thoma (1984:121) omitted this crayfish in their key to the genera *Cambarus* and *Fallicambarus* in Ohio because all of the material that they examined from the state that had been assigned to *C. (E.) laevis* was "assignable to either *C. (C.) ortmanni* or *C. (C.) bartonii cavatus*."

#### *Cambarus (Erebicambarus) ornatus* Rhoades

FIGURE 55

*Cambarus bartoni ornatus* Rhoades, 1944a:144, fig. 10a-f.  
*Cambarus bartonii ornatus*.—Hobbs and Shoup, 1947:145.  
*Cambarus ornatus*.—Hobbs and Barr, 1960:15.  
*Cambarus (Erebicambarus) ornatus*.—Hobbs, 1969b:100, figs. 6, 17g; 1974b:15, fig. 45.

TYPES.—Holotype, allotype, and "morphotype," USNM 81330, 81331, 81332 (male I, female, male II); paratypes, MCZ, USNM, OSM.

TYPE LOCALITY.—Ellis Branch, 4 miles (6.4 km) west of Carrollton, Carroll County, Kentucky.

RANGE.—Ohio Basin from the lower Kentucky River system to the Salt River, Kentucky.

HABITAT.—Intermittent streams.

#### *Cambarus (Erebicambarus) rusticiformis* Rhoades

FIGURE 52

*Cambarus rusticiformis* Rhoades, 1944a:133, fig. 8a-f.—Page, 1985b:432, figs. 164–166.  
*Cambarus (Erebicambarus) rusticiformis*.—Hobbs, 1969b:100, figs. 2a, 6, 13h, 17h; 1974b:15, fig. 41.

TYPES.—Holotype, allotype, and "morphotype," USNM 81324, 81325, 81326 (male I, female, male II); paratypes, MCZ, OSM.

TYPE LOCALITY.—Little River, 0.5 mile (0.8 km) west of Cadiz, Trigg County, Kentucky.

RANGE.—Cumberland and Green drainage systems in Kentucky and Tennessee, and Ohio River in southern Illinois.

HABITAT.—Swift streams.

#### *Cambarus (Erebicambarus) tenebrosus* Hay

FIGURE 54

*Cambarus bartoni tenebrosus* Hay, 1902a:232.  
*Cambarus (Bartoni) bartoni*.—Ortmann, 1905c:120 [in part].  
*Cambarus (Cambarus) bartoni tenebrosus*.—Fowler, 1912:341 [by implication].  
*Cambarus bartonii tenebrosus*.—Faxon, 1914:424.  
*Cambarus tenebrosus*.—Garman, 1920:42.—Hobbs, 1959:898.—Page, 1985b:428, figs. 160–163.  
*Cambarus Bartoni tenebrosus*.—Chappuis, 1927:92.  
*Cambarus (Bartoni) Bartoni tenebrosus*.—Fage, 1931:373.  
*Cambarus (Cambarus) bartoni tenebrosus*.—Ortmann, 1931:145.  
*Cambarus (Bartontius) Bartoni tenebrosus*.—Rioja, 1941:193 [erroneous spelling].  
*Cambarus (Cambarus) cahni* Rhoades, 1941b:146, fig. 36a–d. [Holotype and allotype: USNM 80031, 80032 (male II, female). Paratypes: MCZ, Alabama Mus. Nat. Hist., ANSP, Leslie Hubricht, OSM. Type locality: Belgreen Cave, NW 1/4, SW 1/4, Sec. 12, T. 7S, R. 13W, Franklin County, Alabama.]  
*Cambarus (Cambarus) bartonii tenebrosus*.—Hobbs, 1941b:114.  
*Cambarus cahni*.—Hobbs, 1942a:354.—Hobbs and Barr, 1960:25, figs. 31–37.  
*Cambarus (Bartoni) bartoni tenebrosus*.—Hart, 1962:121.  
*Cambarus (Erebicambarus) tenebrosus*.—Hobbs, 1969b:100, figs. 6, 14h, 17i; 1974b:15, fig. 43.  
*Cambarus (Erebicambarus) cahni*.—Hobbs, 1969b:100, figs. 6, 17c.  
*Cambarus tenebrosus*.—Brodsky, 1981:49 [erroneous spelling].

TYPES.—Syntypes, USNM 22346 (male II, 2 female).

TYPE LOCALITY.—Echo River, Mammoth Cave, Edmonson County, Kentucky.

RANGE.—Mammoth Cave southward to northern Alabama. Illinois records based on assumption of *C. (E.) laevis* being a synonym.

HABITAT.—Streams and subterranean waters (troglophilic).

REMARKS.—See "Remarks" under *Cambarus (E.) laevis*.

#### Subgenus *Exilicambarus* Bouchard and Hobbs

Subgenus *Exilicambarus* Bouchard and Hobbs, 1976:2. [Type species, by original designation, *Cambarus (Exilicambarus) cracens* Bouchard and Hobbs, 1976:2. Gender: masculine.]

#### *Cambarus (Exilicambarus) cracens* Bouchard and Hobbs

FIGURE 57

*Cambarus (Exilicambarus) cracens* Bouchard and Hobbs, 1976:2, figs. 1, 2.

TYPES.—Holotype, allotype, and morphotype, USNM 146082, 146083, 146084 (male I, female, male II); paratypes, USNM, BMNH.

TYPE LOCALITY.—Short Creek at State Route 75, 1.1 mile (1.8 km) southwest of the junction with State Route 68 (Sec. 36, T. 8S, R. 4E), Marshall County, Alabama.

RANGE.—Southeastern tributaries of Guntersville Lake (impounded Tennessee River) in DeKalb and Marshall counties, Alabama.

HABITAT.—Streams.

### Subgenus *Hiaticambarus* Hobbs

*Cambarus*.—Girard, 1852:90.

Subgenus *Bartoni* Ortmann, 1905c:97 [in part].

Subgenus *Cambarus*.—Fowler, 1912:341 [in part].

Subgenus *Hiaticambarus* Hobbs, 1969b:105; 1981:145. [Type species, by original designation, *Cambarus longulus* Girard, 1852:90. Gender: masculine.]

*Cambaroides*.—Unestam, 1969:204 [lapsus].

#### *Cambarus (Hiaticambarus) chasmodactylus* James

FIGURE 64

*Cambarus longulus chasmodactylus* James, 1966:14, fig. 1, pl. 1b,d,e,q,u-z,zz.  
*Cambarus chasmodactylus*.—Hobbs, 1968b:K17.

*Cambarus (Hiaticambarus) chasmodactylus*.—Hobbs, 1969b:106, figs. 10, 18k; 1974b:15, fig. 50.

TYPES.—Holotype, allotype, and morphotype, USNM 115513, 115514, 115516 (male I, female, male II); paratypes, MCZ, TU, IBM, USNM, Hugo L. James.

TYPE LOCALITY.—East Fork of the Greenbrier River, 9.7 miles (15.5 km) west of Virginia state line on U.S. Highway 250, Pocahontas County, West Virginia.

RANGE.—New River drainage system in northwestern North Carolina and Virginia, and the Blue Stone and Greenbrier basins in eastern West Virginia.

HABITAT.—Rocky streams.

#### *Cambarus (Hiaticambarus) coosawatae* Hobbs

FIGURE 58

*Cambarus (Hiaticambarus) coosawatae* Hobbs, 1981:150, figs. 22b, 58a, 59, 60, 207.

TYPES.—Holotype, allotype, and morphotype, USNM 148112, 148113, 148114 (male I, female, male II); paratypes, USNM.

TYPE LOCALITY.—Cartecay River, 6 miles (9.6 km) east southeast of Ellijay, just off Route S1010, near Flint Hill Church, Gilmer County, Georgia.

RANGE.—Known only from the Coosawattee watershed (Coosa River basin) in Gilmer County, Georgia.

HABITAT.—Streams (primarily riffle areas).

#### *Cambarus (Hiaticambarus) fasciatus* Hobbs

FIGURE 59

*Cambarus (Hiaticambarus) fasciatus* Hobbs, 1981:156, figs. 22e, 58b, 60, 61, 208.

TYPES.—Holotype, allotype, and morphotype, USNM 147917, 147918, 147919 (male I, female, male II); paratypes, USNM.

TYPE LOCALITY.—Etowah River, 0.2 mile (0.32 km) west of State Route 52 on unpaved road near Davis Chapel, Lumpkin County, Georgia.

RANGE.—Etowah River basin in northwestern Georgia.

HABITAT.—Streams.

### *Cambarus (Hiaticambarus) girardianus* Faxon

FIGURE 60

*Cambarus Girardianus* Faxon 1884:117; 1885a:78, pl. 4: fig. 1, pl. 9: fig. 2a, 2a'.

*Cambarus girardianus*.—Faxon 1898:650.

*Cambarus extraneus girardianus*.—Faxon 1898:650.

*Cambarus (Cambarus) extraneus girardianus*.—Fowler, 1912:341 [by implication].

*Cambarus (Bartoni) girardianus*.—Ortmann, 1931:97.

*Cambarus extraneus Girardianus*.—Fleming, 1938:299 [erroneous spelling].

*Cambarus (Hiaticambarus) girardianus*.—Hobbs, 1969b:106, figs. 10, 18l; 1974b:16, fig. 47; 1981:162, figs. 22f, 58c, 60, 62, 63, 209.

TYPES.—Syntypes, MCZ 3560 (male II, female), USNM 4882 (male II, 2 female).

TYPE LOCALITY.—Cypress Creek, Lauderdale County, Alabama.

RANGE.—Tennessee River drainage system from northeastern Mississippi to Georgia and northward to the vicinity of Knoxville, Tennessee. Possibly the dominant *Hiaticambarus* in the upper Coosa Basin in Alabama is referable to this species.

HABITAT.—Streams.

### *Cambarus (Hiaticambarus) longirostris* Faxon

FIGURE 61

*Cambarus Bartonii*, var. *longirostris* Faxon, 1885a:64.

*Cambarus bartonii longirostris*.—Faxon, 1890:623.

*Cambarus bartonii spirostris*.—Faxon 1890:623 [lapsus for *C. b. longirostris*].

*Cambarus longulus longirostris*.—Hay, 1899b:959.—James, 1966:9, fig. 2a,b, pl. 1c,f,g,n,o,r,s.

*Cambarus (Bartoni) bartoni longirostris*.—Ortmann, 1905c:135 [by implication].

*Cambarus (Cambarus) bartonii longirostris*.—Fowler, 1912:341 [by implication].

*Cambarus (Cambarus) longulus longirostris*.—Ortmann, 1931:121.

*Cambarus longerosilis*.—Brimley, 1938:503 [erroneous spelling].

*Cambarus longulus longerosilis*.—Schurr and Stamper, 1962:474 [erroneous spelling].

*Cambarus bartonii* var. *longirostris*.—James, 1966:2.

*Cambarus spirostris*.—James, 1966:2.

*Cambarus longirostris*.—James, 1966:2.

*Cambarus longulus longirosilis*.—James, 1966:8 [erroneous spelling].

*Cambarus (Hiaticambarus) longirostris*.—Hobbs, 1969b:106, figs. 10, 18m; 1974b:16, fig. 48.

*Cambarus (Hiaticambarus) girardianus*.—Bouchard, 1976a:572 [in part]; 1976b:588 [in part].

TYPE.—Holotype, MCZ 3629 (male II).

TYPE LOCALITY.—“Eastern Tennessee and West Virginia” (Faxon, 1885a). Restricted to Doe River, Elizabethton, Carter County, Tennessee, designated by Ortmann, 1931:121.

RANGE.—Tennessee River Basin upstream from below the mouth of the Sequatchie River: in Georgia, Tennessee, North Carolina, and Virginia. Introduced into headwaters of the Savannah River in South Carolina.

HABITAT.—Rocky segments of streams.



*Cambarus (Hiaticambarus) longulus* Girard

FIGURE 62

- Cambarus longulus* Girard, 1852:90.  
*Cambarus Bartonii longulus*.—Faxon, 1885a:66 [by implication].  
*Cambarus longulus longulus*.—Hay 1899b:959 [by implication].—James, 1966:4, fig. 2c, pl. 1a, h-m, p, t, mm.  
*Cambarus (Bartonius) longulus*.—Ortmann, 1905c:120.  
*Cambarus (Cambarus) longulus longulus*.—Fowler, 1912:341 [by implication].—Ortmann, 1931:106.  
*Cambarus bartonii longulus*.—Faxon, 1914:387.  
*Cambarus bartoni longulus*.—Ortmann, 1931:118.  
[*Cambarus longulus*] *longulus*.—James, 1966:22 [erroneous spelling].  
*Cambaroides longulus*.—Unestam, 1969:204 [lapsus for *Cambarus*].  
*Cambarus (Hiaticambarus) longulus*.—Hobbs, 1969b:106, figs. 1a, 10, 13c, 14c, 18n; 1974b:16, fig. 49.

TYPES.—Probably destroyed in the Chicago fire, 1871 (Faxon, 1914:124).

TYPE LOCALITY.—“Middle States” (Girard, 1852). South River, Waynesboro, Augusta County, Virginia, designated by Ortmann, 1931. Emended by Hobbs (1967a:129) to Rockfish River, south of Afton, Nelson County, Virginia.

RANGE.—Atlantic watershed from the James drainage in Virginia and West Virginia south to the Yadkin Basin in North Carolina, in mountains and piedmont.

HABITAT.—Rocky areas of streams.

*Cambarus (Hiaticambarus) manningi* Hobbs

FIGURE 63

- Untitled color photograph.—Bouchard in Anonymous, 1978:175.  
*Cambarus (Hiaticambarus) manningi* Hobbs, 1981:175, figs. 22c, 58e, 65, 67, 68, 211.

TYPES.—Holotype, allotype, and morphotype, USNM 147911, 147912, 147913 (male I, female, male II); paratypes, BMNH, USNM.

TYPE LOCALITY.—Little Cedar Creek (Coosa River basin) near school for deaf on outskirts of Cave Spring, Floyd County, Georgia.

RANGE.—Coosa River basin in northwestern Georgia, southeastern Tennessee, and northeastern Alabama.

HABITAT.—Rocky areas of streams.

*Cambarus (Hiaticambarus) speciosus* Hobbs

FIGURE 65

- Cambarus (Hiaticambarus) speciosus* H.—Hobbs, 1969b:106, 141, fig. 10.  
*Cambarus (Hiaticambarus) speciosus* Hobbs, 1981:181, figs. 22g, 58f, 65, 69, 212.

TYPES.—Holotype, allotype, and morphotype, USNM 146023, 146024, 146025 (male I, female, male II); paratypes, USNM.

TYPE LOCALITY.—Talking Rock Creek at State Route 5, Pickens County, Georgia.

RANGE.—Coosawattee River basin in Pickens, Gilmer, and

Murray counties, Georgia.

HABITAT.—Moderately to swiftly flowing streams.

Subgenus *Jugicambarus* Hobbs

- Astacus*.—Erichson, 1846:87.  
Subgenus *Cambarus* Erichson, 1846:96.—Fowler, 1912:341 [in part].  
*Cambarus*.—Girard, 1852:88 [in part].  
Subgenus *Bartonius* Ortmann, 1905c:97 [in part].  
Subgenus *Jugicambarus* Hobbs, 1969b:106. [Type species, by original designation, *Cambarus bartonii asperimanus* Faxon, 1914:391. Gender: masculine.]  
Subgenus *Depressicambarus*.—Hobbs and Hall, 1969:287.  
Subgenus *Veticambarus*.—Hobbs, 1970b:243.  
Subgenus *Jugocambarus*.—Hart and Hart, 1974:74 [erroneous spelling].

*Cambarus (Jugicambarus) asperimanus* Faxon

FIGURE 72

- Cambarus bartonii asperimanus* Faxon, 1914:391.  
*Cambarus (Cambarus) bartoni asperimanus*.—Ortmann, 1931:137.  
*Cambarus asperimanus*.—Brimley, 1938:503.  
*Cambarus (Jugicambarus) asperimanus*.—Hobbs, 1969b:107, figs. 1d, 9, 13d, 14d, 18o; 1974b:16, fig. 57; 1981:189, figs. 24b, 70a, 71, 72, 213.

TYPES.—Syntypes, USNM 47375 (2 male I).

TYPE LOCALITY.—Flat Creek, Montreat, Buncombe County, North Carolina.

RANGE.—Mountains of North Carolina, South Carolina, and Georgia, in the headwaters of the French Broad, Little Tennessee, Catawba, Broad, Saluda, and Savannah rivers and in the Watauga Basin in Tennessee.

HABITAT.—Seepage areas and mountain streams.

*Cambarus (Jugicambarus) batchi* Schuster

FIGURE 80

- Cambarus (Jugicambarus) batchi* Schuster, 1973:24, fig. 3; 1976:227, fig. 1.

TYPES.—Holotype, allotype, and morphotype, USNM 144390, 144391, 144392 (male I, female, male II); paratypes, USNM, MMZ, UTM, Donald Batch.

TYPE LOCALITY.—Burrows around ponds in the Central Kentucky Wildlife Management Area, off U.S. Highway 421 approximately 2.5 miles (4.0 km) southeast of Kingston, Madison County, Kentucky.

RANGE.—Known only from the type locality.

HABITAT.—Burrows (primary burrower).

*Cambarus (Jugicambarus) bouchardi* Hobbs

FIGURE 66

- Cambarus (Veticambarus) bouchardi* Hobbs, 1970b:245, figs. 1, 2.  
*Cambarus bouchardi*.—Hobbs, 1970b:241.  
*Cambarus (Jugicambarus) bouchardi*.—Bouchard, 1973a:105.—Hobbs, 1974b:17, fig. 51.

TYPES.—Holotype, allotype, and morphotype, USNM

130295, 130296, 130297 (male I, female, male II); paratypes, USNM.

TYPE LOCALITY.—Perkins Creek, 6.9 miles (11 km) north of Oneida, Scott County, Tennessee, on U.S. Highway 27.

RANGE.—Known only from the Big South Fork of the Cumberland basin in Scott County, Tennessee.

HABITAT.—Streams.

*Cambarus (Jugicambarus) brachydactylus* Hobbs

FIGURE 74

*Cambarus brachydactylus* Hobbs, 1953c:20, pl. 1: figs. 1–10.

*Cambarus (Jugicambarus) brachydactylus*.—Hobbs, 1969b:107, figs. 9, 18p; 1974b:17, fig. 58.

TYPES.—Holotype and allotype, USNM 93155 (male I, female); morphotype, USNM 93156 (male II); paratypes, MCZ, USNM, TU.

TYPE LOCALITY.—Louise Creek, 13.9 miles (22.2 km) south of Clarksville, Montgomery County, Tennessee.

RANGE.—Tributaries of the Cumberland River on the western Highland Rim in Montgomery and Dickson counties, Tennessee.

HABITAT.—Riffle areas of streams.

*Cambarus (Jugicambarus) carolinus* (Erichson)

FIGURE 77

*Astacus Carolinus* Erichson, 1846:87.

*Astacus (Cambarus) Carolinus* Erichson, 1846:96.

*Astacus (Cambarus) carolinus*.—Dana, 1852:522 [by implication].

*Cambarus carolinus*.—Girard, 1852:88.—Deweese, 1972:1, figs. 1, 2, 5.

*Cambarus Carolinus*.—Hagen, 1870:8.

*Cambarus (Bartoniuss) carolinus*.—Ortmann, 1905c:120.

*Cambarus carolinensis*.—Adams, 1907:899 [erroneous spelling].

*Cambarus (Cambarus) carolinus*.—Fowler, 1912:341 [by implication].

*Cambarus carolinus carolinus*.—Faxon, 1914:339.

*Cambarus (Jugicambarus) carolinus*.—Hobbs, 1969b:107 [in part], figs. 9, 19a; 1974b:17, fig. 62.—Hobbs and Bouchard, 1973:51, figs. 3, 4.

TYPES.—Not extant. Topotypes, USNM 144164 (2 male I, female, female with young), and others.

TYPE LOCALITY.—Greenville, Greenville County, South Carolina. Restricted by Hobbs and Bouchard (1973:55) to “along Wildcat Creek, 8.8 miles (14.1 km) north of the junction of U.S. Highway 29 and State Route 101 on latter . . . .”

RANGE.—From the upper Broad River basin in the northern part of South Carolina westward into North Carolina and Tennessee (south of the French Broad River) almost to the Tennessee River (see Deweese, 1972).

HABITAT.—Burrows (primary burrower).

*Cambarus (Jugicambarus) causeyi* Reimer

FIGURE 83

*Cambarus causeyi* Reimer, 1966:9, figs. 1–8.

*Cambarus (Jugicambarus) causeyi*.—Hobbs, 1969b:107, fig. 19b; 1974b:17, fig. 65.

TYPES.—Holotype, allotype, USNM 116678, 116679 (male I, female); paratype (juvenile female), USNM.

TYPE LOCALITY.—Spring and natural pond, 4 miles (6.4 km) west of Sandgap, Pope County, Arkansas, on State Route 124.

RANGE.—Known only from the Arkansas River basin in Pope County, Arkansas.

HABITAT.—Streams and complex burrows.

*Cambarus (Jugicambarus) conasaugaensis* Hobbs and Hobbs

FIGURE 71

*Cambarus conasaugaensis* Hobbs and Hobbs, 1962:41, figs. 1–10.

*Cambarus (Jugicambarus) conasaugaensis*.—Hobbs, 1969b:107, figs. 9, 19c; 1974b:17, fig. 56; 1981:192, figs. 24c, 70b, 72, 73–76, 214.

*Cambarus conasougaensis*.—Schuster, 1973:9 [erroneous spelling].

TYPES.—Holotype, allotype, and morphotype, USNM 107156, 107157, 107158 (male I, female, male II); paratypes, BMNH, USNM.

TYPE LOCALITY.—Small cascading, but sluggish, tributary of Holly Creek (to Conasauga River), 2 miles (3.2 km) east of Chatsworth, Murray County, Georgia, on U.S. Highway 76.

RANGE.—Headwater tributaries of the Conasauga, Coosawattee, and Etowah rivers in Dawson, Fannin, Gilmer, Murray, Lumpkin, and Pickens counties, Georgia, and in the Hiwassee Basin in Bledsoe and Polk counties, Tennessee.

HABITAT.—Streams.

*Cambarus (Jugicambarus) crinipes* Bouchard

FIGURE 73

*Cambarus bartonii bartonii*.—Hobbs and Shoup, 1942:636, fig. 6, 7.

*Cambarus crinipes* Bouchard, 1973a:106, fig. 1.

*Cambarus (Jugicambarus) crinipes* Bouchard, 1973a:109.

TYPES.—Holotype, allotype, and morphotype, USNM 132342, 132343, 132344 (male I, female, male II); paratypes, USNM, UTM.

TYPE LOCALITY.—White Oak Creek, a tributary of Clear Fork Creek (Big South Fork of the Cumberland River system) at U.S. Highway 27 in Sunbright, Morgan County, Tennessee.

RANGE.—Headwaters of the East Fork of the Obey River, Clear Creek (Emory River system) and Clear Fork Creek (Big South Fork of the Cumberland River in Cumberland, Fentress, Morgan, Overton, Pickett, Putnam, and Scott counties, Tennessee, and Rockcastle County, Kentucky.

HABITAT.—Streams, mostly small.

*Cambarus (Jugicambarus) cryptodytes* Hobbs

FIGURE 82

*Cambarus (Cambarus) cryptodytes* Hobbs, 1941b:110, figs. 2, 3, 7, 11, 13, 15, 18, 21, 24, 28, 29; 1942b:162, pl. 11: figs. 196–200; 1974b:18, fig. 64; 1981:197, figs. 24e, 77, 87, 215.—Hobbs and Barr, 1960:31, figs. 48–57.—Hobbs, Hobbs, and Daniel, 1977:83, fig. 40.

*Cambarus cryptodytes* Hobbs, 1941b:113.—Caine, 1974:12, 43, 62.—Franz and Lee, 1982:56, 69.

*Cambarus (Jugicambarus) cryptodytes*.—Hobbs, 1969b:107, figs. 9, 19d; 1981:197, figs. 24e, 77, 87, 215.

*cambarus cryptodytes*.—Padgett, 1970:19 [lapsus calami].

*Cambarus (Jugicambarus) cryptodytes*.—Hobbs, 1974b, fig. 64 [erroneous spelling].

TYPES.—Holotype, allotype, and "morphotype," USNM 79339, 79340, 79343 (male I, female, male II); paratypes, MCZ, USNM.

TYPE LOCALITY.—R.W. Williams farm, 2 miles (3.2 km) south of Graceville, Jackson County, Florida (NW  $\frac{1}{4}$ , SW  $\frac{1}{4}$ , NE  $\frac{1}{4}$ , Sec. 15, T. 6W, R. 13W), 0.2 mi (320 m) W of St. Rte. 77 on St. Rte. 277.

RANGE.—Known from several caves in Jackson and Washington counties, Florida, and Climax Cave, 3 miles (4.8 km) north of Climax, Decatur County, Georgia.

HABITAT.—Subterranean waters.

### *Cambarus (Jugicambarus) distans* Rhoades

FIGURE 68

*Cambarus distans* Rhoades, 1944a:136, fig. 9a-f.—Bouchard, 1976a:573; 1976b:585.—Hobbs, 1981:200, fig. 78.

*Cambarus diistans*.—Rhoades, 1944a:139 [erroneous spelling].

*Cambarus (Jugicambarus) distans*.—Hobbs, 1969b:107, figs. 9, 19e; 1974b:18, fig. 53.

TYPES.—Holotype, allotype, and "morphotype," USNM 81327, 81329, 81328 (male I, female, male II); paratypes, CM, USNM, OSM.

TYPE LOCALITY.—"Cumberland River and small tributary, just above Cumberland Falls, McCreary County, Kentucky" (Rhoades, 1944a:139).

RANGE.—Kentucky, Cumberland, and Tennessee river drainages in Kentucky and Tennessee southward to Sand Mountain in Alabama and Georgia.

HABITAT.—Streams.

### *Cambarus (Jugicambarus) dubius* Faxon

FIGURE 78

*Cambarus dubius* Faxon, 1884:114; 1885a:70, pl. 4: fig. 3; pl. 8: figs. 7, 7'.—Deweese, 1972:1, figs. 1b-1, 2c-h, 3, 4, 5b-h, 6-16.

*Cambarus carolinus dubius*.—Faxon, 1914:396, 425.

*Cambarus (Jugicambarus) dubius*.—Hobbs and Bouchard, 1973:62.—Hobbs, 1974b:18, fig. 60.

*Cambrus dubius*.—Peters, 1975:iii [erroneous spelling].

TYPES.—Holotype, MCZ 3631 (male I).

TYPE LOCALITY.—Terra Alta (Cranberry Summit), Preston County, West Virginia.

RANGE.—Poorly understood, but extending southward through the Allegheny Mountains from southwestern Pennsylvania and Kentucky into southwestern Virginia, northwestern North Carolina and as far south in Tennessee as the junction of the Clinch and Holston rivers, and westward on the Cumber-

land Plateau to headwaters of the South Fork of the Cumberland and Caney Fork rivers in Fentress and Cumberland counties, Tennessee. (See Deweese, 1972.)

HABITAT.—Burrows (primary burrower).

### *Cambarus (Jugicambarus) friaufi* Hobbs

FIGURE 75

*Cambarus friaufi* Hobbs, 1953c:24, figs. 11-18.

*Cambarus (Jugicambarus) friaufi*.—Hobbs, 1969b:107, figs. 9, 19f; 1974b:18, fig. 59.

TYPES.—Holotype and allotype, USNM 93157 (male I, female); paratypes, MCZ, USNM.

TYPE LOCALITY.—Small stream tributary of Cumberland River at Elmwood, Smith County, Tennessee.

RANGE.—Highland Rim in Smith, De Kalb, Cannon, Humphreys, and Stewart counties, Tennessee.

HABITAT.—Swift, pebbly reaches of small streams.

### *Cambarus (Jugicambarus) gentryi* Hobbs

FIGURE 81

*Cambarus (Jugicambarus) gentryi* Hobbs, 1970a:163, fig. 1; 1972b:125, fig. 109b; 1974b:18, fig. 63.

*Cambarus gentryi*.—Hobbs and Bouchard, 1973:54.

TYPES.—Holotype, allotype, and morphotype, USNM 130283, 130284, 130285 (male I, female, male II); paratypes, USNM.

TYPE LOCALITY.—Boggy area below seepage along small tributary to Turnbull Creek (Harpeth-Cumberland drainage system), 1 mile (1.6 km) west of Kingston Springs, Cheatham County, Tennessee.

RANGE.—Portions of the Cumberland (Stones River, Harpeth River, and Yellow Creek) and Duck river basins in the Nashville Basin and Western Highland Rim of Tennessee.

HABITAT.—Burrows (primary burrower).

### *Cambarus (Jugicambarus) monongalensis* Ortmann

FIGURE 79

*Cambarus monongalensis* Ortmann, 1905a:395.

*Cambarus (Bartonius) monongalensis*.—Ortmann, 1905c:120;

1906b:398, pl. B: fig. 4, pl. 39: figs. 4, 10, pl. 40: fig. 5, pl. 41: figs. 2-4.

*Cambarus (Cambarus) monongalensis*.—Fowler, 1912:341 [by implication].

*Cambarus carolinus monongalensis*.—Faxon 1914:396.

*Cambarus carolinus monongalensis*.—Hand, 1954:437 [erroneous spelling].

*Cambarus mongalensis*.—Meredith and Schwartz, 1959:1 [erroneous spelling].

*Cambarus (Jugicambarus) monongalensis*.—Hobbs, 1969b:109, figs. 9, 19g; 1974b:18, fig. 61.

TYPES.—Syntypes, CM 74.316, USNM 30613 (male I, 2 female), MCZ 6953 (male I, female), ZIAS 1/44968 (4 specimens), ANSP 1601 (male I, 3 females).

TYPE LOCALITY.—Edgewood Park, Allegheny County, Pennsylvania.



RANGE.—Southwestern Pennsylvania and adjacent northern West Virginia southward to Pocahontas County, West Virginia, and Highland County, Virginia.

HABITAT.—Burrows (primary burrower).

*Cambarus (Jugicambarus) nodosus* Bouchard and Hobbs

FIGURE 76

*Cambarus (Jugicambarus) nodosus* Bouchard and Hobbs, 1976:8, fig. 3.

TYPES.—Holotype, allotype, and morphotype, USNM 146756, 146757, 146758 (male I, female, male II); paratypes, USNM, BMNH.

TYPE LOCALITY.—Small unnamed tributary of North Potato Creek (Hiwassee River system via Ocoee River) between 0.7 and 0.9 miles (1.1 and 1.4 km) west of Tennessee–North Carolina border on U.S. Highway 64, Polk County, Tennessee.

RANGE.—Headwater areas of the Hiwassee (Ocoee, Nottely, and Toccoa river basins), Savannah (Chattooga, Tugaloo, and Koewee river basins), and Chattahoochee river systems in Tennessee, North Carolina, South Carolina, and Georgia.

HABITAT.—Burrows and occasionally in streams.

*Cambarus (Jugicambarus) obeyensis* Hobbs and Shoup

FIGURE 67

*Cambarus obeyensis* Hobbs and Shoup, 1947:138, figs. 1–11.

*Cambarus (Jugicambarus) obeyensis*.—Hobbs, 1969b:107, figs. 9, 19h; 1974b:19, fig. 52.—Bouchard, 1973a:105.

*Cambarus (Veticambarus) obeyensis*.—Hobbs, 1970b:243.

TYPES.—Holotype, allotype, and “morphotype,” USNM 82260 (male I, female, male II); paratypes, MCZ, USNM, TU.

TYPE LOCALITY.—Big Hurricane Creek on Monterey-Clarkrange road, Putnam-Cumberland county line, Tennessee.

RANGE.—Headwaters of East Fork of Obey River in Cumberland, Fentress, Overton, and Putnam counties, Tennessee.

HABITAT.—Rocky streams.

*Cambarus (Jugicambarus) parvocolus* Hobbs and Shoup

FIGURE 70

*Cambarus parvocolus* Hobbs and Shoup, 1947:142, figs. 12–22.

*Cambarus (Jugicambarus) parvocolus*.—Hobbs, 1969b:107, figs. 9, 19i; 1974b:19, fig. 55; 1981:208, figs. 24g, 70e, 79, 82, 218.

TYPES.—Holotype, allotype, and “morphotype,” USNM 82259 (male I, female, male II); paratypes, USNM, MCZ, TU.

TYPE LOCALITY.—Tributary to Big Hurricane Creek, Fentress County (southwestern part), Tennessee.

RANGE.—Largely restricted to the Cumberland Plateau section of the Appalachian Plateau Province, ranging through the Cumberland River basin from Fentress, Overton, and Putnam counties, Tennessee, and Bell County, Kentucky, to headwaters of the Kentucky River in Letcher County, Ken-

tucky; and in the Tennessee Basin in Lee County, Virginia, southward along the plateau to the northwestern part of Dade County, Georgia.

HABITAT.—Rocky streams.

*Cambarus (Jugicambarus) setosus* Faxon

FIGURE 84

*Cambarus setosus* Faxon, 1889:237, pl. 1: figs. 1–3, 7, pl. 2: fig. 1.—Hobbs and Barr, 1960:26, figs. 38–47.—Pflieger, 1987a:24; 1987b:8.

*Cambarus ayersii* Steele, 1902:18, pl. 5: fig. A, pl. 6: fig. 14. [Types: USNM 62316 (male II). Type locality: Fisher's Cave (= Sequoia Cave in Galloway), near Springfield, Green County, Missouri (Sec. 9, T. 28N, R. 21W).]

*Cambarus (Bartoniuss) setosus*.—Ortmann, 1905c:120.

*Cambarus (Cambarus) setosus*.—Fowler, 1912:341 [by implication].

*Cambarus ayersi*.—Ortmann, 1918:838.

*Cambarus (Jugicambarus) setosus*.—Hobbs, 1969b:107, fig. 19j; 1974b:19, fig. 66.—Marquart, 1979:17.—Gardner, 1986:20.

TYPES.—Syntypes: MCZ 4200 (4 male II, 1 female), 4201 (3 male I, 1 male II, 4 female, 4 juv. male, 2 juv. female), 4202 (2 male II, 3 female, 3 juv. male, 4 juv. female); USNM 25828 (male II, female).

TYPE LOCALITY.—Wilson's Cave (= Whisner Cave), 2 miles (3.2 km) northwest of Sarcoxie, near Springfield, Jasper County, Missouri (Sec. 6, T. 27N, R. 29W).

RANGE.—Southwestern Missouri (Christian, Dade, Greene, Jasper, Lawrence, Newton, and Stone counties) and (?) north-eastern Oklahoma (Delaware and Mayes counties).

HABITAT.—Subterranean streams.

*Cambarus (Jugicambarus) tartarus* Hobbs and Cooper

FIGURE 86

*Cambarus (Jugicambarus) tartarus* Hobbs and Cooper, 1972:51, figs. 1–12.—Hobbs, 1974b:19, fig. 68.

*Cambarus tartarus*.—Looney, 1975:13, fig. 2.

TYPES.—Holotype, allotype, and morphotype, USNM 131951, 131411, 132754 (male I, female, male II).

TYPE LOCALITY.—Stansberry-January Cave System, 4 miles (6.4 km) north of Colcord, Delaware County, Oklahoma (Sec. 11, T. 21N, R. 22E).

RANGE.—Known only from the type locality.

HABITAT.—Subterranean stream.

*Cambarus (Jugicambarus) unestami* Hobbs and Hall

FIGURE 69

*Cambarus (Depressicambarus) unestami* Hobbs and Hall, 1969:287, figs. 13–24.—Hobbs, 1974b:19, fig. 54.—1981:210, figs. 24f, 70f, 81, 83, 219.

*Cambarus unestami*.—Bouchard, 1972b:92.—1976b:585.

*Cambarus (Jugicambarus) unestami*.—Bouchard, 1973a:105.

TYPES.—Holotype, allotype, and morphotype, USNM 129863, 129864, 129865 (male I, female, male II); paratypes, USNM.

TYPE LOCALITY.—Daniel Creek, 2.5 miles (4.0 km) west of

the Walker County line on State Route 143, Dade County, Georgia.

RANGE.—Tributaries of Chattanooga, Cole City, Lookout, and Long Island creeks (Tennessee River basin) in Walker and Dade counties, Georgia, and Jackson County, Alabama. This crayfish has also been collected from tributaries of the Little River (Chattooga-Coosa Basin) in the northwestern part of Chattooga County, Georgia. All localities are on Sand or Lookout mountains.

HABITAT.—Rocky streams.

*Cambarus (Jugicambarus) zophonastes* Hobbs and Bedinger

FIGURE 85

*Cambarus zophonastes* Hobbs and Bedinger, 1964:11, figs. 1, 2, 4-11.—K.L. Smith, 1984:1.

*Cambarus (Jugicambarus) zophonastes*.—Hobbs, 1969b:107, fig. 19k; 1974b:20, fig. 67.—Hobbs, Hobbs, and Daniel, 1977:88, fig. 43.

*Cambarus (Jugicambarus) zophonastes*.—Thorne, 1987:421 [erroneous spelling].

TYPES.—Holotype and allotype, USNM 108356, 108357 (male I, female); paratypes, USNM.

TYPE LOCALITY.—Hell Creek Cave, Stone County, Arkansas (NE 1/4, NE 1/4, Sec. 30, T. 15N, R. 10W).

RANGE.—Known only from the type locality.

HABITAT.—Subterranean stream.

Subgenus *Lacunicambarus* Hobbs

*Astacus*.—Rafinesque, 1817:42.

*Cambarus*.—Girard, 1852:88 [in part].

Subgenus *Bartoniuss* Ortmann, 1905c:97 [in part].

Subgenus *Cambarus*.—Fowler, 1912:341 [in part].

Subgenus *Lacunicambarus* Hobbs, 1969b:110. [Type species, by original designation, *Cambarus diogenes* Girard, 1852:88. Gender: masculine.]

*Cambarus (Lacunicambarus) acanthura* Hobbs

FIGURE 87

*Cambarus (Lacunicambarus) acanthura* Hobbs, 1981:215, figs. 25g, 84a, 85-87, 220.

*Cambarus acanthura*.—Bouchard, 1982:90.

TYPES.—Holotype, allotype, and morphotype, USNM 129758, 146601, 146602 (male I, female, male II); paratypes, BMNH, USNM.

TYPE LOCALITY.—Field on west side of Holly Creek (farm of Homer Robinson) about one mile northeast of Chatsworth, Murray County, Georgia.

RANGE.—Tennessee Basin in Alabama, southwestern Tennessee, and northwestern Georgia; Coosa Basin from its headwaters in Georgia to Chilton County, Alabama, and in headwaters of the Black Warrior River in Blount and Tuscaloosa counties, Alabama; Chattahoochee Basin from Walton and De Kalb counties, Georgia, to Russell County,

Alabama; and in the upper Ocmulgee Basin in Georgia.

HABITAT.—Burrows and streams.

*Cambarus (Lacunicambarus) diogenes* Girard

FIGURE 88

*Astacus fossor* Rafinesque, 1817:42. [Name suppressed by International Commission, Opinion 522. (See Henning, 1958.)].

*Cambarus diogenes* Girard, 1852:88.—Huner, 1977:11.—Page, 1985b:434, figs. 167-170.—Pflieger, 1987a:23; 1987b:7.

*Cambarus nebrascensis* Girard, 1852:91. [Location of types (if extant) unknown. Type locality: Fort Pierre, Nebraska (now in Stanley County, South Dakota).]

*Cambarus Nebrascensis*.—Hagen, 1870:8.

*Cambarus Diogenes*.—Hagen, 1870:6.

*Cambarus fossor*.—Hagen, 1870:8.

*Cambarus obesus* Hagen, 1870:81, pl. 1: figs. 39-42, pl. 3: fig. 163, pl. 9 [Syntypes: MCZ 195 (2 male I, 1 female), 165 (female), 3361 (male I), 229 (male I), 3363 (male); MHNP (2 dry); St. Petersburg Mus. (= ZIAS), (female) not extant. Type locality: Lawn Ridge, Illinois.]

*Cambarus Diogenes*.—Abbott, 1873:83 [erroneous spelling].

*Cambarus Diogenes Diogenes*.—Faxon, 1884:144 [by implication].

*Cambarus diogenes diogenes*.—Hay, 1899b:959 [by implication].—Marlow, 1960:229.

*S[ambarus] diogenes*.—Steele, 1902:11 [erroneous spelling].

*Cambarus (Bartoniuss) diogenes*.—Ortmann, 1905c:120; 1906b:402, pl. A: fig. 3, pl. 39: fig. 11, pl. 40: figs. 6, 7.

*Bartoniuss diogenes*.—Williamson, 1907:749 [*Bartoniuss* intended as a subgeneric name].

*Cambarus (Cambarus) diogenes*.—Fowler, 1912:341.

*Cambarus (Lacunicambarus) diogenes diogenes*.—Hobbs, 1969b:110, figs. 2c, 11, 13i, 14i, 20a; 1974b:20, fig. 69.

*Cambarus (Lacunicambarus) diogenes diogenes*.—Bouchard, 1972b:103 [erroneous spelling].

*Cambarus (Lacunicambarus) diogenes Diogenes*.—Hobbs III, Thorp, and Anderson, 1976:5 [lapsus calami].

*Cambarus Diogenes diogenes*.—Phillips, 1981:17 [lapsus calami].

*Cambarus (Depressicambarus) diogenes*.—Hobbs, 1986:16 [lapsus calami].

TYPES.—Not known to be extant except for a questionable paratype (female), ANSP.

TYPE LOCALITY.—Vicinity of Washington, D.C.

RANGE.—Very widespread east of the Rockies and south of the Great Lakes, except peninsular Florida and the Alleghenies; not reported northeast of New Jersey in the East and east of western Pennsylvania in the Mississippi drainage system.

HABITAT.—Burrows (primary burrower); often found in ponds or streams in the spring season.

REMARKS.—This is a species complex and needs considerable attention.

*Cambarus (Lacunicambarus) ludovicianus* Faxon, new status

FIGURE 89

*Cambarus Diogenes* var. *Ludoviciana* Faxon, 1884:144.

*Cambarus diogenes ludovicianus*.—Hay, 1899b:959.—Marlow, 1960:229.

*Cambarus diogenes ludoviciana*.—Steele, 1902:21.

*Cambarus diogenes ludoviciana*.—Penn, 1941:8.

*Cambarus ludovicianus*.—Roberts, 1944:363.



*Cambarus (Lacunicambarus) diogenes ludovicianus*.—Hobbs, 1969b:110, fig. 20b; 1974b:20, fig. 70.

*Cambarus l. ludovicianus*.—Hart and Hart, 1974:107 [lapsus calami].

TYPES.—Syntypes, USNM 5504 (male I, male II, 4 female), USNM 5625 (male II, female), MCZ 3617 (male I).

TYPE LOCALITY.—New Orleans, Orleans Parish, Louisiana.

RANGE.—Lower Mississippi drainage in Arkansas, Tennessee, Louisiana, Mississippi, and in eastern Texas (probably more extensive).

HABITAT.—Burrows (primary burrower).

REMARKS.—With a range that overlaps that of *C. (L.) diogenes*, recognition of it as a subspecies of that crayfish is rejected, and specific rank is accorded it herein.

### *Cambarus (Lacunicambarus) miltus* Fitzpatrick

FIGURE 90

*Cambarus (Lacunicambarus) miltus* Fitzpatrick, 1978a:749, figs. 1–13.

*Cambarus miltus*.—Bouchard, 1982:90.

TYPES.—Holotype, allotype, and morphotype, USNM 148556, 148557, 148558 (male I, male II, female); paratypes, USNM.

TYPE LOCALITY.—“In burrows along d’Olive Creek under old highway 98 bridge, 0.1 mi (161 m) S of the junction of U.S. highways 90, 98, and I-10 at Spanish Fort, Baldwin County, Alabama” (Fitzpatrick, 1978a:752).

RANGE.—Known only from the type locality.

HABITAT.—Burrows (primary burrower).

### Subgenus *Puncticambarus* Hobbs

*Cambarus*.—Girard, 1852:90 [in part].

Subgenus *Bartoni* Ortmann, 1905c:97 [in part].

Subgenus *Cambarus* Fowler, 1912:341 [in part].

Subgenus *Puncticambarus* Hobbs, 1969b:101. [Type species, by original designation, *Cambarus extraneus* Hagen, 1870:73. Gender: masculine.]

### *Cambarus (Puncticambarus) acuminatus* Faxon

FIGURE 99

*Cambarus acuminatus* Faxon, 1884:113; 1885a:67, pl. 3: fig. 5, pl. 8: figs. 6a, 6a'.—Hobbs and Walton, 1966:136.

*Cambarus (Bartoni) acuminatus*.—Ortmann, 1905c:120.

*Cambarus (Cambarus) acuminatus*.—Fowler, 1912:341 [by implication].

*Cambarus bartonii acuminatus*.—Faxon, 1914:424.

*Cambarus montanus acuminatus*.—Ortmann, 1931:106.

*Cambarus bartoni acuminatus*.—Ortmann, 1931:108.

*Cambarus (Cambarus) montanus acuminatus*.—Ortmann, 1931:108.

*Cambarus (Puncticambarus) acuminatus*.—Hobbs, 1969b:101, figs. 7, 14a, 17i; 1974b:20, fig. 74.

*P[rocambarus] acuminatus*.—Hart and Hart, 1974:28 [lapsus calami].

TYPES.—Syntypes, MCZ 3624 (female). “Cotypes” formerly said to have been at Butler University (Faxon, 1914:424) are no longer there.

TYPE LOCALITY.—Saluda River, at Farr’s Mills, west of Greenville, Greenville County, South Carolina.

RANGE.—Patapsco Basin in Maryland southward to the Saluda drainage system in South Carolina.

HABITAT.—Streams.

REMARKS.—This highly variable species is also in need of attention. Even in the Santee Cooper Basin (of which the Saluda River is a tributary), South Carolina, more than one rather distinct “variant” is recognizable.

### *Cambarus (Puncticambarus) buntingi* Bouchard

FIGURE 98

*Cambarus (Puncticambarus) sp. D*.—Hobbs, 1969b:102, fig. 7.

*Cambarus (Puncticambarus) ms. sp.*—Bouchard, 1972b:103.

*Cambarus (Puncticambarus) buntingi* Bouchard, 1973b:407, fig. 1.

*Cambarus buntingi*.—Bouchard, 1976b:585.

TYPES.—Holotype, allotype, morphotype, USNM 133057, 133058, 133059 (male I, female, male II); paratypes, UTM, USNM.

TYPE LOCALITY.—“Elk Creek, a tributary of Clear Fork Creek (Cumberland River system) at Co. Rd. 2345, approximately 1 mile [1.6 km] S of Newcomb, Campbell Co., Tennessee” (Bouchard, 1973b:410).

RANGE.—Cumberland and Tennessee drainage systems in Anderson, Campbell, Claiborne, and Scott counties, Tennessee and in Bell County, Kentucky.

HABITAT.—Small to large streams.

### *Cambarus (Puncticambarus) chaugaensis* Prins and Hobbs

FIGURE 101

*Cambarus (Puncticambarus) sp. E*.—Hobbs, 1969b:102, 134, 135.

*Cambarus (Puncticambarus) chaugaensis* Prins and Hobbs, 1972:413, fig. 1.—Hobbs, 1974b:21, fig. 75; 1981:245, figs. 21h, 87, 89c, 94, 222.

TYPES.—Holotype, allotype, and morphotype, USNM 131926, 131927, 131928 (male I, female, male II); paratypes, USNM, BMNH.

TYPE LOCALITY.—Chauga River at Cassidy Bridge (off County Road 290), Oconee County, South Carolina.

RANGE.—Tributaries of the Savannah River in Oconee County, South Carolina, and Rabun County, Georgia.

HABITAT.—Streams.

### *Cambarus (Puncticambarus) coosae* Hobbs

FIGURE 91

*Cambarus (Cambarus) extraneus*.—Ortmann, 1931:99 [in part].

*Cambarus (Puncticambarus) species B*.—Hobbs, 1969b:102, fig. 7.

*Cambarus sp. nov. A*.—Anonymous, 1969:C-23; 1970:162.

*Cambarus species A*.—Hobbs and Hall, 1974:204.

*Cambarus (Puncticambarus) sp.*—Hart and Hart, 1974:58.

*Cambarus nov. sp. A*.—Wharton, 1978:220.

*Cambarus (Puncticambarus) coosae* Hobbs, 1981:230, figs. 21c, 89a, 90, 91, 223.

*Cambarus (Hiaticambarus) coosae*.—Hobbs and Peters, 1982:312 [lapsus calami].

TYPES.—Holotype, allotype, and morphotype, USNM 145603, 145604, 145605 (male I, female, male II); paratypes, USNM.

TYPE LOCALITY.—Spring Creek, 8 miles (12.8 km) east-southeast of Rome, Floyd County, Georgia, on U.S. Highway 411.

RANGE.—The Coosa River basin from Polk and Bradley counties, Tennessee, Murray, Pickens, and Paulding counties, Georgia, to Bibb, Calhoun, Cherokee, Chilton, Clay, Coosa, Shelby, and Talladega counties, Alabama.

HABITAT.—Streams.

*Cambarus (Puncticambarus) cumberlandensis* Hobbs and Bouchard

FIGURE 95

*Cambarus (Puncticambarus) species A.*—Hobbs, 1969b:102, fig. 7.

*Cambarus (Puncticambarus) sp.*—Bouchard, 1972b:91.

*Cambarus (Puncticambarus) sp. nov.*—Bouchard, 1973b:411.

*Cambarus (Puncticambarus) cumberlandensis* Hobbs and Bouchard, 1973:41, figs. 1, 2.

*Cambarus cumberlandensis.*—Hobbs and Bouchard, 1973:41.

TYPES.—Holotype, allotype, and morphotype, USNM 132989, 132990, 132991 (male I, female, male II); paratypes, USNM.

TYPE LOCALITY.—Poplar Cove Creek (a tributary to the East Fork of the Obey River), 5.8 miles (9.3 km) west of Jamestown, Fentress County, Tennessee, off State Route 52, just east of Helena.

RANGE.—Cumberland River system from Jellico Creek (Scott County, Tennessee) downstream to and including Roaring River in Jackson County, Tennessee; and Green River system in Adair and Metcalf counties, Kentucky. Introduced into Caney Fork River system in DeKalb County, Tennessee.

HABITAT.—Streams.

*Cambarus (Puncticambarus) extraneus* Hagen

FIGURE 92

*Cambarus extraneus* Hagen, 1870:73, pl. 1: figs. 88, 89, pl. 3: fig. 156.

*Cambarus extraneus.*—Adams, 1901:849 [erroneous spelling].

*Cambarus extraneus.*—Steele, 1902:7 [erroneous spelling].

*Cambarus (Bartonius) extraneus.*—Ortmann, 1905c:120.

*Cambarus (Cambarus) extraneus.*—Fowler, 1912:341 [by implication].

*Cambarus extraneus.*—Unestam, 1969:203 [erroneous spelling].

*Cambarus (Puncticambarus) extraneus.*—Hobbs, 1969b:101, figs. 1b, 7, 13b, 14b, 17m; 1974b:21, fig. 7f; 1981:247, figs. 21f, 89g, 93, 95, 224.

TYPES.—Syntypes, MCZ 175 (3 male II, 1 female), USNM 4957 (female). Hagen (1870:74) indicated that among the 6 specimens available there were "Male Form I, and II. Fem." The first form male is no longer among the types and was missing from them when I examined the series in the early 1940s.

TYPE LOCALITY.—"Tennessee River, (near the borders of?) Georgia" (Hagen, 1870:74). The emendation offered by

Ortmann (1931:97) must be rejected because *Cambarus (P.) extraneus* does not occur in the Coosa (Etowah) Basin. Ortmann confused *C. (P.) coosae* with Hagen's species.

RANGE.—Known only from the South Chickamauga Creek basin (Tennessee River drainage) in Catoosa, Walker, and Whitfield counties, Georgia, and in the same basin in Hamilton County, Tennessee (Bouchard, 1972b:58).

HABITAT.—Streams.

*Cambarus (Puncticambarus) georgiae* Hobbs

FIGURE 93

*Cambarus (Puncticambarus) sp.*—Anonymous, 1973b:2.

*Cambarus (Puncticambarus) georgiae* Hobbs, 1981:251, figs. 21g, 87, 89d, 96, 225.

TYPES.—Holotype, allotype, and morphotype, USNM 118944, 144954, 144955 (male I, female, male II); paratypes, USNM.

TYPE LOCALITY.—Little Tennessee River at U.S. Highway 441, south of Dillard, Rabun County, Georgia.

RANGE.—Known only from the Little Tennessee River in Rabun County, Georgia, and Macon County, North Carolina.

HABITAT.—Streams.

*Cambarus (Puncticambarus) hiwasseeensis* Hobbs

FIGURE 102

*Cambarus (Puncticambarus) species C.*—Hobbs, 1969b:102, 135, fig. 7.

*Cambarus hiwasseeensis* Anonymous, 1973a:66 [nomen nudum].

*Cambarus (Puncticambarus) sp.*—Bouchard and Hobbs, 1976:13 [in part].

*Cambarus (Puncticambarus) species D.*—Hobbs and Peters, 1977:6.

*Cambarus hiwasseeensis* Wharton, 1978:220 [nomen nudum].

*Cambarus (Puncticambarus) hiwasseeensis* Hobbs, 1981:256, figs. 21e, 89f, 97, 98, 226, frontispiece.

*Cambarus Hiwasseeensis.*—Harney, 1983:B4 [erroneous spelling].

TYPES.—Holotype, allotype, and morphotype, USNM 129366, 129365, 129364 (male I, female, male II); paratypes, BMNH, USNM.

TYPE LOCALITY.—Tributary to Peachtree Creek, 0.8 mile (1.3 km) north of Peachtree School on U.S. Alternate Highway 64, Cherokee County, North Carolina.

RANGE.—The upper Hiwassee River basin in Georgia and North Carolina.

HABITAT.—Streams.

*Cambarus (Puncticambarus) nerterius* Hobbs

FIGURE 97

*Cambarus nerterius* Hobbs, 1964:189, figs. 1–10.

*Cambarus (Puncticambarus) nerterius.*—Hobbs, 1969b:101, figs. 7, 17n; 1974b:21, fig. 73.—Hobbs, Hobbs, and Daniel, 1977:91, fig. 44.

TYPES.—Holotype, allotype, and morphotype, USNM 111295, 111296, 111297 (male I, female, male II); paratypes, USNM.

TYPE LOCALITY.—Matt's Black Cave, 2 miles (3.2 km) south of Renick, Greenbrier County, West Virginia.

RANGE.—Greenbrier River drainage system in Greenbrier and Pocahontas counties, West Virginia.

HABITAT.—Subterranean waters.

*Cambarus (Puncticambarus) parrishi* Hobbs

FIGURE 96

*Cambarus (Puncticambarus)* sp.—Bouchard and Hobbs, 1976:13 [in part].  
*Cambarus (Puncticambarus) parrishi* Hobbs, 1981:263, figs. 21d, 89e, 98, 99, 227.

TYPES.—Holotype, allotype, and morphotype, USNM 144957, 144958, 144959 (male I, female, male II); paratypes, USNM.

TYPE LOCALITY.—Hiwassee River, 2 miles (3.2 km) north of the junction of Georgia routes 17 and 66 on Route 17, approximately 7 miles (11.2 km) southeast of Hiawassee, Towns County, Georgia.

RANGE.—Headwaters of the Hiwassee River in Towns County, Georgia, and Clay County, North Carolina.

HABITAT.—Streams.

*Cambarus (Puncticambarus) reburrus* Prins

FIGURE 103

*Cambarus reburrus* Prins, 1968:458, figs. 1–11.  
*Cambarus (Puncticambarus) reburrus*.—Prins and Hobbs, 1972:412.—Hobbs 1974b:21, fig. 76.

TYPES.—Holotype, allotype, and morphotype, USNM 129501, 129502, 129503 (male I, female, male II); paratypes, USNM, MCZ, Rudolph Prins.

TYPE LOCALITY.—Small tributary to Horsepasture River from Sapphire Lake off U.S. Highway 64, 5.5 miles (8.8 km) east of Cashiers, Jackson County, North Carolina.

RANGE.—Type locality and tributaries of the French Broad River in Buncombe, Henderson, Jackson, Madison, and Transylvania counties, North Carolina.

HABITAT.—Streams.

*Cambarus (Puncticambarus) robustus* Girard

FIGURE 104

*Cambarus robustus* Girard, 1852:90.—Hagen, 1870:80, pl. 3: fig. 167.—Crocker and Barr, 1968:118, figs. 30, 39, 48, 55, 65, 67, 81.—Page, 1985b:439–440, figs. 171–173.

*Cambarus Bartonii robustus*.—Faxon, 1885a:9.

*Cambarus Bartonii* var. *robusta*.—Faxon, 1885a:61.

*Cambarus bartonii robustus*.—Faxon 1890:622.

*Cambarus bartonii robusta*.—Shufeldt, 1897:55.

*Cambarus (Bartoni) bartoni* var. *robustus*.—Ortmann, 1905c:122 [by implication].

*Cambarus bartoni robustus*.—Ortmann, 1905c:135.

*Cambarus (Cambarus) bartonii robustus*.—Fowler, 1912:341 [by implication].

*Cambarus (Cambarus) bartoni robustus*.—Ortmann, 1931:126.

*Cambarus (Bartoni) robustus*.—Creaser, 1931b:260.

*Cambarus (Puncticambarus) robustus*.—Hobbs, 1969b:101, figs. 1c, 13a, 17o; 1974b:21, fig. 77.

*Cambarus robustis*.—Espinete and Golding, 1976:B18 [erroneous spelling].

TYPES.—Syntype, ANSP 328 (male II); others probably destroyed in the Chicago fire, 1871 (Faxon, 1914:423).

TYPE LOCALITY.—Humber River, near Toronto, Canada.

RANGE.—Ontario and New York, to Illinois, and southward to Tennessee, North Carolina, and Virginia. Its presence in New England east of the Hudson River basin is believed to have resulted from introductions (Douglas G. Smith, in litt.).

HABITAT.—Streams.

*Cambarus (Puncticambarus) scotti* Hobbs

FIGURE 100

*Cambarus aspinosus*.—Anonymous, 1970:211 [nomen nudum].

*Cambarus (Puncticambarus)* sp.—Hart and Hart, 1974:58.

*Cambarus (Puncticambarus) scotti* Hobbs, 1981:238, figs. 21b, 89b, 92, 93, 228.

TYPES.—Holotype, allotype, and morphotype, USNM 146479, 146480, 146481 (male I, female, male II); paratypes, USNM.

TYPE LOCALITY.—Clarks Creek, 1 mile (1.6 km) north of Holland, Chattooga County, Georgia, on State Route 100.

RANGE.—Chattooga River basin in Chattooga and Walker counties, Georgia, and Calhoun, Cherokee, and St. Clair counties, Alabama.

*Cambarus (Puncticambarus) spicatus* Hobbs

FIGURE 94

*Cambarus spicatus* Hobbs, 1956c:116, figs. 1–11.

*Cambarus (Puncticambarus) spicatus*.—Hobbs, 1969b:102, figs. 7, 18a; 1974b:22, fig. 72.

TYPES.—Holotype, allotype, and morphotype, USNM 99323, 99324, 99325 (male I, female, male II); paratypes, TU, USNM.

TYPE LOCALITY.—Little River, 10.3 miles (16.5 km) west of Winnsboro, Fairfield County, South Carolina.

RANGE.—Little River in Fairfield and Richland counties, South Carolina.

HABITAT.—Streams.

*Cambarus (Puncticambarus) veteranus* Faxon

FIGURE 105

*Cambarus bartonii veteranus* Faxon 1914:389, pl. 13: fig. 2.

*Cambarus bartoni veteranus*.—Ortmann, 1931:112.

*Cambarus (Cambarus) montanus veteranus*.—Ortmann, 1931:112 [in part].

*Cambarus veteranus*.—Hobbs, 1955b:330.

*Cambarus (Puncticambarus) veteranus*.—Hobbs, 1969b:102, figs. 7, 18b; 1974b:22, fig. 78.

TYPES.—Holotype, USNM 44712 (male I); paratypes,



USNM, MCZ.

TYPE LOCALITY.—Indian Creek, Baileysville, Wyoming County, West Virginia.

RANGE.—Guyandot and Big Sandy rivers drainage in Virginia, West Virginia, and Kentucky. Limits of range very indefinite and poorly known.

HABITAT.—Streams.

### Subgenus *Veticambarus* Hobbs

Subgenus *Veticambarus* Hobbs, 1969b:96. [Type species, by original designation, *Cambarus pristinus* Hobbs, 1965:268. Gender: masculine.]

#### *Cambarus (Veticambarus) pristinus* Hobbs

FIGURE 106

*Cambarus pristinus* Hobbs, 1965:268, figs. 1–12.

*Cambarus (Veticambarus) pristinus*.—Hobbs, 1969b:98, figs. 1e, 5, 13l, 14k, 17a; 1974b:22, fig. 79.

TYPES.—Holotype, allotype, and morphotype, USNM 115528, 115529, 115530 (male I, female, male II); paratypes, MCZ, USNM.

TYPE LOCALITY.—White Oak Creek, a tributary to the Caney Fork of the Cumberland River, 3.9 miles (6.2 km) east of the White-Cumberland county line and 0.1 mile (160 m) south of U.S. Highway 70S, Cumberland County, Tennessee.

RANGE.—Upper Caney Fork drainage in Cumberland and Bledsoe counties, Tennessee.

HABITAT.—Streams, under rocks.

### Genus *Distocambarus* Hobbs

*Procambarus*.—Hobbs, 1981:12, 301 [in part].

Subgenus *Distocambarus* Hobbs, 1981:301. [Type species, by original designation, *Procambarus (Distocambarus) devevus* Hobbs, 1981:302. Gender: masculine.]

*Distocambarus*.—Hobbs and Carlson, 1983:420.—Hobbs, 1984:18, fig. 7.

Subgenus *Fitzcambarus* Hobbs, 1983:430. [Type species, by original designation, *Distocambarus (Fitzcambarus) carlsoni* Hobbs, 1983:430. Gender: masculine.]

### Subgenus *Distocambarus* Hobbs

*Procambarus*.—Hobbs, 1981:301.

Subgenus *Distocambarus* Hobbs, 1981:301; 1983:429. [Type species, by original designation, *Procambarus (Distocambarus) devevus* Hobbs, 1981:302. Gender: masculine.]

*Distocambarus*.—Hobbs and Carlson, 1983:420.

#### *Distocambarus (Distocambarus) crockeri* Hobbs and Carlson

FIGURE 107

*Distocambarus crockeri* Hobbs and Carlson, 1983:421, fig. 1.

*Distocambarus (Distocambarus) crockeri*.—Hobbs, 1983:430.

TYPES.—Holotype, allotype, and morphotype, USNM 178582, 178583, 178584 (male I, female, male II); paratypes,

USNM.

TYPE LOCALITY.—Roadside ditch 0.7 mile (1.1 km) south of Parksville, McCormick County, South Carolina, on U.S. Highway 221.

RANGE.—Savannah and Saluda river basins in Abbeville, Edgefield, Greenwood, McCormick, and Saluda counties, South Carolina.

HABITAT.—Burrows and occasionally flooded roadside ditches and pools (primary burrower).

#### *Distocambarus (Distocambarus) devevus* (Hobbs)

FIGURE 108

*Procambarus (Distocambarus) devevus* Hobbs, 1981:302, figs. 11j, 105, 115–117, 234.

*Distocambarus devevus*.—Hobbs and Carlson, 1983:420.

*Distocambarus (Distocambarus) devevus*.—Hobbs, 1983:430.

TYPES.—Holotype, allotype, and morphotype, USNM 148569, 148570, 148571 (male I, female, male II); paratypes, USNM.

TYPE LOCALITY.—Marshy area under bridge within 200 m south of and in the flood plain of the Broad River on State Route 17, Wilkes County, Georgia.

RANGE.—Savannah River Basin in Elbert, Oglethorpe, and Wilkes counties, Georgia.

HABITAT.—Burrows, juveniles occasionally in flooded roadside ditches (primary burrower).

### Subgenus *Fitzcambarus* Hobbs

*Procambarus*.—Hobbs, 1983:430.

Subgenus *Fitzcambarus* Hobbs, 1983:430. [Type species, by original designation, *Distocambarus (Fitzcambarus) carlsoni* Hobbs, 1983:430. Gender: masculine.]

#### *Distocambarus (Fitzcambarus) carlsoni* Hobbs

FIGURE 109

*Distocambarus (Fitzcambarus) carlsoni* Hobbs, 1983:430, fig. 1.

TYPES.—Holotype, allotype, and morphotype, USNM 178599, 178600, 178601 (male I, female, male II); paratypes, USNM.

TYPE LOCALITY.—Swampy area bordering unnamed tributary of Saluda River about 1 mile (1.6 km) north of State Route 81 on Route 106, Anderson County, South Carolina, about 4.5 airmiles (7.2 km) east-northeast of Belton.

RANGE.—Saluda and Savannah river basins from Greenville to Abbeville and Saluda counties, South Carolina.

HABITAT.—Burrows (primary burrower).

#### *Distocambarus (Fitzcambarus) youngineri* Hobbs and Carlson

FIGURE 110

*Distocambarus (Fitzcambarus) youngineri* Hobbs and Carlson, 1985:82, fig. 1.

TYPES.—Holotype, allotype, and morphotype, USNM 208413, 208414, 208415 (male I, female, male II); paratypes, USNM.

TYPE LOCALITY.—About 50 m southwest of State Route 58 on Route 22 (11 airmiles, 17.6 km) west of Newberry, Newberry County, South Carolina (34°18'N, 81°48'W).

RANGE.—Known from the type locality and another nine airmiles (14.4 km) away on State Route 121, 0.15 mile (0.24 km) northeast of Route 34.

HABITAT.—Burrows (primary burrower).

### Genus *Fallicambarus* Hobbs

*Astacus*.—Cottle, 1863:217.

*Cambarus*.—Faxon, 1884:115 [in part].

Subgenus *Bartoni* Ortmann, 1905c:120 [in part].

*Bartoni*.—Williamson, 1907:749 [intended as subgeneric name].

Subgenus *Cambarus*.—Fowler, 1912:341 [in part].

*Fallicambarus* Hobbs, 1969b:111. [Type species, by original designation, *Cambarus strawni* Reimer, 1966:11. Gender: masculine.]

Subgenus *Creaserinus* Hobbs, 1973a:463. [Type species, by original designation, *Astacus fodiens* Cottle, 1863:217. Gender: masculine.]

### Subgenus *Creaserinus* Hobbs

*Astacus*.—Cottle, 1863:217.

*Cambarus*.—Faxon, 1884:115.

Subgenus *Bartoni* Ortmann, 1905c:120 [in part].

*Bartoni*.—Williamson, 1907:749 [intended as subgeneric name].

Subgenus *Cambarus*.—Fowler, 1912:341 [in part].

*Fallicambarus*.—Hobbs, 1969b:111 [in part].

Subgenus *Creaserinus* Hobbs, 1973a:463. [Type species, by original designation, *Astacus fodiens* Cottle, 1863:217. Gender: masculine.]

*P[rocambarus]*.—Hart and Hart, 1974:88 [lapsus; in part].

Subgenus *Creaserineus*.—Jezerinac, 1983:5 [erroneous spelling].

### *Fallicambarus (Creaserinus) byersi* (Hobbs)

FIGURE 123

*Cambarus byersi* Hobbs, 1941b:118, figs. 6, 10, 14, 17, 20, 23, 26, 27, 30; 1942b:167, pl. 12: figs. 206–210.

*Procambarus byersi*.—Hobbs, 1942b:14 [lapsus calami].

*Fallicambarus byersi*.—Hobbs, 1969b:111, fig. 20c; 1972b:101, figs. 81e, 83e; 1974b:22, fig. 87.

*Fallicambarus (Creaserinus) byersi*.—Hobbs, 1973a:463.

TYPES.—Holotype, allotype, USNM 79342 (male I, female), and "morphotype," USNM 87969 (male II); paratypes, USNM, MCZ, FSBC.

TYPE LOCALITY.—Burrows along Phifer Creek, 5.5 miles (8.8 km) northwest of Pensacola, near U.S. Highway 90, Escambia County, Florida.

RANGE.—Okaloosa County, Florida, west to Bay St. Louis, Hancock County, Mississippi.

HABITAT.—Burrows (primary burrower).

### *Fallicambarus (Creaserinus) caesius* Hobbs

FIGURE 118

*Fallicambarus (Creaserinus) caesius* Hobbs, 1975:24, fig. 7.

*Fallicambarus caesius*.—Hobbs, 1975:28.

TYPES.—Holotype, allotype, and morphotype, USNM 144921, 144922, 144923 (male I, female, male II); paratypes, USNM.

TYPE LOCALITY.—Roadside ditch at Hot Spring-Saline county line, Arkansas, on State Route 67.

RANGE.—Basins of Ouachita River and Dorcheat Bayou in southern Arkansas.

HABITAT.—Burrows.

### *Fallicambarus (Creaserinus) danielae* Hobbs

FIGURE 121

*Cambarus lobdelli* Lyle, 1938:76 [nomen nudum].

*Fallicambarus (Creaserinus) danielae* Hobbs, 1975:28, fig. 8.

TYPES.—Holotype, allotype, USNM 145997, 145998 (male I, female); paratypes, USNM.

TYPE LOCALITY.—Burrows in a roadside ditch 9.0 miles (14.4 km) east of Ocean Springs, Jackson County, Mississippi, on U.S. Highway 90.

RANGE.—Known only from Jackson County, Mississippi, and Mobile County, Alabama.

HABITAT.—Burrows.

### *Fallicambarus (Creaserinus) fodiens* (Cottle)

FIGURE 116

*Astacus fodiens* Cottle, 1863:217.

*Cambarus argillicola* Faxon, 1884:115. [Types: MCZ 3459 (male I, 4 female, 3 juvenile). Type locality: Detroit, Michigan.]

*Cambarus (Bartoni) argillicola*.—Ortmann, 1905c:120.

*Bartoni argillicola*.—Williamson, 1907:749 [*Bartoni* intended as subgeneric name].

*Cambarus (Cambarus) fodiens*.—Fowler, 1912:341 [by implication].

*Cambarus fodiens*.—Huntsman, 1915:158, figs. 8f, 9d, 10e, 11a, 12e.—Crocker and Barr, 1968:129–135, figs. 28, 37, 46, 57, 62, 85.

*Cambarus (Bartoni) fodiens*.—Creaser, 1931b:260, fig. 37.

*Fallicambarus fodiens*.—Hobbs, 1969b:111, fig. 20e; 1972b:102, figs. 83c, 84b, 85b; 1974b:23, fig. 82.—Page, 1985b:422, figs. 155–158.

*Fallicambarus (Creaserinus) fodiens*.—Hobbs, 1973a:463.

*P[rocambarus] Fallicambarus fodiens*.—Hart and Hart, 1974:88 [lapsus calami].

*Fallicambarus (Creaserineus) fodiens*.—Jezerinac, 1983:5 [erroneous spelling].

TYPES.—If extant, location unknown.

TYPE LOCALITY.—"Upper Canada," probably Ontario.

RANGE.—Southern Ontario, Michigan, Ohio, Indiana, and Illinois southward to Arkansas, Mississippi, and Alabama.

HABITAT.—Lentic and lotic habitats and burrows.

REMARKS.—The range of this crayfish and that of the closely allied, if not conspecific, *F. (C.) hedgpethi* abut or overlap in Arkansas, Mississippi, and Tennessee.

### *Fallicambarus (Creaserinus) hedgpethi* (Hobbs)

FIGURE 117

*Cambarus hedgpethi* Hobbs, 1948d:224, fig. 17a-f, h-j, l.—Penn, 1959:14,

figs. 9, 27, 46, 64, 86.—Reimer, 1969:53, figs. 2, 39.  
*Cambarus hedgепethi*.—Walls and Black, 1967:60 [erroneous spelling].  
*Fallicambarus hedgепethi*.—Hobbs, 1969b:111, fig. 20f; 1972b:102, figs. 82c, 83d; 1974b:23, fig. 83.  
*Fallicambarus (Creaserinus) hedgепethi*.—Hobbs, 1973a:463.  
*Fallicambarus hedgепethi*.—Huner, 1977:11 [erroneous spelling].

TYPES.—Holotype, morphotype, USNM 85146 (male I, male II), and allotype, USNM 85147 (female); paratypes, USNM.

TYPE LOCALITY.—Lower middle part of the Aransas National Wildlife Refuge, Aransas County, Texas.

RANGE.—Texas and Oklahoma eastward to western Tennessee, (?)panhandle of Florida, and (?)southwestern Georgia.

HABITAT.—Temporary bodies of water and burrows.

REMARKS.—See "Remarks" under *F. (C.) fodiens*.

### *Fallicambarus (Creaserinus) hortoni* Hobbs and Fitzpatrick

FIGURE 120

*Fallicambarus hortoni* Hobbs and Fitzpatrick, 1970:829, figs. 1-12.—Hobbs, 1972b:100, fig. 81d; 1974b:23, fig. 85.  
*Fallicambarus (Creaserinus) hortoni*.—Hobbs, 1973a:463.

TYPES.—Holotype, allotype, and morphotype, USNM 129895, 129897, 129896 (male I, female, male II); paratypes, USNM.

TYPE LOCALITY.—Low area along roadside ditch leading to tributary of Cypress Creek, 7.5 miles (12 km) east of the Hardeman County line on State Route 57 (Hatchie River drainage), McNairy County, Tennessee.

RANGE.—Known from only two localities in McNairy County, Tennessee.

HABITAT.—Burrows (primary burrower).

### *Fallicambarus (Creaserinus) oryktes* (Penn and Marlow)

FIGURE 122

*Cambarus oryktes* Penn and Marlow, 1959:197, figs. 1-14.  
*Fallicambarus oryktes*.—Hobbs, 1969b:111, fig. 20h; 1972b:101, figs. 81f, 83a; 1974b:24, fig. 86.  
*Fallicambarus (Creaserinus) oryktes*.—Hobbs, 1973a:463.

TYPES.—Holotype, allotype, and morphotype, USNM 101735, 101736, 101737 (male I, female, male II); paratypes, TU, USNM.

TYPE LOCALITY.—Roadside ditch at Alton, St. Tammany Parish, Louisiana.

RANGE.—St. Tammany Parish, Louisiana, and Forest, Hancock, Harrison, Jackson, and Pearl River counties in southern Mississippi eastward to Baldwin County, Alabama.

HABITAT.—Burrows (primary burrower).

### *Fallicambarus (Creaserinus) uhleri* (Faxon)

FIGURE 119

*Cambarus Uhleri* Faxon, 1884:116; 1885a:77, pl. 8, figs. 8, 8', 8a, 8a'.  
*Cambarus uhleri*.—Hay, 1899b:959.—Meredith and Schwartz, 1960:28, figs. 11, 16.  
*Cambarus (Bartoniuss) uhleri*.—Ortmann, 1905c:120.  
*Cambarus (Cambarus) uhleri*.—Fowler, 1912:341 [by implication].  
*Fallicambarus uhleri*.—Hobbs, 1969b:111, fig. 20j; 1972b:102, figs. 82a, 83b, 84a, 85a; 1974b:24, fig. 84.  
*Fallicambarus (Creaserinus) uhleri*.—Hobbs, 1973a:463.

TYPES.—Holotype, MCZ 3634 (male I); paratypes, MCZ.

TYPE LOCALITY.—"Swamp on Eastern Road near Felsbury, Somerset County, Maryland" (restricted by Faxon, 1914:426).

RANGE.—Atlantic coastal plain, from Maryland to South Carolina.

HABITAT.—Lotic and lentic habitats and burrows.

### Subgenus *Fallicambarus* Hobbs

*Cambarus*.—Penn, 1955:73.  
*Fallicambarus* Hobbs, 1969b:111 [in part].  
 Subgenus *Fallicambarus*.—Hobbs, 1973a:462. [Type species, by original designation, *Cambarus strawni* Reimer, 1966:11. Gender: masculine.]

### *Fallicambarus (Fallicambarus) dissitus* (Penn)

FIGURE 115

*Cambarus dissitus* Penn, 1955:73, figs. 1-13.  
*Fallicambarus dissitus*.—Hobbs, 1969b:111, fig. 20d; 1972b:99, figs. 81c, 82d; 1974b:23, fig. 88.  
*Fallicambarus (Fallicambarus) dissitus*.—Hobbs, 1973a:463.

TYPES.—Holotype, allotype, and morphotype, USNM 98125, 98126, 98127 (male I, female, male II); paratypes, ANSP, AMNH, CM, TU, USNM.

TYPE LOCALITY.—Three miles (4.8 km) east of Choudrant, Lincoln Parish, Louisiana.

RANGE.—Red and Ouachita watersheds in Caldwell, Grant, and Lincoln parishes, Louisiana, and Columbia and Union counties, Arkansas.

HABITAT.—Burrows (primary burrower).

### *Fallicambarus (Fallicambarus) harpi* Hobbs and Robison

FIGURE 112

*Fallicambarus (Fallicambarus) harpi* Hobbs and Robison, 1985:1035, fig. 1.

TYPES.—Holotype, allotype, and morphotype, USNM 217946, 217947, 217948 (male I, female, male II); paratypes, MHNP, RNHL, USNM.

TYPE LOCALITY.—Seepage area 0.2 mile (0.32 km) east of Glenwood, Pike County, Arkansas (Sec. 1, T. 5S, R. 24W).

RANGE.—Known from only two localities, both in the Ouachita River basin in Pike County, Arkansas.

HABITAT.—Burrows (primary burrower).



*Fallicambarus (Fallicambarus) jeanae* Hobbs

FIGURE 113

*Fallicambarus (Fallicambarus) jeanae* Hobbs, 1973a:463, fig. 1.*Fallicambarus (Fallicambarus) spectrum* Hobbs, 1973a:469, fig. 2. [Types: holotype and allotype, USNM 144674, 144675 (male I, female); paratypes, USNM. Type locality: two miles (3.2 km) east of Daisy, Pike County, Arkansas, on U.S. Hwy. 70.]

TYPES.—Holotype and allotype, USNM 144672, 144673 (male I, female); paratypes, USNM.

TYPE LOCALITY.—Seepage area 1.8 miles (2.9 km) east of the Clark County line, Hot Spring County, Arkansas, on St. Rte. 84.

RANGE.—Ouachita River basin in Clark, Hot Spring, Montgomery, and Pike counties, Arkansas.

HABITAT.—Burrows (primary burrower).

REMARKS.—*Fallicambarus (F.) spectrum* appears to represent only a distinctive color morph of *F. (F.) jeanae* and is therefore placed herein in the synonymy of that species.*Fallicambarus (Fallicambarus) macneesei* (Black)

FIGURE 111

*Cambarus macneesei* Black, 1967:173, figs. 1-12.*Fallicambarus macneesei*.—Hobbs, 1969b:111, fig. 20g; 1972b:99, figs. 4c, 81a; 1974b:23, fig. 80.*Fallicambarus (Fallicambarus) macneesei*.—Hobbs, 1973a:463.

TYPES.—Holotype, allotype, and morphotype, USNM 117681, 117683, 117682 (male I, female, male II); paratypes, USNM, TU, MCZ, Joe B. Black.

TYPE LOCALITY.—Roadside ditches along East McNeese Road, 1.8 miles (2.9 km) west of intersection with State Route 14, Lake Charles, Calcasieu Parish, Louisiana.

RANGE.—Known only from Calcasieu, and Lafayette parishes, Louisiana, and Brazoria County, Texas.

HABITAT.—Burrows (primary burrower).

*Fallicambarus (Fallicambarus) strawni* (Reimer)

FIGURE 114

*Cambarus strawni* Reimer, 1966:11, figs. 9-18.*Fallicambarus strawni*.—Hobbs, 1969b:111, figs. 2f, 13j, 20i; 1972b:99, figs. 4a, 81b; 1974b:24, fig. 81.*Fallicambarus (Fallicambarus) strawni*.—Hobbs, 1973a:463.

TYPES.—Holotype, allotype, and morphotype, USNM 116675, 116676, 116677 (male I, female, male II); paratypes, Rollin D. Reimer.

TYPE LOCALITY.—Small marshy area in the Saline River drainage, 2.7 miles (4.3 km) north of Dierks, Howard County, Arkansas.

RANGE.—Saline River basin in Sevier, Howard, and Pike counties, Arkansas.

HABITAT.—Burrows, both simple and complex (primary burrower).

Genus *Faxonella* Creaser*Cambarus*.—Hay, 1899a:122 [in part].Subgenus *Faxonella* Creaser, 1933b:21. [Type species, by monotypy,*Cambarus clypeatus* Hay, 1899a:122. Gender: feminine.]*Faxonius*.—Creaser, 1933b:19 [in part].*Orconectes*.—Hobbs, 1942a:352 [in part].*Procambarus*.—Hoff, 1944:349 [lapsus].*Faxonella*.—Fitzpatrick, 1963:61.*Faxonella beyeri* (Penn)

FIGURE 127

*Orconectes (Faxonella) beyeri* Penn, 1950a:166, figs. 1-9.*Faxonella beyeri*.—Creaser, 1962:3 [by implication].—Fitzpatrick, 1963:61.—Hobbs, 1972b:29, fig. 19b; 1974b:24, fig. 91.

TYPES.—Holotype, allotype, and morphotype, USNM 90361, 90362, 90363 (male I, female, male II); paratypes, TU, USNM.

TYPE LOCALITY.—Roadside ditch on U.S. Highway 84, 2 miles (3.2 km) northeast of Naborton, De Soto Parish, Louisiana.

RANGE.—Known only from De Soto and Natchitoches parishes, Louisiana, and Angelina, Jasper, and San Augustine counties, Texas.

HABITAT.—Lentic habitats.

*Faxonella blairi* Hayes and Reimer

FIGURE 125

*Faxonella blairi* Hayes and Reimer, 1977:1, figs. 1-7.

TYPES.—Holotype and allotype, USNM 145705, 145706.

TYPE LOCALITY.—Woodland swamp approximately 100 yards (35 m) west of U.S. Highway 259 on north side of Little River, 7 miles (11.2 km) south of Broken Bow [not "Box"], McCurtain County, Oklahoma.

RANGE.—Southeastern Oklahoma and southwestern Arkansas in the Little and Red river basins. (See "Remarks" under *Faxonella clypeata*.)

HABITAT.—Lentic situations.

*Faxonella clypeata* (Hay)

FIGURE 124

*Cambarus clypeatus* Hay, 1899a:122, fig. 2.*Faxonius clypeatus*.—Creaser, 1933b:19, pl. 1: figs. 7, 8, pl. 2: figs. 1, 2.*Faxonius (Faxonella) clypeatus*.—Creaser, 1933b:21 [by implication].*Orconectes clypeatus*.—Hobbs, 1942a:352 [by implication].*Orconectes clypeata*.—Hobbs, 1942b:14.*Orconectes (Faxonella) clypeata*.—Hobbs, 1942b:154, pl. 11: figs. 181-185.*Procambarus clypeata*.—Hoff, 1944:349 [lapsus calami].

*Orconectes (Faxonella) clypeatus*.—Penn, 1952a:746.

*Faxonella clypeata*.—Creaser, 1962:3 [by implication].—Fitzpatrick, 1963:61.—Hobbs, 1972b:29, fig. 19c; 1974b:24, fig. 89.—Huner, 1977:10.—Pflieger, 1987a:29; 1987b:13.

*Faxonella clypeata*.—Unestam, 1969:203 [erroneous spelling].

*Faxonella clypeata*.—Spitzzy, 1976:445 [erroneous spelling].

*Faxonella clypeata*.—Hobbs III, Thorp, and Anderson, 1976:13 [erroneous spelling].

*Faxonella clypeatus*.—Rao and Fingerman, 1983:518.

TYPES.—Holotype, USNM 17277 (female).

TYPE LOCALITY.—Bay St. Louis, Hancock County, Mississippi.

RANGE.—Le Flore County, Oklahoma(?), and Marion County, Texas, east to Gadsden County, Florida, and Richland County, South Carolina.

HABITAT.—Sluggish streams, lentic situations, and burrows (tertiary burrower).

REMARKS.—The ranges of *F. clypeata*, *F. creaseri*, and *F. blairi* have not been clearly defined. A study is needed to ascertain whether or not current records for Missouri, Arkansas, and Oklahoma are based on correct identifications.

#### *Faxonella creaseri* Walls

FIGURE 126

*Faxonella creaseri* Walls, 1968:413, figs. 1–9.—Hobbs, 1972b:29, figs. 5w, 19a; 1974b:25, fig. 90.

TYPES.—Holotype, allotype, and morphotype, USNM 129215, 129216, 129214 (male I, female, male II); paratypes, TU, MCZ, IBM, AMS, Joe B. Black, and Jerry G. Walls.

TYPE LOCALITY.—Roadside ditch 3.0 miles (4.8 km) north of Grayson on U.S. Highway 165, Caldwell Parish, Louisiana.

RANGE.—Known with certainty from only several localities in Caldwell Parish, Louisiana. Tentatively reported here from Arkansas and Missouri.

HABITAT.—Temporary pools in roadside ditches.

REMARKS.—Specimens of the genus from eastern Arkansas and southeastern Missouri may be assignable to *F. creaseri* or perhaps this taxon represents only a local variant of *F. clypeata*. (See "Range" and "Remarks" under *F. clypeata*.) Studies of populations in eastern Arkansas and southern Missouri are badly needed.

#### Genus *Hobbseus* Fitzpatrick and Payne

*Cambarus*.—Hobbs, 1955a:95 [in part].

*Hobbseus* Fitzpatrick and Payne, 1968:15. [Type species, by original designation, *Cambarus cristatus* Hobbs, 1955a:95. Gender: masculine.]

#### *Hobbseus attenuatus* Black

FIGURE 132

*Hobbseus attenuatus* Black, 1969:193, figs. 1–12.—Hobbs, 1972b:75, fig. 58c; 1974b:25, fig. 95.

TYPES.—Holotype, allotype, and morphotype, USNM

129535, 129536, 129537 (male I, female, male II); paratypes, USNM, MCZ, TU, Joe B. Black.

TYPE LOCALITY.—"Roadside ditch adjacent to Noxapater Creek, on gravel road two miles [3.2 km] north of State Route 395, six miles [9.6 km] west of Noxapater, Winston County, Mississippi (R. 11E, T. 14N)."

RANGE.—Pearl River drainage in Winston and Neshoba counties, Mississippi.

HABITAT.—Lentic situations.

#### *Hobbseus cristatus* (Hobbs)

FIGURE 129

*Cambarus cristatus* Hobbs, 1955a:95, figs. 1–11.

*Hobbseus cristatus*.—Fitzpatrick and Payne, 1968:15.—Hobbs, 1972b:75, figs. 5o, 58b; 1974b:25, fig. 93.

TYPES.—Holotype, allotype, and morphotype, USNM 96985, 96986, 96987 (male I, female, male II); paratypes, MCZ, TU, USNM, BMNH.

TYPE LOCALITY.—Roadside ditch, 11.3 miles (18.1 km) south of Macon on U.S. Highway 45, Noxubee County, Mississippi.

RANGE.—Tombigbee River basin in Kemper, Lauderdale, Lowndes, and Noxubee counties, Mississippi.

HABITAT.—Lentic and lotic habitats and burrows (probably secondary burrower).

#### *Hobbseus orconectoides* Fitzpatrick and Payne

FIGURE 128

*Hobbseus orconectoides* Fitzpatrick and Payne, 1968:17, figs. 1–12.—Hobbs, 1972b:75, fig. 58a; 1974b:25, fig. 92.

TYPES.—Holotype, allotype, and morphotype, USNM 129191, 129193, 129194 (male I, female, male II); paratypes, MCZ, TU, OSM, USNM.

TYPE LOCALITY.—Woodland pond near Rock Hill community, about 4.25 miles (6.8 km) north of Starkville, Oktibbeha County, Mississippi (Sec. 1, T. 19N, R. 14E).

RANGE.—Known only from Lowndes, Oktibbeha, and Webster counties, Mississippi.

HABITAT.—Lentic situations and burrows (probably secondary burrower).

#### *Hobbseus petilus* Fitzpatrick

FIGURE 133

*Hobbseus petilus* Fitzpatrick, 1977:367, fig. 1.

TYPES.—Holotype, allotype, and morphotype, USNM 147673, 147674, 147675 (male I, female, male II); paratypes, USNM, Joe B. Black.

TYPE LOCALITY.—Tributary of Patch Creek (Tombigbee River drainage), 7.4 miles (11.8 km) E of U.S. Highway 45 in Saltillo, on State Route 363, Lee County, Mississippi.



RANGE.—Itawamba, Lee, and Monroe counties, Mississippi.  
HABITAT.—Lentic and sluggish lotic situations.

### *Hobbseus prominens* (Hobbs)

FIGURE 130

*Cambarus prominens* Hobbs, 1966a:110, figs. 1–10.

*Hobbseus prominens*.—Fitzpatrick and Payne, 1968:15.—Hobbs, 1972b:76, figs. 58e, 59b; 1974b:25, fig. 94.

TYPES.—Holotype, allotype, and morphotype, USNM 115603, 115604, 115605 (male I, female, male II); paratypes, USNM, MCZ.

TYPE LOCALITY.—Roadside ditch, 3 miles (4.8 km) west of Demopolis, on U.S. Highway 80, Marengo (not Sumter) County, Alabama.

RANGE.—Mobile River drainage in Choctaw, Clarke, Dallas, Hale, Marengo, Perry, Sumter, and Webster counties, Alabama. Also present in northern Mississippi.

HABITAT.—Lentic and lotic situations and burrows (probably secondary burrower).

### *Hobbseus valleculeus* (Fitzpatrick)

FIGURE 131

*Cambarus valleculeus* Fitzpatrick, 1967b:163, figs. 1–12.

*Hobbseus valleculeus*.—Fitzpatrick and Payne, 1968:15.—Hobbs, 1972b:76, figs. 58d, 59a; 1974b:25, fig. 96.

TYPES.—Holotype, allotype, and morphotype, USNM 117963, 117964, 117965 (male I, female, male II); paratypes, MCZ, TU.

TYPE LOCALITY.—Small creek, 6.8 miles (10.9 km) south of junction of State Routes 15 and 12 on State Route 15, Choctaw County, Mississippi.

RANGE.—Known only from a few localities in Attala, Choctaw, and Kemper counties, Mississippi.

HABITAT.—Streams.

### Genus *Orconectes* Cope

*Astacus*.—Rafinesque, 1817:42.

Subgenus *Cambarus* Erichson, 1846:95 [in part].

*Cambarus*.—Girard, 1852: 87 [in part].

*Orconectes* Cope, 1872:419. [Type species, by subsequent designation (Fowler, 1912:339), *Orconectes inermis* Cope, 1872:419. Gender: masculine.]—Hobbs, 1942a:352.

*Cambarus*.—Packard, 1888:156 [erroneous spelling].

*Orconectes*.—Lönningberg, 1894:126 [erroneous spelling].

*Cambarus*.—Williamson, 1899:47 [erroneous spelling].

*Cambarus*.—Price, 1900:155 [erroneous spelling].

*Orconectis*.—Harris, 1903:113 [erroneous spelling].

Subgenus *Faxonius* Ortmann, 1905c:97. [Type species, by original designation, *Astacus limosus* Rafinesque, 1817:42. Gender: masculine. Proposed as subgenus of *Cambarus*.]—Fitzpatrick, 1987a:51.

*G[am]barus*.—Ortmann, 1905c:112 [erroneous spelling].

*Fraxonius*.—Turner, 1926:43 [erroneous spelling].

*Faxonius*.—Creaser, 1933a:1.

*Orconetes*.—Wolf, 1934–1938:104.—Avault, 1973:242. [Erroneous spelling.]

*Faxonicus*.—Fleming, 1938:302 [erroneous spelling].

*Cambarrus*.—Fleming, 1939:305 [erroneous spelling].

*Cityphobius*.—Joleaud, 1939:14 [error for *C. typhobius*].

*Fexonius*.—Rioja, 1941:193 [erroneous spelling].

*Orconectes*.—Williams, 1952:330 [erroneous spelling].

*Orconectas*.—Villalobos, 1953:351 [erroneous spelling].

*Orconects*.—Lewis, 1955:146 [erroneous spelling].

*Gambarus*.—Croizat, 1958:908 [erroneous spelling].

*Orconectes*.—Threinen, 1958:1 [erroneous spelling].

*Camburus*.—Băcescu, 1967:218 [erroneous spelling].

*Oronectes*.—Băcescu, 1967:218 [erroneous spelling].

*Orchonectes*.—Dimond et al., 1968:760 [erroneous spelling].

*Orconectus*.—Ray and Stevens, 1970:58 [erroneous spelling].

*Orconectes*.—Fielder, 1972:133 [erroneous spelling].

*Orconeotes*.—Unestam, 1973:4 [erroneous spelling].

*Oroncestes*.—Wielgus, 1973:119 [erroneous spelling].

*Orcenectes*.—Hart and Hart, 1974:45 [erroneous spelling].

*Oroconectes*.—Hobbs III, 1975:273 [erroneous spelling].

*Orcnoectes*.—O'Brien, 1976:84 [erroneous spelling].

*Oreconectes*.—Yassini, 1977:201 [erroneous spelling].

*Onconectes*.—Price and Payne, 1977:79 [erroneous spelling].

*Procambarus*.—Huner, 1978:4 [lapsus for *Orconectes*].

*Orconelctes*.—Brodsky, 1981:122 [erroneous spelling].

*Orconectes*.—Huner and Naqvi, 1984:405 [erroneous spelling].

Subgenus *Billecambarus* Fitzpatrick, 1987a:47. [Type species, by original designation, *Cambarus Harrisonii* Faxon, 1884:130. Gender: masculine.]

Subgenus *Buannulifictus* Fitzpatrick, 1987a:49. [Type species, by original designation, *Cambarus Palmeri* Faxon, 1884:124. Gender: masculine.]

Subgenus *Crockerinus* Fitzpatrick, 1987a:50. [Type species, by original designation, *Cambarus Sanbornii* Faxon, 1884:128. Gender: masculine.]

Subgenus *Gremicambarus* Fitzpatrick, 1987a:53. [Type species, by original designation, *Cambarus virilis* Hagen, 1870:63. Gender: masculine.]

Subgenus *Hespericambarus* Fitzpatrick, 1987a:54. [Type species, by original designation, *Cambarus difficilis* Faxon, 1898:656. Gender: masculine.]

Subgenus *Procericambarus* Fitzpatrick, 1987a:57. [Type species, by original designation, *Cambarus forceps* Faxon, 1884:133. Gender: masculine.]

Subgenus *Rhoadesius* Fitzpatrick, 1987a:58. [Type species, by original designation, *Cambarus sloanii* Bundy, 1876:24. Gender: masculine.]

Subgenus *Tragulicambarus* Fitzpatrick, 1987a:60. [Type species, by original designation, *Cambarus lancifer* Hagen, 1870:59. Gender: masculine.]

REMARKS.—Hobbs (1942a:350) erroneously indicated that *Orconectes inermis* Cope was the type-species by monotypy. Cope (1872:419) stated: "The present genus embraces two species, *O. inermis* of the Wyandotte and the *O. pellucidus* of the Mammoth Cave."

### Subgenus *Billecambarus* Fitzpatrick

*Cambarus*.—Faxon, 1884:130 [in part].

Subgenus *Faxonius* Ortmann, 1905c:111 [in part].

*Faxonius*.—Creaser, 1933a:3 [in part].

*Orconectes*.—Hobbs, 1942a:352 [in part].

Subgenus *Billecambarus* Fitzpatrick, 1987a:47. [Type species, by original designation, *Cambarus Harrisonii* Faxon, 1884:130. Gender: masculine.]

### *Orconectes (Billecambarus) harrisonii* (Faxon)

FIGURE 149

*Cambarus Harrisonii* Faxon, 1884:130; 1885a:94, pl. 3: fig. 1, pl. 9: figs. 9, 9'.

*Cambarus harrisonii*.—Hay, 1899b:960.

*Cambarus harrisoni*.—Ortmann, 1902:278.

*Cambarus (Faxonius) harrisoni*.—Ortmann, 1905c:111.  
*Faxonius harrisonii*.—Creaser, 1933a:3 [by implication]; 1934a:1; 1962:2 [by implication].  
*Faxonius (Faxonius) harrisonii*.—Creaser, 1933b:21 [by implication].  
*Orconectes harrisonii*.—Hobbs, 1942a:352 [by implication].  
*Orconectes (Orconectes) harrisonii*.—Hobbs, 1942b:154 [by implication].  
*Orconectes harrisoni*.—Rhoades, 1944a:117.—Pflieger, 1987a:28; 1987:12.  
*Orconectes harrisonii*.—Williams, 1954:839, figs. 35–41.—Fitzpatrick, 1963:61 [by implication].—Hobbs, 1974b:29, fig. 111.  
*Orconectes (Billecambarus) harrisonii*.—Fitzpatrick, 1987a:49, fig. 1.

TYPES.—Syntypes, MCZ 3586 (11 male I, 5 female), USNM 25826 (male I, female).

TYPE LOCALITY.—Irondale, Washington County, Missouri.

RANGE.—St. Francis, St. Genevieve, and Washington counties, Missouri.

HABITAT.—Streams.

### Subgenus *Buannulifictus* Fitzpatrick

*Cambarus*.—Faxon, 1884:124 [in part].  
 Subgenus *Faxonius* Ortmann, 1905c:103 [in part].  
*G[ambarus]*.—Ortmann, 1905c:112 [erroneous spelling].  
*Faxonius*.—Creaser, 1933a:3 [in part].  
*Orconectes*.—Hobbs, 1942a:352 [in part].  
 Subgenus *Orconectes*.—Hobbs, 1942b:154 [in part].  
 Subgenus *Buannulifictus* Fitzpatrick, 1987a:49. [Type species, by original designation, *Cambarus Palmeri* Faxon, 1884:124. Gender: masculine.]

### *Orconectes (Buannulifictus) hobbsi* Penn

FIGURE 197

*Orconectes hobbsi* Penn, 1950c:381, figs. 1–10; 1959:18, figs. 32, 52, 68, 82.—Fitzpatrick, 1963:61 [by implication].—Hobbs, 1974b:29, fig. 160.  
*Orconectes (Orconectes) hobbsi*.—Hobbs, 1959:895.  
*Faxonius hobbsi*.—Creaser, 1962:2 [by implication].  
*Orconectes (Buannulifictus) hobbsi*.—Fitzpatrick, 1987a:49.

TYPES.—Holotype, allotype, and morphotype, USNM 90952, 90953, 90954 (male I, female, male II); paratypes, MCZ, ANSP, USNM, TU, AMNH.

TYPE LOCALITY.—Headwater creek of Bayou Lacombe at St. Tammany, 6 miles (9.6 km) north of Lacombe on State Route 187, St. Tammany Parish, Louisiana.

RANGE.—Lake Pontchartrain watershed in Louisiana and Mississippi.

HABITAT.—Rapidly flowing streams.

### *Orconectes (Buannulifictus) meeki brevis* Williams

FIGURE 193

*Orconectes meeki brevis* Williams, 1952:348, figs. 41–48; 1954:881, figs. 166, 175–182.—Fitzpatrick, 1963:61 [by implication].—Hobbs, 1974b:34, fig. 156.  
*Orconectes (Orconectes) meeki brevis*.—Hobbs, 1959:895 [by implication].  
*Faxonius meeki brevis*.—Creaser, 1962:2 [by implication].  
*Orconectes (Buannulifictus) meeki brevis*.—Fitzpatrick, 1987a:50.

TYPES.—Holotype, allotype, and “morphotype,” USNM 118848 (male I, female, male II); paratypes, USNM, MCZ.

TYPE LOCALITY.—Streams, approximately 5 miles (8 km) north of Stilwell on U.S. Highway 59, Adair County, Oklahoma.

RANGE.—Tributaries of the Red River in eastern Oklahoma and extreme northwestern Arkansas.

HABITAT.—Rocky streams.

### *Orconectes (Buannulifictus) meeki meeki* (Faxon)

FIGURE 192

*Cambarus meeki* Faxon, 1898:657, pl. 65: figs. 5–9.  
*Cambarus meeki*.—Hay, 1899b:960 [erroneous spelling].  
*Cambarus (Faxonius) meeki*.—Ortmann, 1905c:112.  
*G[ambarus] (Faxonius) meeki*.—Ortmann, 1905c:112 [erroneous spelling].  
*Faxonius meeki*.—Creaser, 1933a:3 [by implication].  
*Faxonius (Faxonius) meeki*.—Creaser, 1933b:21 [by implication].  
*Orconectes meeki*.—Hobbs, 1942a:352 [by implication].—Pflieger, 1987a:28; 1987b:12.  
*Orconectes (Orconectes) meeki*.—Hobbs, 1942b:154 [by implication].  
*Orconectes meeki meeki*.—Williams, 1952:350; 1954:878, figs. 166–174.—Fitzpatrick, 1963:61 [by implication].—Hobbs, 1974b:34, fig. 155.  
*Orconectes (Orconectes) meeki meeki*.—Hobbs, 1959:895 [by implication].  
*Faxonius meeki meeki*.—Creaser, 1962:2 [by implication].  
*Orconectes (Buannulifictus) meeki meeki*.—Fitzpatrick, 1987a:50.

TYPES.—Syntypes, MCZ 4363 (2 male II, 3 female), USNM 19680 (10 male II, 13 female), Mus. Zool. Torino 433.

TYPE LOCALITY.—Walnut Fork of Big Piney Creek, Swain, Newton County, Arkansas.

RANGE.—Arkansas and White river systems north of the 35th parallel in Arkansas.

HABITAT.—Streams.

### *Orconectes (Buannulifictus) palmeri creolanus* (Creaser)

FIGURE 196

*Faxonius (Faxonius) creolanus* Creaser, 1933b:16, pl. 1: figs. 1, 2 [subgenus by implication].  
*Cambarus creolanus*.—Penn, 1941:8.  
*Faxonius creolanus*.—Hobbs, 1942a:352.  
*Orconectes creolanus*.—Hobbs, 1942a:352.  
*Orconectes (Orconectes) creolanus*.—Hobbs, 1942b:154 [by implication].  
*Orconectes (Orconectes) palmeri creolanus*.—Penn, 1952a:744.  
*Orconectes palmeri creolanus*.—Penn, 1953e:6; 1957:231, figs. 24, 27, 30.—Fitzpatrick, 1963:61 [by implication].—Hobbs, 1974b:37, fig. 159.  
*Faxonius palmeri creolanus*.—Creaser, 1962:2 [by implication].  
*Orconectes palmeri creolanus*.—Godley, McDiarmid, and Rojas, 1984:83 [erroneous spelling].  
*Orconectes (Buannulifictus) palmeri creolanus*.—Fitzpatrick, 1987a:49.

TYPES.—Holotype and allotype, USNM 101972 and 98341 (male I, female); paratypes, MCZ, USNM.

TYPE LOCALITY.—Tributary to Amite River, 0.5 mile (0.8 km) north of Ethel, East Feliciana Parish, Louisiana.

RANGE.—Mississippi and Louisiana in “the Lake Pontchartrain drainage area plus the Pearl and Pascagoula rivers” (Penn, 1957:258).

HABITAT.—Rapid and sluggish streams.

*Orconectes (Buannulifictus) palmeri longimanus* (Faxon)

FIGURE 195

*Cambarus palmeri longimanus* Faxon, 1898:655, pl. 64: figs. 1–6.  
*Cambarus longimanus*.—Creaser and Ortenburger, 1933:16, 38, figs. 4, 16, 26.  
*Faxonius longimanus*.—Creaser, 1933a:3 [by implication].  
*Faxonius (Faxonius) longimanus*.—Creaser, 1933b:19 [by implication].  
*Cambarus longimanus*.—Goodnight, 1940:41 [erroneous spelling].  
*Orconectes palmeri longimanus*.—Hobbs, 1942a:352 [by implication]; 1974b:37, fig. 158.—Williams, 1954:894, figs. 200, 209–216.—Penn, 1957:231, figs. 25, 28.—Fitzpatrick, 1963:61 [by implication].  
*Orconectes (Orconectes) palmeri longimanus*.—Hobbs, 1942b:154 [by implication].  
*Orconectes longimanus*.—Hoff, 1943:282.  
*Faxonius palmeri longimanus*.—Creaser, 1962:2 [by implication].  
*Orconectes (Buannulifictus) palmeri longimanus*.—Fitzpatrick, 1987a:50.

TYPES.—Holotype, MCZ 7390 (male I); paratypes, MCZ, USNM, Mus. Zool. Torino.

TYPE LOCALITY.—Red River, Arthur City, Lamar County, Texas.

RANGE.—Texas, Oklahoma, Kansas, Arkansas, and Louisiana, “all western tributaries of the Mississippi River from the Arkansas River to the Gulf, and Gulf drainage streams from the Mississippi River to the Guadalupe River in Texas” (Penn, 1957:258).

HABITAT.—Streams.

*Orconectes (Buannulifictus) palmeri palmeri* (Faxon)

FIGURE 194

*Cambarus Palmeri* Faxon, 1884:124; 1885a:103, pl. 3: fig. 6, pl. 10: figs. 5a, 5a'.  
*Cambarus palmeri*.—Underwood, 1886:371.  
*Cambarus palmeri palmeri*.—Faxon, 1898:655 [by implication].  
*Cambarus (Faxonius) palmeri*.—Ortmann, 1905c:113.  
*Faxonius palmeri*.—Creaser, 1933a:3 [by implication].  
*Faxonius (Faxonius) palmeri*.—Creaser, 1933b:19 [by implication].  
*Cambarus (Faxonius) creaseri* Lyle, 1938:76 [nomen nudum, fide J.F. Fitzpatrick, in litt.].  
*Orconectes palmeri palmeri*.—Hobbs, 1942a:352 [by implication]; 1974b:37, fig. 157.—Hobbs and Marchard, 1943:28, figs. 7, 13, 19, 26.—Penn, 1957:231, figs. 26, 29.—Fitzpatrick, 1963:61 [by implication].  
*Orconectes (Orconectes) palmeri*.—Hobbs, 1942b:154 [by implication].  
*Faxonius palmeri palmeri*.—Creaser, 1962:2 [by implication].  
*Orconectes palmeri*.—Huner, 1977:11.—Pflieger, 1987a:30; 1987b:14.  
*Orconectes (Buannulifictus) palmeri palmeri*.—Fitzpatrick, 1987a:49, fig. 2.

TYPES.—Syntypes, USNM 4872 (8 male II, 7 female), MCZ 3564 (2 male II, 2 female).

TYPE LOCALITY.—Creek at eastern side of Reelfoot Lake, Obion County, Tennessee.

RANGE.—Lower Mississippi Valley, occurring in western Kentucky, Tennessee, Louisiana, and Mississippi, and in eastern Missouri and Arkansas.

HABITAT.—Streams.

Subgenus *Crockerinus* Fitzpatrick

*Cambarus*.—Girard, 1852:88 [in part].  
*Astacus*.—Hagen, 1870:61 [lapsus].

*Cambarus*.—Williamson, 1899:47 [erroneous spelling].  
 Subgenus *Faxonius* Ortmann, 1905c:112 [in part].  
*Faxonius*.—Williamson, 1907:754 [intended as subgeneric name].—Creaser, 1933a:3 [in part].  
*Cambarus*.—Fleming, 1939:304 [erroneous spelling].  
*Cambarrus*.—Fleming, 1939:305 [erroneous spelling].  
*Orconectes*.—Hobbs, 1942a:352 [in part].  
 Subgenus *Orconectes*.—Hobbs, 1942b:154 [in part].  
*Orconectes*.—Williams, 1952:330 [erroneous spelling].  
*Orconectes*.—Threinen, 1958:1 [erroneous spelling].  
*Orconectes*.—Felder, 1972:132 [erroneous spelling].  
 Subgenus *Crockerinus* Fitzpatrick, 1987a:50. [Type species, by original designation, *Cambarus Sanbornii* Faxon, 1884:128. Gender: masculine.]

*Orconectes (Crockerinus) bisectus* Rhoades

FIGURE 164

*Orconectes bisectus* Rhoades, 1944a:129, fig. 7a–d.—Fitzpatrick, 1963:61 [by implication].—Prins and Fitzpatrick, 1965:141, figs. 1–12.—Hobbs, 1974b:27, fig. 125.  
*Orconectes (Orconectes) bisectus*.—Hobbs, 1959:890 [by implication].  
*Faxonius bisectus*.—Creaser, 1962:2 [by implication].  
*Orconectes (Crockerinus) bisectus*.—Fitzpatrick, 1987a:51.

TYPES.—Holotype and allotype, USNM 81322, 81323 (male II, female); paratypes, MCZ, OSM.

TYPE LOCALITY.—Brushy Fork, 1 mile (1.6 km) west of Repton, Crittenden County, Kentucky.

RANGE.—Ohio River drainage in eastern part of Crittenden County, Kentucky.

HABITAT.—Medium-sized streams.

*Orconectes (Crockerinus) erichsonianus* (Faxon)

FIGURE 162

*Cambarus erichsonianus* Faxon, 1898:659, pl. 64: figs. 7–12.  
*Cambarus erichsoni*.—Ortmann, 1905c:109 [erroneous spelling].  
*Cambarus (Faxonius) erichsonianus*.—Ortmann, 1905c:112.  
*Cambarus spinosus gulielmi* Faxon, 1914:375. [Syntypes, USNM 26379 (6 male II, 6 female, 4 juvenile male), MCZ 7448 (male II, female). Type locality, streams from John Ross Spring, near Rossville, Walker County, Georgia.]  
*Cambarus gulielmi*.—Ortmann, 1931:68.  
*Faxonius erichsonianus*.—Creaser, 1933a:3 [by implication]; 1962:2 [by implication].  
*Faxonius (Faxonius) erichsonianus*.—Creaser, 1933b:7 [by implication].  
*Cambarus erichsonianus*.—Fleming, 1938:299 [erroneous spelling].  
*Orconectes erichsonianus*.—Hobbs, 1942a:352 [by implication]; 1974b:29, fig. 123; 1981:284, figs. 19d, 108a,b, 109–111, 231.—Fitzpatrick, 1963:61 [by implication]; 1967a:147, figs. 2–18, 20.  
*Orconectes (Orconectes) erichsonianus*.—Hobbs, 1942b:154 [by implication].  
*Orconectes (Crockerinus) erichsonianus*.—Fitzpatrick, 1987a:51.

TYPES.—Syntypes, USNM 20787 (3 male I, 4 female), MCZ 4347 (male I, female, male II).

TYPE LOCALITY.—Rip Roaring Fork, 5 miles (8.0 km) northwest of Greeneville, Greene County, Tennessee.

RANGE.—Tennessee, Elk, and Coosa river systems in southwestern Virginia, eastern Tennessee, northwestern Georgia, and northern Alabama.

HABITAT.—Streams.



*Orconectes (Crockerinus) eupunctus* Williams

FIGURE 154

*Orconectes eupunctus* Williams, 1952:330 [erroneous spelling].  
*Orconectes eupunctus* Williams, 1952:334, pl. 1: figs. 1-8; 1954:840, figs. 41-49.—Fitzpatrick, 1963:61 [by implication].—Hobbs, 1974b:19, fig. 116.—Pflieger, 1987a:24; 1987b:8.  
*Orconectes (Orconectes) eupunctus*.—Hobbs, 1959:894.  
*Faxonius eupunctus*.—Creaser, 1962:2 [by implication].  
*Orconectes (Crockerinus) eupunctus*.—Fitzpatrick, 1987a:51.

TYPES.—Holotype, allotype, and "morphotype" USNM 129200 (male I, female, male II); paratypes, USNM, MCZ.

TYPE LOCALITY.—Eleven Point River at Riverton, Oregon County, Missouri.

RANGE.—Spring River and Eleven Point drainage systems in Arkansas and Missouri.

HABITAT.—Clear, cold, rapid streams.

*Orconectes (Crockerinus) illinoiensis* Brown

FIGURE 166

*Orconectes illinoiensis* Brown, 1956:163, figs. 1-9.—Hobbs, 1974b:30, fig. 128.—Page, 1985b:386, figs. 116-119, frontispiece.  
*Faxonius illinoiensis*.—Creaser, 1962:2 [by implication].  
*Orconectes illinoiensis*.—Hobbs and Fitzpatrick, 1962:207.—Fitzpatrick, 1967a:149, figs. 2-18, 21. [Erroneous spelling.]  
*Orconectes (Crockerinus) illinoiensis*.—Fitzpatrick, 1987a:51.

TYPES.—Holotype, allotype, and morphotype, USNM 97997, 97998, 97999 (male I, female, male II); paratypes, Max R. Matteson, Troy C. Dorris, USNM.

TYPE LOCALITY.—Cypress Creek, 3.2 miles (5.1 km) south of Mount Pleasant, Union County, Illinois.

RANGE.—Ohio and Big Muddy basins in Alexander, Hardin, Jackson, Johnson, Massac, Pope, Pulaski, Union, and Williamson counties, Illinois (see Page, 1985b:386).

HABITAT.—Streams.

*Orconectes (Crockerinus) jeffersoni* Rhoades

FIGURE 157

*Orconectes propinquus jeffersoni* Rhoades, 1944a:123, fig. 5a-f.—Fitzpatrick, 1963:61 [by implication].  
*Orconectes (Orconectes) propinquus jeffersoni*.—Hobbs, 1959:894 [by implication].  
*Faxonius propinquus jeffersoni*.—Creaser, 1962:2 [by implication].  
*Orconectes jeffersoni*.—Fitzpatrick, 1967a:152, figs. 2-18, 22.—Hobbs, 1974b:31, fig. 119.  
*Orconectes (Crockerinus) jeffersoni*.—Fitzpatrick, 1987a:51.

TYPES.—Holotype, allotype, and "morphotype" (designated by Rhoades as allotype), USNM 81316, 81318, 81317 (male I, female, male II); paratypes, MCZ, CM, USNM, OSM.

TYPE LOCALITY.—Tributary of Muddy Fork of Beargrass Creek, 2 miles (3.2 km) east of Louisville corporation line on U.S. Highway 42, Jefferson County, Kentucky.

RANGE.—Tributaries to Beargrass Creek, Ohio River, Jefferson County, Kentucky.

HABITAT.—Streams.

*Orconectes (Crockerinus) marchandi* Hobbs

FIGURE 153

*Orconectes marchandi* Hobbs, 1948b:140, figs. 1-4, 10-14, 17; 1974b:34, fig. 115.—Williams, 1954:843, figs. 1, 50-57.—Fitzpatrick, 1963:61 [by implication].—Pflieger, 1987a:24; 1987b:8.  
*Orconectes (Orconectes) marchandi*.—Hobbs, 1959:895.  
*Faxonius marchandi*.—Creaser, 1962:2 [by implication].  
*Orconectes (Crockerinus) marchandi* Fitzpatrick, 1987a:51.

TYPES.—Holotype, allotype, and "morphotype," USNM 82072, 82073, 82074 (male I, female, male II); paratypes, MCZ, USNM, TU.

TYPE LOCALITY.—Stream 3.2 miles (5.1 km) southeast of Hardy, Sharp County, Arkansas, on U.S. Highway 63.

RANGE.—Spring River drainage system in Lawrence and Sharp counties, Arkansas, and Oregon County, Missouri.

HABITAT.—Clear, rocky streams.

*Orconectes (Crockerinus) obscurus* (Hagen)

FIGURE 155

*Cambarus obscurus* Hagen, 1870:69, pl. 1: figs. 72-75, pl. 3: fig. 154.  
*Astacus obscurus*.—Hagen, 1870:5 [lapsus].  
*Cambarus propinquus* var. *obscura*.—Faxon, 1885a:92.  
*Cambarus propinquus obscurus*.—Hay, 1899b:960.  
*Cambarus (Faxonius) obscurus*.—Ortmann, 1905c:112; 1906b:369, pl. A: figs. 1, 2, pl. 39: fig. 7, pl. 40: fig. 1, pl. 42: figs. 2, 3.  
*Cambarus propinquus obscura*.—Fowler, 1912:564.  
*Faxonius obscurus*.—Creaser, 1933a:5; 1962:2 [by implication].  
*Faxonius (Faxonius) obscurus*.—Creaser, 1933a:5 [by implication].  
*Orconectes obscurus*.—Hobbs, 1942a:352 [by implication]; 1974b:36, fig. 117.—Crocker, 1957:36, 53, 75, pl. 3: figs. 5, 6, pl. 5: fig. 2.—Fitzpatrick, 1963:61 [by implication]; 1967a:160, figs. 3, 11-15, 25.  
*Orconectes (Orconectes) obscurus*.—Hobbs, 1942b:154 [by implication].  
*Cambarus obscura*.—Fitzpatrick, 1967a:161 [erroneous spelling].  
*Orconectes obscurus*.—Fielder, 1972:133 [erroneous spelling].  
*Orconectes (Crockerinus) obscurus*.—Fitzpatrick, 1987a:50.

TYPES.—Lectotype, MCZ 181 (male I); paralectotypes, MCZ 181 (9 male I, 6 female), MCZ 3353 (7 male I, female), MCZ 3354 (3 male II), USNM 4971 (male I), MHNP (male, female), Würzburg Mus.; "cotypes" previously reported to be in the Australian Museum are not there. The lectotype (male I) was selected by Fitzpatrick (1967a:162) from MCZ 181, and all other "types" were designated paralectotypes by him.

TYPE LOCALITY.—Genesee River, Rochester, Monroe County, New York.

RANGE.—Southeastern Ontario, New York, Pennsylvania, eastern Ohio, West Virginia, northern Virginia, and western Maryland.

HABITAT.—Rocky streams.

*Orconectes (Crockerinus) propinquus* (Girard)

FIGURE 156

*Cambarus propinquus* Girard, 1852:88.  
*Astacus propinquus*.—Hagen, 1870:61.  
*Cambarus propinquus propinquus*.—Faxon, 1885a:91 [by implication].

*Cambarus propinquus*.—Williamson, 1899:47 [erroneous spelling].  
*Cambarus propinquus typicus*.—Ortmann, 1905c:133.  
*Cambarus (Faxonius) propinquus*.—Ortmann, 1905c:112; 1906b:358, pl. 39: fig. 6a,b.  
*Faxonius propinquus*.—Williamson, 1907:754.—Creaser, 1933a:1.  
*Cambarus (Faxonius) propinquus*.—Turner, 1926:43 [erroneous spelling].  
*Faxonius (Faxonius) propinquus propinquus*.—Creaser, 1933a:3 [by implication].  
*Cambarus propinquus*.—Fleming, 1939:304 [erroneous spelling].  
*Cambarus propinquus*.—Fleming, 1939:305 [in part; erroneous spelling].  
*Cambarus propinquus*.—Fleming, 1939:305 [erroneous spelling].  
*Cambarus Propinquus*.—Goodnight, 1940:40.  
*Orconectes propinquus propinquus*.—Hobbs, 1942a:352 [by implication].—Crocker, 1957:35, 48, 75, frontispiece, pl. 3: figs. 1, 2, pl. 5: fig. 1.—Fitzpatrick, 1963:61 [by implication].  
*Orconectes (Orconectes) propinquus propinquus*.—Hobbs, 1942b:154 [by implication].  
*Orconectes propinquus*.—Hoff, 1943:281.—Fitzpatrick, 1967a:145, figs. 2–19.—Hobbs, 1974b:39, fig. 118.—Page, 1985a:569; 1985b:406, figs. 141–144.  
*Orconectes propinquus*.—Threinen, 1958:1 [erroneous spelling].  
*Faxonius propinquus propinquus*.—Creaser, 1962:2 [by implication].  
*Orconectes* sp. A.—Fitzpatrick, 1967a:150–151, 167–169, figs. 2–18, 27.  
*Orconectes iowaensis* Fitzpatrick, 1968a:507, figs. 1–10 [Holotype, allotype, and morphotype, USNM 117963, 117964, 117965 (male I, female, male II); paratypes, USNM, Coe College, MCZ. Type locality: Turkey River, 2.5 miles (4 km) south of Cresco, Howard County, Iowa].—Hobbs, 1974b:31, fig. 127.—Phillips, 1980:87, figs. 2c, 6c; 1982:27.  
*Orconectes propinquus*.—Hart and Hart, 1974:120 [erroneous spelling].  
*Orconectes propinquus*.—Nolfi, 1978:186 [erroneous spelling].  
*Orconectes propinquus*.—Buikema and Benfield, 1979:1711 [erroneous spelling].  
*Orconectes iowaensis*.—Phillips and Reiss, 1979:19 [erroneous spelling].  
*Orconectes kinderhookensis* Fitzpatrick and Pickett, 1980:375, figs. 1–11. [Holotype, allotype, and morphotype, USNM 148883, 148884, 148885; paratypes, USNM, Joseph F. Pickett, Sr. Type locality, Kinderhook Creek 0.4 mi (0.6 km) south of the Rensselaer County line on St. Rte. 66, Columbia County, New York].—D.G. Smith, 1981b:389.  
*Orconectes (Crockerinus) propinquus*.—Fitzpatrick, 1987a:51.

TYPES.—Probably destroyed in the Chicago fire in 1871 (Faxon, 1914:417).

TYPE LOCALITY.—Three localities were originally given by Girard. From these, Faxon (1914:417) designated Garrison Creek, Sackett's Harbor, Jefferson County, New York, as the type locality. Ortmann (1906b:363) cited Oswego, Oswego County, New York. Crocker (1957:35) and Fitzpatrick (1967a:146) accepted Ortmann's designation.

RANGE.—Ontario, Quebec, and New York westward to Iowa and southeastern Minnesota, and southward to Illinois, Ohio, Pennsylvania, and Massachusetts.

HABITAT.—Streams and rocky shores of lakes.

### *Orconectes (Crockerinus) rafinesquei* Rhoades

FIGURE 163

*Orconectes rafinesquei* Rhoades, 1944a:116, fig. 1a–f.—Fitzpatrick, 1963:61 [by implication].—Hobbs, 1974b:40, fig. 124.  
*Orconectes (Orconectes) rafinesquei*.—Hobbs, 1959:893.  
*Faxonius rafinesquei*.—Creaser, 1962:2 [by implication].  
*Orconectes (Crockerinus) rafinesquei*.—Fitzpatrick, 1987a:51.

TYPES.—Holotype, allotype, and morphotype, USNM 81304, 81306, 81305 (male I, female, male II); paratypes, ANSP, MCZ, OSM, BCPM.

TYPE LOCALITY.—Rough River, at Falls-of-Rough, Grayson-Breckenridge counties, Kentucky.

RANGE.—Green River basin of western Kentucky.

HABITAT.—Streams.

### *Orconectes (Crockerinus) sanbornii erismophorus* Hobbs and Fitzpatrick

FIGURE 160

*Orconectes propinquus erismophorus* Hobbs and Fitzpatrick, 1962:208, figs. 1–15.  
*Orconectes sanbornii erismophorus*.—Fitzpatrick, 1967a:131, figs. 2–18, 24 [erroneous spelling].  
*Orconectes sanbornii erismophorus*.—Fitzpatrick, 1967a:160, fig. 24.  
*Orconectes sanbornii erismophorus*.—Hobbs, 1974b:40, fig. 122.  
*Orconectes (Crockerinus) sanbornii erismophorus*.—Fitzpatrick, 1987a:50.

TYPES.—Holotype, allotype, and morphotype, USNM 107597, 107598, 107599 (male I, female, male II); paratypes, TU, USNM.

TYPE LOCALITY.—Crane Nest Creek at Pee Wee, Wirt County, West Virginia.

RANGE.—Little Kanawha River system, West Virginia.

HABITAT.—Streams.

### *Orconectes (Crockerinus) sanbornii sanbornii* (Faxon)

FIGURE 159

*Cambarus Sanbornii* Faxon, 1884:128.  
*Cambarus propinquus Sanbornii*.—Faxon, 1885a:91, pl. 5: fig. 3, pl. 9: figs. 10, 10', 10a, 10a'.  
*Cambarus propinquus* var. *sanbornii*.—Underwood, 1886:372.  
*Cambarus propinquus* var. *sanbornii*.—Osborn and Williamson, 1898:21.  
*Cambarus propinquus sanbornii*.—Faxon, 1898:660.  
*Cambarus propinquus sanbornii*.—Ortmann, 1905c:128.  
*Cambarus (Faxonius) propinquus sanbornii*.—Ortmann, 1906b:365.  
*Cambarus obscurus sanbornii*.—Ortmann, 1906b:437.  
*Faxonius sanbornii*.—Creaser, 1933a:3 [by implication].  
*Faxonius (Faxonius) sanbornii*.—Creaser, 1933b:21 [by implication].  
*Orconectes propinquus sanbornii*.—Hobbs, 1942a:352 [by implication].—Fitzpatrick, 1963:61 [by implication].  
*Orconectes (Orconectes) propinquus sanbornii*.—Hobbs, 1942b:154 [by implication].  
*Faxonius sanbornii sanbornii*.—Creaser, 1962:2 [by implication].  
*Orconectes sanbornii sanbornii*.—Fitzpatrick, 1967a:157, figs. 2–18, 23.  
*Orconectes sanbornii*.—Stevenson, 1967:208.  
*Orconectes sanbornii sanbornii*.—Hobbs, 1974b:40, fig. 121.  
*Orconectes sanbornii*.—Campos, 1982:18 [erroneous spelling].  
*Orconectes (Crockerinus) sanbornii sanbornii*.—Fitzpatrick, 1987a:50, fig. 3.

TYPES.—Lectotype, MCZ 3692 (male I); paralectotypes, MCZ 3587 (lost), MCZ 3692 (male II, female). (See Fitzpatrick, 1967a:157.)

TYPE LOCALITY.—Oberlin, Lorain County, Ohio. Restricted by Faxon, 1914:418.

RANGE.—Southern Ohio and adjacent West Virginia and Kentucky.

HABITAT.—Streams.

*Orconectes (Crockerinus) shoupi* Hobbs

FIGURE 167

*Cambarus propinquus*.—Fleming, 1939:305 [in part; erroneous spelling].  
*Cambarus propinquus sanborni*.—Fleming, 1939:305 [in part], pl. 14.  
*Orconectes shoupi* Hobbs, 1948a:14, figs. 1–5, 9, 15, 16, 19, 20; 1974b:41, fig. 129.—Fitzpatrick, 1963:61 [by implication].  
*Orconectes (Orconectes) shoupi*.—Hobbs, 1959:893.  
*Faxonius shoupi*.—Creaser, 1962:2 [by implication].  
*Cambarus shoupi*.—Bouchard, 1972b:18 [lapsus calami].  
*Orconectes (Crockerinus) shoupi*.—Fitzpatrick, 1987a:51.

TYPES.—Holotype, allotype, and morphotype, USNM 84072 (male I, female, male II); paratypes, MCZ, USNM.

TYPE LOCALITY.—Mill Creek, tributary of Cumberland River, east of Oglesby near Antioch Pike, 10 miles (16 km) south of Nashville, Davidson County, Tennessee.

RANGE.—Known only from the vicinity of Nashville, Tennessee.

HABITAT.—Streams.

*Orconectes (Crockerinus) stannardi* Page

FIGURE 161

*Orconectes stannardi* Page, 1985a:564, fig. 1.  
*Orconectes (Crockerinus) stannardi*.—Fitzpatrick, 1987a:50.

TYPES.—Holotype, allotype, and morphotype, INHS (male I, female, male II); paratypes, INHS, USNM.

TYPE LOCALITY.—Little Wabash River at secondary road 719, 3.75 miles (6 km) NNW of Louisville (Sec. 33SW, T. 5N, R. 6E), Clay County, Illinois.

RANGE.—Little Wabash River system in southeastern Illinois.

HABITAT.—Streams, principally riffle areas.

*Orconectes (Crockerinus) tricuspis* Rhoades

FIGURE 165

*Orconectes tricuspis* Rhoades, 1944a:117, fig. 2a–f.—Hobbs, 1948a:20; 1974b:41, fig. 126.—Fitzpatrick, 1963:61 [by implication].  
*Orconectes (Orconectes) tricuspis*.—Hobbs, 1959:894.  
*Faxonius tricuspis*.—Creaser, 1962:2 [by implication].  
*Orconectes (Crockerinus) tricuspis*.—Fitzpatrick, 1987a:51.

TYPES.—Holotype, allotype, and “morphotype” (latter designated as allotype by Rhoades), USNM 81307, 81309, 81308 (male I, female, male II); paratypes, ANSP, MCZ, OSM.

TYPE LOCALITY.—Pete Lights’ spring, 3 miles (4.8 km) east of Canton, Trigg County, Kentucky.

RANGE.—Lower Green, Tradewater, and Cumberland drainages in western Kentucky.

HABITAT.—Small streams.

*Orconectes (Crockerinus) virginianus* Hobbs

FIGURE 158

*Orconectes virginianus* Hobbs, 1951a:122, figs. 1–10; 1974b:42, fig. 120.—Fitzpatrick, 1963:61 [by implication]; 1967a:164, figs. 2–18, 26.  
*Orconectes (Orconectes) virginianus*.—Hobbs, 1959:893.  
*Faxonius virginianus*.—Creaser, 1962:2 [by implication].  
*Orconectes virginianus*.—Fitzpatrick, 1967a:133 [erroneous spelling].  
*Orconectes (Crockerinus) virginianus*.—Fitzpatrick, 1987a:50.

TYPES.—Holotype, allotype, and morphotype, USNM 91659, 91660, 91661 (male I, female, male II); paratypes, USNM.

TYPE LOCALITY.—Rowanty Creek, tributary of the Notoway River, 3.3 miles (5.3 km) south of Reams Station on U.S. Highway 301, Dinwiddie County, Virginia.

RANGE.—Chowan drainage system in North Carolina and Virginia.

HABITAT.—Streams.

Subgenus *Faxonius* Ortmann

*Astacus*.—Rafinesque, 1817:42 [in part].  
*Cambarus*.—Girard, 1852:87 [in part].  
 Subgenus *Astacus*.—Herklots, 1861:144 [in part].  
 Subgenus *Faxonius* Ortmann, 1905c:97 [in part]. [Type species, by original designation, *Astacus limosus* Rafinesque, 1817:42. Gender: masculine.].—Fitzpatrick, 1987a:51.  
*Faxonius*.—Creaser, 1933a:3 [in part].  
*Orconectes*.—Hobbs, 1942a:352 [in part].  
 Subgenus *Orconectes*.—Hobbs, 1942b:154 [in part].  
*Orconetes*.—Avault, 1973:242 [erroneous spelling].  
*Orconeoetes*.—Unestam, 1973:4 [erroneous spelling].  
*Orconelctes*.—Brodsky, 1981:122 [erroneous spelling].

*Orconectes (Faxonius) indianensis* (Hay)

FIGURE 142

*Cambarus indianensis* Hay, 1896:494, fig. 9.  
*Cambarus (Faxonius) indianensis*.—Ortmann, 1905c:112.  
*Faxonius indianensis*.—Creaser, 1933a:3 [by implication]; 1962:2 [by implication].  
*Faxonius (Faxonius) indianensis*.—Creaser, 1933b:21 [by implication].  
*Orconectes indianensis*.—Hobbs, 1942a:352 [by implication]; 1974b:31, fig. 105.—Fitzpatrick, 1963:61 [by implication].—Page, 1985b:394, figs. 124–126.  
*Orconectes (Orconectes) indianensis*.—Hobbs, 1942b:154 [by implication].  
*Orconectes (Faxonius) indianensis*.—Fitzpatrick, 1987a:53.

TYPES.—Syntypes, USNM 14624 (2 male I, 2 female), MCZ 3859 (2 male I, 2 female).

TYPE LOCALITY.—Patoka River, Patoka, Gibson County, Indiana.

RANGE.—Wabash Basin in southern Indiana and Sabine River and Honey Creek watersheds in southern Illinois. (See Page, 1985b:394.)

*Orconectes (Faxonius) limosus* (Rafinesque)

FIGURE 140

*Astacus limosus* Rafinesque, 1817:42.  
*Astacus affinis* Say, 1817:168. [Types, not extant. Type locality, Delaware



River.]

- Astacus (Cambarus) affinis*.—Erichson, 1846:96.  
*Cambarus Pealei* Girard, 1852:87. [Syntypes, USNM 2081 (2 male I, 2 female). Type locality, Potomac River at Washington, D.C.]  
*Cambarus affinis*.—Girard, 1852:87.  
*Astacus (Astacus) affinis*.—Herklots, 1861:144.  
*Cambarus (Faxonius) limosus*.—Ortmann, 1905c:107.—Fowler, 1912:353, pls. 104, 105.  
*Cambarus limosus*.—Ortmann, 1905c:107.  
*Cambarus pealei*.—Ortmann, 1906b:352.  
*Faxonius limosus*.—Creaser, 1933a:3 [by implication]; 1962:2 [by implication].  
*Faxonius (Faxonius) limosus*.—Creaser, 1933b:21 [by implication].  
*Orconectes limosus*.—Hobbs 1942a:352 [by implication]; 1948a:20, fig. 22; 1974b:33, fig. 103.—Fitzpatrick, 1963:61 [by implication].  
*Orconectes (Orconectes) limosus*.—Hobbs, 1942b:154 [by implication].  
*Faxonius affinis*.—Hobbs, 1942c:55.  
*Orconectes limosus*.—Lewis, 1955:146 [erroneous spelling].  
*Orconectes affinis*.—Holthuis, 1956:228.  
*Orconectes limosa*.—Moberly, 1963:80 [erroneous spelling].  
*Cambarus affinis*.—Băcescu, 1967:218 [erroneous spelling].  
*Orconetes limosus*.—Avault, 1973:242 [erroneous spelling].  
*Orconetes limosus*.—Unestam, 1973:4 [erroneous spelling].  
*Orconectes limosus*.—Wielgus, 1973:119 [erroneous spelling].  
*Orconectes limosus*.—Ingle and Thomas, 1974:525 [erroneous spelling].  
*Orconectes limosus*.—Reynolds, 1979:57 [erroneous spelling].  
*Orconelctes limosus*.—Brodsky, 1981:122 [erroneous spelling].  
*Orconectes Limosus*.—D.G. Smith, 1981a:169 [lapsus].  
*Orconectes (Faxonius) limosus*.—Fitzpatrick, 1987a:53, fig. 4.

TYPES.—Not known to exist.

TYPE LOCALITY.—Delaware River near Philadelphia, Pennsylvania.

RANGE.—The Atlantic watershed from Maine to the lower James River in Virginia. Introduced into western Europe.

HABITAT.—Streams.

### *Orconectes (Faxonius) wrighti* Hobbs

FIGURE 141

- Orconectes wrighti* Hobbs, 1948c:85, pl. 3: figs. 1–9; 1974b:43, fig. 104.—Fitzpatrick, 1963:61 [by implication].  
*Orconectes (Orconectes) wrighti*.—Hobbs, 1959:893.  
*Faxonius wrighti*.—Creaser, 1962:2 [by implication].  
*Orconectes (Faxonius) wrighti*.—Fitzpatrick, 1987a:53.

TYPES.—Holotype, USNM 85144 (male I); allotype and morphotype, USNM 85145 (female, male II); paratypes, USNM.

TYPE LOCALITY.—Robinson Creek on State Route 57, Hardin County, Tennessee.

RANGE.—Known only from Hardin County, Tennessee.

HABITAT.—Streams.

### Subgenus *Gremicambarus* Fitzpatrick

- Cambarus*.—Hagen, 1870:63 [in part].  
 Subgenus *Faxonius* Ortmann, 1905c:113 [in part].  
*Faxonius*.—Williamson, 1907:749 [in part; intended as subgeneric name].—  
 Creaser, 1933a:3 [in part].  
*Orconectes*.—Hobbs, 1942a:352 [in part].

- Subgenus *Orconectes*.—Hobbs, 1942b:154 [in part].  
*Orconectes*.—Threinen, 1958:1 [erroneous spelling].  
*Orconectis*.—Dudel, 1965:324 [erroneous spelling].  
*Cambarus*.—Băcescu, 1967:218 [erroneous spelling].  
*Orchonectes*.—Dimond et al., 1968:760 [erroneous spelling].  
*Orconectus*.—Ray and Stevens, 1970:58 [erroneous spelling].  
*Orconectes*.—Durliat and Vranckx, 1976:474 [erroneous spelling].  
*Orconelctes*.—Brodsky, 1981:122 [erroneous spelling].  
*Orconetes*.—Huner, 1981:47 [erroneous spelling].  
*Orconectes*.—Huner and Naqui, 1984:405 [erroneous spelling].  
 Subgenus *Gremicambarus* Fitzpatrick, 1987a:53. [Type species, by original designation, *Cambarus virilis* Hagen, 1870:63. Gender: masculine.]

### *Orconectes (Gremicambarus) alabamensis* (Faxon)

FIGURE 206

- Cambarus Alabamensis* Faxon 1884:125; 1885a:104, pl. 4: fig. 4, pl. 10: figs. 3, 3', 3a, 3a'.  
*Cambarus alabamensis*.—Hay, 1899b:960.  
*Cambarus (Faxonius) alabamensis*.—Ortmann, 1905c:112.  
*Faxonius alabamensis*.—Creaser, 1933a:3 [by implication]; 1962:2 [by implication].  
*Faxonius (Faxonius) alabamensis*.—Creaser, 1933b:16 [by implication].  
*Orconectes alabamensis*.—Hobbs, 1942a:352 [by implication]; 1974b:26, fig. 166.—Fitzpatrick, 1963:61 [by implication].—Cooper and Hobbs, 1980:2, figs. 1, 2a.  
*Orconectes (Orconectes) alabamensis*.—Hobbs, 1942b:154 [by implication].  
*Orconectes (Gremicambarus) alabamensis*.—Fitzpatrick, 1987a:54.

TYPES.—Syntypes, USNM 4876 (14 male I, 16 female, 4 male II), MCZ 3565 (2 male I, 2 female, 2 male II).

TYPE LOCALITY.—Second Creek, Waterloo, Lauderdale County, Alabama.

RANGE.—Tennessee River basin from Shoal Creek in Lawrence County, Tennessee, and Lauderdale County, Alabama, to Hardin County, Tennessee.

### *Orconectes (Gremicambarus) caseyi* Jester

FIGURE 200

- Orconectes caseyi* Jester, 1967:518, figs. 1–12.—Reimer, 1969:52, figs. 4, 10, 24, 37.—Hobbs, 1974b:17, fig. 163.  
*Orconectes acuseyi*.—Loring and Hill, 1976:219 [erroneous spelling].  
*Orconectes nais* form *caseyi*.—Unger, 1978:14.  
*Orconectes (Gremicambarus) caseyi*.—Fitzpatrick, 1978a:54.

TYPES.—Holotype, allotype, and morphotype, USNM 115698, 115699, 1156700 (male I, female, male II); paratypes, USNM, TU.

TYPE LOCALITY.—Conchas Reservoir, 32 miles (51.2 km) northwest of Tucumcari on State Route 104, San Miguel County, New Mexico.

RANGE.—“New Mexico, Texas, Arkansas, Oklahoma, Missouri, and Kansas” (Reimer, 1969:55). To this may be added southwestern Colorado.

HABITAT.—Streams and impoundments.

REMARKS.—As stated in my earlier checklist (Hobbs, 1974b) and elsewhere, this crayfish appears to me to be indistinguishable from *Orconectes (G.) virilis* (Hagen). Until the relationships of these two species and *O. (G.) nais* (Faxon)

become more adequately understood, the conservative recognition of the three seems advisable. Particularly does this seem prudent in light of Unger's (1978) having presented evidence that the three taxa are perhaps distinct and that *O. (G.) causeyi* is more similar to *O. (G.) nais* than to *O. (G.) virilis*. Unfortunately, his samples were quite limited both in quantity and in representing the range of the complex.

***Orconectes (Gremicambarus) chickasawae* Cooper and Hobbs**

FIGURE 209

*Orconectes chickasawae* Cooper and Hobbs, 1980:29, fig. 10.  
*Orconectes (Gremicambarus) chickasawae*.—Fitzpatrick, 1987a:54.

TYPES.—Holotype, allotype, and morphotype, USNM 144924, 144925, 144926; paratypes, USNM, NCSM.

TYPE LOCALITY.—Town Creek, 3.5 miles (5.6 km) southeast of Muldon, 3 miles (4.8 km) east of State Route 45W (CS:T. 16S, R. 7E, Sec. 7 and 18), Monroe County, Mississippi.

RANGE.—“Known from western tributaries of the Tombigbee River in Chickasaw, Clay, Lowndes, and Monroe counties, Mississippi” (Cooper and Hobbs, 1980:34).

HABITAT.—Lentic and sluggish lotic situations.

***Orconectes (Gremicambarus) compressus* (Faxon)**

FIGURE 210

*Cambarus compressus* Faxon, 1884:127; 1885a:105, pl. 5: fig. 6, pl. 10: figs. 2, 2', 2a, 2a'.

*Cambarus (Faxonius) compressus*.—Ortmann, 1905c:112.

*Faxonius compressus*.—Creaser, 1933a:3 [by implication]; 1962:2 [by implication].

*Faxonius (Faxonius) compressus*.—Creaser, 1933b:16 [by implication].

*Orconectes compressus*.—Hobbs, 1942a:352 [by implication]; 1949:17; 1974b:27, fig. 169.—Fitzpatrick, 1963:61 [by implication].

*Orconectes (Orconectes) compressus*.—Hobbs, 1942b:154 [by implication].

*Orconectes (Gremicambarus) compressus*.—Fitzpatrick, 1987a:54.

TYPES.—Syntypes, USNM 4878 (11 male I, 13 female), USNM 4879 (5 male I, 3 female, 1 male II), MCZ 3583 (3 male I, 2 female, 1 male II).

TYPE LOCALITY.—Second Creek, Waterloo, Lauderdale County, Alabama. Restricted by Faxon (1914:419).

RANGE.—Tennessee River basin, below Walden Ridge, in Alabama, Mississippi, and Tennessee; Cumberland River basin in Tennessee and Kentucky; and the Barren River watershed in Tennessee and Kentucky.

HABITAT.—Clear, rock- or gravel-bedded streams.

***Orconectes (Gremicambarus) cooperi* Cooper and Hobbs**

FIGURE 204

*Orconectes cooperi* Cooper and Hobbs, 1980:17, fig. 7.

*Orconectes (Gremicambarus) cooperi*.—Fitzpatrick, 1987a:54.

TYPES.—Holotype, allotype, and morphotype, USNM

147722, 147723, 147724; paratypes, USNM, NCSM.

TYPE LOCALITY.—Brier Fork of the Flint River at U.S. Highway 231-431, about 2 miles (3.2 km) north of Meridianville (Sec. 7, T. 2S, R. 1E), Madison County, Alabama.

RANGE.—Known only from the Flint River watershed in Madison County, Alabama, and Lincoln County, Tennessee.

HABITAT.—Streams.

***Orconectes (Gremicambarus) etnieri* Bouchard and Bouchard**

FIGURE 205

*Orconectes etnieri* Bouchard and Bouchard, 1976b:459, fig. 1.

*Orconectes (Gremicambarus) etnieri*.—Fitzpatrick, 1987a:54.

TYPES.—Holotype, allotype, and morphotype, USNM 146583, 146584, 146585 (male I, female, male II); paratypes, USNM, TU.

TYPE LOCALITY.—Robinson Creek at Tennessee State Highway 57, Hardin County, Tennessee.

RANGE.—Western tributaries of the Tennessee River from Robinson Creek northward to Snake Creek in Hardin County, and in the Forked Deer, Hatchie, and Loosahatchie drainage systems in Tennessee and Mississippi.

HABITAT.—Streams.

***Orconectes (Gremicambarus) holti* Cooper and Hobbs**

FIGURE 202

*Orconectes holti* Cooper and Hobbs, 1980:23, figs. 8, 9.

*Orconectes (Gremicambarus) holti*.—Fitzpatrick, 1987a:54.

TYPES.—Holotype, allotype, and morphotype, USNM 147149, 147150, 147151 (male I, female, male II); paratypes, USNM.

TYPE LOCALITY.—Bogue Chitto Creek, 2.3 miles (3.7 km) west of Marion on State Route 14 (Sec. 11, T. 19N, R. 7E), Perry County, Alabama.

RANGE.—Alabama River basin in Dallas, Lowndes, Montgomery, Perry, and Wilcox counties, Alabama.

HABITAT.—Streams.

***Orconectes (Gremicambarus) immunis* (Hagen)**

FIGURE 201

*Cambarus immunis* Hagen, 1870:71, pl. 1: figs. 101, 102, pl. 3: fig. 160; pl. 8: fig. b.

*Cambarus signifer* Herrick, 1882:253, fig. 7. [Types, MCZ 3515 (2 male I, 1 female). Type locality, Grass Lake, Richfield, Hennepin County, Minnesota.]

*Cambarus immunis spinostris* Faxon, 1884:146. [Types, USNM 4655 (6 male II, 8 female), MCZ 3562 (2 male II, 2 female). Type locality, Reelfoot Lake, Obion County, Tennessee.]

*Cambarus immunis immunis*.—Faxon, 1884:146 [by implication].

*Cambarus immunis* var. *spinostris*.—Harris, 1901:115 [erroneous spelling].

*Cambarus rinmunis*.—Steele, 1902:3 [erroneous spelling].

*Cambarus (Faxonius) immunis*.—Ortmann, 1905c:113.  
*Faxonius immunis*.—Williamson, 1907:749 [*Faxonius* intended as subgeneric name].—Creaser, 1933a:4; 1962:2.  
*Faxonius (Faxonius) immunis immunis*.—Creaser, 1933b:21 [by implication].  
*Faxonius (Faxonius) immunis pedianus* Creaser, 1933b:14 [Subgenus by implication. Holotype and allotype, USNM 98334, 98335 (male I, female); paratypes, USNM. Type locality, reservoir at Englewood, Denver, Colorado].  
*Cambarus immunis Hagenianus*.—Fleming, 1938:303 [(?) lapsus for *C. immunis* Hagen].  
*Orconectes immunis immunis*.—Hobbs, 1942a:352 [by implication].—Williams, 1954:890, figs. 200–208.—Fitzpatrick, 1963:61 [by implication].  
*Orconectes immunis pedianus*.—Hobbs, 1942a:352.  
*Orconectes (Orconectes) immunis immunis*.—Hobbs, 1942b:154 [by implication].  
*Orconectes immunis*.—Penn, 1950d:645.—Hobbs, 1974b:30, fig. 164.—Page, 1985b:388, figs. 120–123.—Pflieger, 1987a:20; 1987b:6.  
*Orconectes immunis*.—Threinen, 1958:2 [erroneous spelling].  
*Orconectes (Orconectes) immunis*.—Hobbs, 1959:894.  
*Orconectes immunis*.—Dimond et al., 1968:760 [erroneous spelling].  
*Orconectes immunis*.—Ono and Nakajima, 1979:1681 [erroneous spelling].  
*Orconectes immunis*.—Huner and Naqvi, 1984:405 [erroneous spelling].  
*Orconectes (Gremicambarus) immunis*.—Fitzpatrick, 1987a:54.

TYPES.—Syntypes, MCZ 188 (2 male I, 2 ovigerous female.) The “paratypes” of Faxon (1914), MCZ 3355 (1 male I), are dubious “types” because this number was not listed by Hagen (1870:73). Douglas G. Smith has examined MCZ lots 3355, listed as paratypes by Faxon (1914:421), and 1841, listed as such by Hagen 1870:73, and found the former to contain a first form male of *O. immunis* from Belleville, Illinois, the latter, a marine crustacean from Society Island. Probably Hagen erred in recording the specimen from Belleville as having been catalogued under number 1841. The “paratype” said to be in MHNP could not be located.

TYPE LOCALITY.—Lawn Ridge, Marshall County, Illinois.

RANGE.—Maine and Connecticut to eastern Colorado and Wyoming, and from Alabama to southern Manitoba, Ontario, and Quebec. Its presence in New England probably resulted from introductions (Douglas G. Smith, in litt.).

HABITAT.—Ponds, roadside ditches, and sluggish streams.

### *Orconectes (Gremicambarus) mississippiensis* (Faxon)

FIGURE 198

*Cambarus mississippiensis* Faxon, 1884:123; 1885a:101, pl. 3: fig. 2, pl. 10: figs. 4, 4', 4a, 4a'.  
*Cambarus mississippiensis*.—Hay, 1899b:960.  
*Cambarus (Faxonius) mississippiensis*.—Ortmann, 1905c:113.  
*Faxonius mississippiensis*.—Creaser, 1933a:3 [by implication]; 1962:2 [by implication].  
*Faxonius (Faxonius) mississippiensis*.—Creaser, 1933b:19 [by implication].  
*Orconectes mississippiensis*.—Hobbs, 1942a:352 [by implication]; 1974b:35, fig. 161.—Fitzpatrick, 1963:61 [by implication].—Cooper and Hobbs, 1980:35, figs. 11–13.  
*Orconectes (Orconectes) mississippiensis*.—Hobbs, 1942b:154 [by implication].  
*Orconectes (Gremicambarus) mississippiensis*.—Fitzpatrick, 1987a:54.

TYPES.—Syntypes, USNM 19760 (male I, female), USNM

19759 (male II, female), MCZ 3563 (female).

TYPE LOCALITY.—Eastern Mississippi. Restricted to Macon, Noxubee County, Mississippi, by Faxon (1914:422).

RANGE.—“Limited to the Prairie Section of the Noxubee River basin and in other tributary systems of the Tombigbee River northward to the Catalpa Creek basin in Kemper, Noxubee, Lowndes, and Oktibbeha counties, Mississippi” (Cooper and Hobbs, 1980:40).

### *Orconectes (Gremicambarus) nais* (Faxon)

FIGURE 203

*Cambarus Nais* Faxon, 1885b:140.  
*Cambarus nais*.—Underwood, 1886:371.  
*Cambarus nais*.—Faxon, 1890:631.  
*Cambarus pilosus* Hay, 1899a:121, fig. 1. [Types, USNM 19761 (6 male II), MCZ 7389 (male I). Type locality, Beloit, Mitchell County, Kansas.]  
*Cambarus pelosus*.—Harris, 1901:115 [erroneous spelling].  
*Cambarus (Faxonius) nais*.—Ortmann, 1905c:113.—Creaser and Ortenberger, 1933:37, figs. 10, 14, 24.  
*Cambarus (Faxonius) pilosus*.—Ortmann, 1905c:113.  
*Faxonius nais*.—Creaser, 1933a:3; 1962:2 [by implication].  
*Faxonius (Faxonius) nais*.—Creaser, 1933b:5.  
*Orconectes nais*.—Hobbs, 1942a:352 [by implication]; 1974b:35, fig. 165.—Williams, 1954:886, figs. 191–199.—Fitzpatrick, 1963:61 [by implication].  
*Orconectes (Orconectes) nais*.—Hobbs, 1942b:154 [by implication].  
*Orconectes nais*.—Ray and Stevens, 1970:58 [erroneous spelling].  
*Orconectes nais*.—Craelius, 1976:406 [erroneous spelling].  
*Orconectes (Gremicambarus) nais*.—Fitzpatrick, 1987a:54.

TYPES.—Syntypes, MCZ 3755 (2 male I, male II, female), USNM 129213 (3 male I, 3 male II); Mus. Washburn Coll. (no longer there).

TYPE LOCALITY.—Labette County, Kansas.

RANGE.—Great Plains: Oklahoma and Texas; the limits not known. (See Bouchard and Robison, 1981:28.)

HABITAT.—Streams.

REMARKS.—The syntypes in the National Museum of Natural History are specimens collected by W.S. Newlon from the type locality and were received from the Kansas Museum of Natural History; presumably they represent a part of the lot that was said by Faxon (1914:420) to have been at Washburn College. See “Remarks” under *Orconectes (G.) causeyi*.

### *Orconectes (Gremicambarus) rhoadesi* Hobbs

FIGURE 207

*Cambarus validus Faxonianus*.—Fleming, 1938:303 [error for “*C. validus* Faxon”].  
*Orconectes rhoadesi* Hobbs, 1949:19, pl. 3: figs. 1–10; 1974b:40, fig. 167.—Fitzpatrick, 1963:61 [by implication].  
*Orconectes (Orconectes) rhoadesi*.—Hobbs, 1959:895.  
*Faxonius rhoadesi*.—Creaser, 1962:2 [by implication].  
*Orconectes (Gremicambarus) rhoadesi*.—Fitzpatrick, 1987a:54.

TYPES.—Holotype, morphotype, USNM 87953 (male I, male II), and allotype, USNM 87954 (female); paratypes, USNM.



TYPE LOCALITY.—Otter Creek, between Granny White Pike and Hillsboro Pike, about 7 miles (11.2 km) south of Nashville, Davidson County, Tennessee.

RANGE.—Cumberland, Duck, and Tennessee basins in central Tennessee.

HABITAT.—Streams.

### *Orconectes (Gremicambarus) validus* (Faxon)

#### FIGURE 208

- Cambarus validus* Faxon, 1914:382, pl. 7: figs. 3, 4, 8, pl. 13: fig. 1.  
*Faxonius validus*.—Creaser, 1933a:3 [by implication]; 1962:2 [by implication].  
*Faxonius (Faxonius) validus*.—Creaser, 1933b:21 [by implication].  
*Orconectes validus*.—Hobbs, 1942a:352 [by implication]; 1974b:42, fig. 168.—Fitzpatrick, 1963:61 [by implication].—Cooper and Hobbs, 1980:8, figs. 2b, 3-6.  
*Orconectes (Orconectes) validus*.—Hobbs, 1942b:154 [by implication].  
*Cambarus (Faxonius) validus*.—Bouchard, 1972b:103.  
*Orconectes (Gremicambarus) validus*.—Fitzpatrick, 1987a:54.

TYPE.—Holotype, MCZ 301 (male I).

TYPE LOCALITY.—Huntsville, Madison County, Alabama.

RANGE.—Tennessee and Black Warrior river systems in northern Alabama and southern Tennessee.

HABITAT.—Streams.

### *Orconectes (Gremicambarus) virilis* Hagen

#### FIGURE 199

- Cambarus virilis* Hagen, 1870:63, pl. 1: figs. 23-28, pl. 2: figs. 128-132, pl. 3: fig. 155, pl. 8.  
*Cambarus wisconsinensis* Bundy, 1876:4. [Type, MCZ 3448 (male II). Type locality, Racine, Racine County, Wisconsin.]  
*Cambarus debilis* Bundy, 1876:24. [Type, MCZ 3449 (male II). Type locality, Barraboo River, Ironton, Sauk County, Wisconsin.]  
*Cambarus couesi* Streets, 1877:803. [Syntypes, USNM 3154 (7 male I, 3 juvenile male, 5 juvenile female), MCZ 3545 (male I, female, male II). Type locality, Red River of the North, near Pembina, Pembina County, North Dakota.]  
*Cambarus viriles*.—Bundy, 1882:180 [erroneous spelling].  
*Cambarus couesi*.—Bundy, 1883:402 [erroneous spelling].  
*Cambarus Couesi*.—Faxon, 1885a:97.  
*Cambarus wisconsinensis*.—Harris, 1900:271 [erroneous spelling].  
*Cambarus couesi*.—Harris, 1903:134 [erroneous spelling].  
*Cambarus viridis*.—Moenkhaus, 1904:111 [erroneous spelling].  
*Cambarus (Faxonius) virilis*.—Ortmann, 1905c:113.—Creaser, 1932:326, figs. 1, 2, 8.  
*cambarus virilis*.—Harmon, 1910: fig. 1 [lapsus].  
*Cambarus virile*.—Léger, 1924:1206 [erroneous spelling].  
*Faxonius virilis*.—Creaser, 1933a:3; 1962:2 [by implication].  
*Faxonius (Faxonius) virilis*.—Creaser, 1933b:21 [by implication].  
*Orconectes virilis*.—Hobbs, 1942a:352 [by implication]; 1972b:91, figs. 72h, 73e; 1974b:42, fig. 162.—Fitzpatrick, 1963:61 [by implication].—Page, 1985b:417, figs. 151-154.—Pflieger, 1987a:22; 1987b:6.  
*Orconectes (Orconectes) virilis*.—Hobbs, 1942b:154 [by implication].  
*Orconectes virilis*.—Threinen, 1958:1 [erroneous spelling].  
*Cambarus virilis*.—Hama, 1961:329 [erroneous spelling].  
*Orconectes virilis*.—Dudel, 1965:324 [erroneous spelling].  
*Cambarus viridis*.—Băcescu, 1967:218 [erroneous spelling].  
*Orconectes (Cambarus) virilis*.—Mason, 1970b:975.

- Orconectes virilis*.—Durlat and Vranckx, 1976:474 [erroneous spelling].  
*Orconectes virilis*.—Brodsky, 1981:122 [erroneous spelling].  
*Orconectes virilis*.—Huner, 1981:47 [erroneous spelling].  
*Orconectes (Gremicambarus) virilis*.—Fitzpatrick, 1987a:54, fig. 5.

TYPES.—Syntypes, MCZ 194 (male I, male II, 4 female, 2 ovigerous female), MCZ 196 (7 male I, 3 male II, 3 female, juv. male, juv. female), MCZ 203 (male II, 3 female), MCZ 1151 (male I), MCZ 3342 (male I, 5 male II, female, 2 juv. male, juv. female), MCZ 3343 (4 male I, female), MCZ 3344 (male II, 2 female, juv. male, 3 juv. female), MHNP, Würzburg Mus., AMS.

TYPE LOCALITY.—“Lake Superior,” restricted by Faxon, (1914:420).

RANGE.—From Saskatchewan to Ontario, Canada, and from Montana and Utah to Arkansas, New York, and Maine. Introduced into California (Riegel, 1959:29, 37); Maryland (Meredith and Schwartz, 1960:28); parts of New England (Crocker, 1979:247; D.G. Smith, 1979:388); Alabama, Tennessee, Mississippi, and West Virginia (Bouchard, 1976a:583); Utah (Johnson, 1986:630); New York (Crocker, 1979:247); Chihuahua, Mexico (Campos and Contreras, 1985:218); and Pennsylvania (specimen in National Museum of Natural History from Adams County). See “Remarks” under *O. (G.) causeyi*.

HABITAT.—Lentic and lotic situations.

### Subgenus *Hespericambarus* Fitzpatrick

- Cambarus*.—Faxon, 1898:656 [in part].  
 Subgenus *Faxonius* Ortmann, 1905c:113 [in part].  
*Faxonius*.—Creaser, 1933a:3 [in part].  
*Orconectes*.—Hobbs, 1942a:352 [by implication, in part].  
 Subgenus *Orconectes*.—Hobbs, 1942b:154 [in part].  
 Subgenus *Hespericambarus* Fitzpatrick, 1987a:54. [Type species by original designation, *Cambarus difficilis* Faxon, 1898:656. Gender: masculine.]

### *Orconectes (Hespericambarus) blacki* Walls

#### FIGURE 144

- Orconectes difficilis blacki* Walls, 1972:454, figs. 3a-e, 4a.—Hobbs, 1974b:28, fig. 107.  
*Orconectes (Hespericambarus) blacki*.—Fitzpatrick, 1987a:55.

TYPES.—Holotype, USNM 131255 (male I); paratypes, USNM, MCZ, TU, Joe B. Black, and Jerry G. Walls.

TYPE LOCALITY.—Bearhead Creek, 4 miles (6.4 km) southwest of Juanita on State Route 109, Beauregard Parish, Louisiana.

RANGE.—Known from only six localities in Beauregard and Calcasieu parishes, Louisiana, and, according to Walls, 1972:455, intergrading with *O. d. hathawayi* “in Calcasieu River drainage of Allen, Beauregard, Calcasieu, and Vernon Parishes, Louisiana.” In his recent revision of the genus *Orconectes*, however, Fitzpatrick (1987a), as noted above, recognized no geographic races of *Orconectes (H.) difficilis*, according Walls’ subspecies specific rank.

HABITAT.—Streams.

***Orconectes (Hespericambarus) deanae* Reimer and Jester, new combination**

FIGURE 148

*Orconectes deanae* Reimer and Jester, 1975:17, fig. 1-7.—Bouchard, 1978c:415.

*Orconectes deanae*.—Bouchard, 1978b:451 [erroneous spelling].

*Orconectes (Buannulifictus) deanae*.—Fitzpatrick, 1987a:49 [erroneous spelling].

TYPES.—Holotype and allotype, USNM 133759, 133760; paratypes, USNM, Rollin D. Reimer.

TYPE LOCALITY.—Conchas Lake, located at junction of Conchas and South Canadian rivers in San Miguel County, on State Road 104, approximately 32 miles (51.2 km) northwest of Tucumcari, New Mexico.

RANGE.—Known only from Canadian River basin in San Miguel and Quay counties, New Mexico.

HABITAT.—Lentic and lotic habitats.

***Orconectes (Hespericambarus) difficilis* (Faxon)**

FIGURE 143

*Cambarus difficilis* Faxon, 1898:656, pl. 65: figs. 1-4.

*Cambarus (Faxonius) difficilis*.—Ortmann, 1905c:113.

*Faxonius difficilis*.—Creaser, 1933a:3 [by implication]; 1962:2 [by implication].

*Faxonius (Faxonius) difficilis*.—Creaser, 1933b:16 [by implication].

*Cambarus (Faxonius) difficilis*.—Fleming, 1938:300 [erroneous spelling].

*Orconectes difficilis*.—Hobbs, 1942a:352 [by implication].—Williams, 1954:898, figs. 217-224, 233.—Fitzpatrick, 1963:61 [by implication].

*Orconectes (Orconectes) difficilis*.—Hobbs, 1942b:154 [by implication]; 1959:892.

*Orconectes difficilis difficilis*.—Walls, 1972:456.—Hobbs, 1974b:28, fig. 106. *Orconectes (Hespericambarus) difficilis*.—Fitzpatrick, 1987a:55, fig. 6.

TYPES.—Syntypes, USNM 19687 (9 male I, 10 female, 5 male II), USNM 19688 (male I), MCZ 4359 (male I, female, male II), Mus. Zool. Torino.

TYPE LOCALITY.—McAlester, Pittsburg County, Oklahoma.

RANGE.—Pittsburg and Latimer counties, Oklahoma, Upshur County, Texas, to Washington County, Arkansas, south-eastward into Louisiana (see Walls, 1972).

HABITAT.—Rocky streams.

REMARKS.—See "Range" under *O. (H.) blacki*.

***Orconectes (Hespericambarus) hathawayi* Penn**

FIGURE 146

*Orconectes (Orconectes) hathawayi* Penn, 1952b:1, figs. 1-14.

*Orconectes hathawayi*.—Penn, 1953d:7.—Fitzpatrick, 1963:61 [by implication].

*Faxonius hathawayi*.—Creaser, 1962:2 [by implication].

*Orconectes difficilis hathawayi*.—Walls, 1972:453.—Hobbs, 1974b:28, fig. 109.

*Orconectes (Hespericambarus) hathawayi*.—Fitzpatrick, 1987a:55.

TYPES.—Holotype, allotype, and morphotype, USNM 92998, 92999, 93000 (male I, female, male II); paratypes,

MCZ, CM, ANSP, USNM, AMNH, TU.

TYPE LOCALITY.—Spring Creek, 5.1 miles (8.2 km) east of Hinston on State Route 85, Rapides Parish, Louisiana.

RANGE.—Jackson and Rapides parishes south to Vermilion Parish, Louisiana.

HABITAT.—Streams.

REMARKS.—See "Range" under *O. (H.) blacki*.

***Orconectes (Hespericambarus) maletae* Walls**

FIGURE 145

*Orconectes difficilis maletae* Walls, 1972:456, figs. 2a-c, 4b.—Hobbs, 1974b:28, fig. 108.

*Orconectes (Hespericambarus) maletae*.—Fitzpatrick, 1987a:55.

TYPES.—Holotype, USNM 131254 (male I); paratypes, USNM, MCZ, TU, Joe B. Black, and Jerry G. Walls.

TYPE LOCALITY.—Bayou Santabarb "(third branch north of Kisatchie)" on State Route 117, Natchitoches Parish, Louisiana.

RANGE.—Known from only seven localities in Natchitoches and Sabine parishes, Louisiana, and Upshur County, Texas. Specimens from Coal County, Oklahoma, were interpreted by Walls (1972) as intergrades between this crayfish and *O. (H.) difficilis*.

HABITAT.—Streams.

REMARKS.—See "Range" under *O. (H.) blacki*.

***Orconectes (Hespericambarus) perfectus* Walls**

FIGURE 147

*Orconectes perfectus* Walls, 1972:451, figs. 1a-e, 4c.—Hobbs, 1974b:38, fig. 110.

*Orconectes (Hespericambarus) perfectus*.—Fitzpatrick, 1987a:55.

TYPES.—Holotype, USNM 131256 (male I); paratypes, USNM.

TYPE LOCALITY.—Satilpa Creek, 8.7 miles (13.9) km northwest (not "east") of Grove Hill on Chilton Road, Clarke County, Alabama.

RANGE.—Widespread in the Tombigbee and lower Alabama river basins in Alabama and Mississippi.

HABITAT.—Streams.

**Subgenus *Orconectes* Cope**

*Astacus*.—Tellkamp, 1844a:684 [in part].

*astacus*.—Tellkamp, 1845:93 [lapsus].

Subgenus *Cambarus* Erichson, 1846:95 [in part].

*Cambarus*.—Girard, 1852:87 [in part].

*Orconectes* Cope, 1872:419 [in part]. [Type species, by subsequent designation (Fowler, 1912:339), *Orconectes inermis* Cope, 1872:419. Gender: masculine.]

Subgenus *Orconectes*.—Hovey, 1882:222 [in part].—Fitzpatrick, 1987a:55.

*Cambarus*.—Packard, 1888:156 [erroneous spelling].

*Oreonecetes*.—Lönnerberg, 1894:126 [erroneous spelling].

*Cambrus*.—Price, 1900:155 [erroneous spelling].

*Orconectes*.—Harris, 1903:113 [erroneous spelling].  
*Cityphobius*.—Joleaud, 1939:14 [lapsus for *C. typhlobius*].  
 Subgenus *Faxonius*.—Rhoades, 1941b:142 [in part].  
*G[ambarus]*.—Croizat, 1958:908 [erroneous spelling].  
*Orconectes*.—Hobbs III and Welch, 1972:66 [erroneous spelling].  
*Orconectes*.—Hobbs III and Wells, 1972:125 [erroneous spelling].

***Orconectes (Orconectes) australis australis* (Rhoades)**

FIGURE 134

*Cambarus (Faxonius) pellucidus australis* Rhoades, 1941b:142, fig. 35a-f.  
*Orconectes pellucidus australis*.—Hobbs, 1942a:353; 1948a:20, fig. 6, 13.—Fitzpatrick, 1963:61 [by implication].  
*Orconectes (Orconectes) pellucidus australis*.—Hobbs, 1942b:154 [by implication].  
*Cambarus pellucidus australis*.—Jeannel and Henrot, 1949:84.  
*Orconectes australis australis*.—Barr, 1967:161.—Hobbs and Barr, 1972:3, 11, figs. 2, 3, 5o-v, 6, 7, 8i-cc.—Hobbs, 1974b:26, fig. 97.  
*Orconectes Pellucidus*.—Cooper and Poulson, 1968:130, fig. 8.  
*Orconectes australis*.—Barr and Holsinger, 1971:115 [in part].  
*Orconectes (Orconectes) australis australis*.—Fitzpatrick, 1987a:57.

TYPES.—Holotype, allotype, and "morphotype," USNM 79363, 79364, 79365 (male I, female, male II); paratypes, ANSP, OSM, Alabama Mus. Nat. Hist., Leslie Hubricht.

TYPE LOCALITY.—Shelta Cavern (SE 1/4, NE 1/4, Sec. 27, T. 3S, R. 1W), north of Huntsville, Madison County, Alabama.

RANGE.—"Jackson and Madison counties, Alabar 1, northward on the western edge of the Cumberland Plateau to Fentress County, Tennessee, and Wayne County, Kentucky, where it intergrades with *Orconectes australis packardii*" (Hobbs, Hobbs, and Daniel, 1977:95).

HABITAT.—Subterranean streams and pools.

***Orconectes (Orconectes) australis packardii* Rhoades**

FIGURE 135

*Orconectes pellucidus packardii* Rhoades, 1944a:121, fig. 3a-f.—Hobbs, 1948a:20, figs. 8, 11.—Fitzpatrick, 1963:61 [by implication].  
*Orconectes (Orconectes) pellucidus*.—Hobbs, 1959:890 [in part].  
*Orconectes pellucidus packardii*.—Nicholas, 1960:133.  
*Orconectes australis packardii*.—Barr, 1967:161.—Hobbs and Barr, 1972:4, 22, figs. 2, 4, 5a-n, 8a-h.—Hobbs, 1974b:27, fig. 98.  
*Orconectes (Orconectes) australis packardii*.—Fitzpatrick, 1987a:57.

TYPES.—Holotype, allotype, and "morphotype," USNM 81310, 81312, 81311 (male I, female, male II); paratypes, MCZ, USNM, OSM.

TYPE LOCALITY.—Cumberland Crystal Cave (Sloans Valley Cave), Alpine, Pulaski County, Kentucky.

RANGE.—Subterranean waters of the Cumberland River basin in southeastern Kentucky, intergrading with the nominate subspecies in Wayne County, Kentucky, and Fentress County, Tennessee.

HABITAT.—Subterranean streams and pools.

***Orconectes (Orconectes) incomptus* Hobbs and Barr**

FIGURE 136

*Orconectes incomptus* Hobbs and Barr, 1972:32, fig. 9.—Hobbs, 1974b:31, fig.

99.—Hobbs, Hobbs, and Daniel, 1977:98, fig. 47.  
*Orconectes (Orconectes) incomptus*.—Fitzpatrick, 1987a:57.

TYPES.—Holotype, allotype, and morphotype, USNM 130299, 130300, 130301 (male I, female, male II); paratypes, USNM, H.H. Hobbs III.

TYPE LOCALITY.—Cherry Cave, 36°28' 09"N, 85°36'28"W, Jackson County, Tennessee.

RANGE.—Known from only three localities, all in Jackson County, Tennessee.

HABITAT.—Subterranean waters.

***Orconectes (Orconectes) inermis inermis* Cope**

FIGURE 137

*Orconectes inermis* Cope, 1872:419.—Hobbs, 1948a:20, figs. 10, 14.  
*Cambarus pellucidus inermis*.—Faxon, 1885a:83.—Packard, 1888:41.  
*Cambarus pellucidus* variety *inermis*.—Hay, 1893:284.  
*Oreconectes inermis*.—Lönnerberg, 1894:126 [erroneous spelling].  
*Cambarus inermis*.—Faxon, 1898:647.  
*Orconectes inermis*.—Harris, 1903:113 [erroneous spelling].  
*Orconectes (Orconectes) inermis*.—Hobbs, 1942b:154 [by implication].  
*Orconectes pellucidus inermis*.—Rhoades, 1959:401 [in part].  
*Orconectes pellucidus*.—Anonymous, 1965:7360.  
*Orconectes inermis inermis*.—Barr, 1967:161.—Hobbs and Barr, 1972:4, 36, figs. 1, 10, 12c-z, 13.—Hobbs, 1974b:31, fig. 100.  
*Oreconectes inermis inermis*.—Hobbs III and Welch, 1972:66 [erroneous spelling].  
*Orconectes inermis inermis*.—Hobbs III and Wells, 1972:125 [erroneous spelling].  
*Orconectes i. inermis*.—Hobbs III and Wells, 1972:125 [erroneous spelling].  
*Oreconectes inermis inermis*.—Hobbs III, 1975:278 [erroneous spelling].  
*Orconectes (Orconectes) inermis inermis*.—Fitzpatrick, 1987a:57, fig. 7, 8.

TYPES.—Not extant. Topotypes, USNM 131405 (male I, female, male II).

TYPE LOCALITY.—Wyandotte Cave, Indiana. Actually Sibert's Well Cave, just below Wyandotte Cave, Crawford County, Indiana, according to Hobbs (1942a:335).

RANGE.—From Hart County, Kentucky, northwestward to Crawford and Harrison counties, Indiana, where it intergrades with *O. (O.) inermis testii*.

HABITAT.—Subterranean waters.

***Orconectes (Orconectes) inermis testii* (Hay)**

FIGURE 138

*Cambarus pellucidus* var. *testii* Hay, 1891:148.  
*Cambarus pellucidus testii*.—Hay, 1893:285.  
*Cambarus pellucidus testii*.—Hay, 1902a:233.  
*Cambarus (Faxonius) pellucidus testii*.—Ortmann, 1931:64 [by implication].  
*Orconectes pellucidus testii*.—Hobbs, 1942a:352 [by implication].  
*Orconectes (Orconectes) pellucidus testii*.—Hobbs, 1942b:154 [by implication].  
*Orconectes pellucidus inermis*.—Rhoades, 1959:401 [in part].  
*Orconectes inermis testii*.—Hobbs and Barr, 1972:2, 49, figs. 1, 11, 12a,b.—Hobbs, 1972b:79, 148, fig. 60f, 61c; 1974b:31, fig. 101.  
*Orconectes (Orconectes) inermis testii*.—Fitzpatrick, 1987a:57.

TYPES.—Syntypes, USNM 17702 (2 male II, female), MCZ 7431 (male II, female).



TYPE LOCALITY.—Mayfield's Cave, SW 1/4, NE 1/4, SW 1/4, Sec. 26, T. 9N, R. 2W, Monroe County, Indiana.

RANGE.—Monroe County, Indiana, intergrading immediately to the south with the typical subspecies.

HABITAT.—Subterranean waters.

*Orconectes (Orconectes) pellucidus* (Tellkamp)

FIGURE 139

- Astacus pellucidus* Tellkamp, 1844a:684; 1844b:383; 1845:85.  
*astacus pellucidus*.—Tellkamp, 1845:93.  
*Astacus (Cambarus) pellucidus*.—Erichson, 1846:95.  
*Cambarus pellucidus*.—Girard, 1852:87.—Hagen, 1870:55, pl. 1: figs. 68–71, pl. 3: fig. 148, pl. 6.  
*Cambarus pellucidus*.—Hagen, 1870:106 [erroneous spelling].  
*Orconectes pellucidus*.—Cope, 1872:409.—Hobbs and Barr, 1972:58, figs. 1, 14–16.—Hobbs, 1974b:37, fig. 102.—Hobbs, Hobbs, and Daniel, 1977:108, fig. 50.  
*Cambarus typhlobius* Joseph, 1880:202 [see Holthuis, 1964].  
*Cambarus coecus* Joseph, 1881:237 [nomen nudum; see Holthuis, 1964].  
*Cambarus stygius* Joseph, 1881:241 [nomen nudum]; 1882:12 [validation of nomen nudum of 1881, becoming homonym of *Cambarus stygius* Bundy (= *Procambarus acutus acutus* (Girard))]; see Holthuis, 1964].  
*Cambarus (Orconectes) pellucidus*.—Hovey, 1882:222 [in part].  
*Cambarus Stygius*.—Faxon, 1884:139.  
*Cambarus pellucidus pellucidus*.—Packard, 1888:41 [by implication].  
*Cambarus (Orconectes) pellucidus*, form *inermis*.—Packard, 1888:156 [erroneous spelling].  
*Astacus Cambarus Stigijs*.—Rabé, 1890:9 [erroneous spelling].  
*Astacus Cambarus pellucidus*.—Rabé, 1890:9.  
*Cambrus pellucidus*.—Price, 1900:155 [erroneous spelling].  
*Cambarus pelucidus*.—Eigenmann, 1900:228 [erroneous spelling].  
*Cambarus (Faxonius) pellucidus*.—Ortmann, 1905c:97.  
*Cityphlobius*.—Joleaud, 1939:14 [lapsus for *C. typhlobius*].  
*Cambarus caecus*.—Bouvier, 1940:68 [erroneous spelling].  
*Cambarus pellucidus pellucidus*.—Rhoades, 1941b:144.  
*Cambarus (Faxonius) pellucidus*.—Rioja, 1941:194 [erroneous spelling].  
*Cambarus pellucidus*.—Dearolf, 1942:50 [erroneous spelling].  
*Cambarus Pellucidus*.—Jackson, 1942:4.  
*Orconectes pellucidus pellucidus* Hobbs, 1942a:352 [by implication].—Fitzpatrick, 1963:61 [by implication].  
*Orconectes (Orconectes) pellucidus pellucidus*.—Hobbs, 1942b:154 [by implication].  
*Cambarus (Cambarus) pellucidus*.—Bals, 1944:402.  
*Orconectes pellucidus pellucidus*.—Hobbs, 1948a:16 [erroneous spelling].  
*Orconectes pellucidus pellucidus pellucidus*.—Hobbs, 1948a:19 [lapsus calami].  
*Cambarus Coecus*.—Bott, 1950:25.  
*Gambarus typhlobius*.—Croizat, 1958:908 [erroneous spelling].  
*Orconectes (Orconectes) pellucidus*.—Hobbs, 1959:890.—Fitzpatrick, 1987a:57.  
*Orconectes pallucidus*.—Elliott, 1986:5 [erroneous spelling].

TYPES.—Holotype, ZBM 1562 (male I).

TYPE LOCALITY.—Mammoth Cave, Edmonson County, Kentucky.

RANGE.—Area extending “southwestward from Hart County to Trigg County, Kentucky, and Montgomery County, Tennessee” (Hobbs and Barr, 1972:69).

Subgenus *Procericambarus* Fitzpatrick

*Cambarus*.—Hagen, 1870:65 [in part].

Subgenus *Faxonius* Ortmann, 1931:76 [in part].

*Faxonius*.—Creaser, 1933a:3 [in part].

*Orconectes*.—Hobbs, 1942a:352 [in part].

Subgenus *Orconectes*.—Hobbs, 1942b:154 [in part].

Subgenus *Procericambarus* Fitzpatrick, 1987a:57 [Type species, by original designation, *Cambarus forceps* Faxon, 1884:133. Gender: masculine.]

*Orconectes (Procericambarus) acares* Fitzpatrick

FIGURE 170

- Orconectes leptogonopodus acares* Fitzpatrick, 1965:87, figs. A–J.  
*Orconectes acares*.—Hobbs, 1972b:94, fig. 74f; 1974b:26, fig. 132.  
*Orconectes (Procericambarus) acares*.—Fitzpatrick, 1987a:58.

TYPES.—Holotype, allotype, and morphotype, USNM 115517, 115518, 115519 (male I, female, male II); paratypes, USNM, MCZ, TU.

TYPE LOCALITY.—Stream tributary to Ouachita River, 6 miles (9.6 km) northwest of Mount Ida, Montgomery County, Arkansas.

RANGE.—Tributaries of the Ouachita River in Garland, Hot Spring, Montgomery, Perry, Pike, Polk, and Saline counties, Arkansas.

HABITAT.—Streams.

*Orconectes (Procericambarus) barrenensis* Rhoades

FIGURE 178

- Orconectes rusticus barrenensis* Rhoades, 1944a:125, fig. 6a–f.—Fitzpatrick, 1963:61 [by implication].  
*Orconectes (Orconectes) rusticus*.—Hobbs, 1959:893 [in part].  
*Faxonius rusticus barrenensis*.—Creaser, 1962:2 [by implication].  
*Orconectes rusticus barrenensis*.—Fitzpatrick, 1967a:143 [erroneous spelling].  
*Orconectes barrenensis*.—Hobbs, 1972b:97, figs. 74h, 76b; 1974b:27, fig. 139.  
*Orconectes (Procericambarus) barrenensis*.—Fitzpatrick, 1987a:58.

TYPES.—Holotype, allotype, and “morphotype” (designated as allotype by Rhoades), USNM 81319, 81321, 81320 (male I, female, male II); paratypes, CM, MCZ, USNM, OSM.

TYPE LOCALITY.—Barren River, Beech Bend, 2 miles (3.2 km) north of Bowling Green, Warren County, Kentucky.

RANGE.—Barren River drainage in Kentucky and Tennessee, and Green River system in Kentucky.

HABITAT.—Swift streams.

*Orconectes (Procericambarus) forceps* (Faxon)

FIGURE 176

- Cambarus forceps* Faxon, 1884:133; 1885a:119, pl. 5: fig. 4, pl. 9: figs. 5, 5', 5a, 5a'.  
*Cambarus (Faxonius) forceps*.—Ortmann, 1905c:112.  
*Cambarus rusticus forceps*.—Ortmann, 1931:66.  
*Cambarus (Faxonius) rusticus forceps*.—Ortmann, 1931:72.  
*Faxonius forceps*.—Creaser, 1933a:3 [by implication]; 1962:2 [by implication].  
*Faxonius (Faxonius) forceps*.—Creaser, 1933b:10 [by implication].  
*Orconectes rusticus forceps*.—Hobbs, 1942a:352 [by implication].—Fitzpatrick, 1963:61 [by implication].  
*Orconectes (Orconectes) rusticus forceps*.—Hobbs, 1942b:154 [by implication].

*Orconectes forceps*.—Fitzpatrick, 1967a:143.—Hobbs, 1972b:98, figs. 77i, 80d; 1974b:29, fig. 137; 1981:289, figs. 19c, 107b, 108c, 112, 113, 232.  
*Orconectes (Procericambarus) forceps*.—Fitzpatrick, 1987a:58, fig. 9.

TYPES.—Syntypes, USNM 4880 (3 male I, 4 female), MCZ 3582 (male I, female).

TYPE LOCALITY.—Cypress Creek, Lauderdale County, Alabama.

RANGE.—Tennessee River drainage, chiefly above Walden Ridge, from southwestern Virginia to Wayne County, Tennessee.

HABITAT.—Streams.

### *Orconectes (Procericambarus) hylas* (Faxon)

FIGURE 172

*Cambarus hylas* Faxon, 1890:632.

*Cambarus (Faxonius) hylas*.—Ortmann, 1905c:112.

*Faxonius hylas*.—Creaser, 1933a:3 [by implication]; 1962:2 [by implication].

*Faxonius (Faxonius) hylas*.—Creaser, 1933b:21 [by implication].

*Orconectes hylas*.—Hobbs, 1942a:352 [by implication]; 1974b:30, fig. 134.—Williams, 1954:847, figs. 74–82.—Fitzpatrick, 1963:61 [by implication].—1987a:25.

*Orconectes (Orconectes) hylas*.—Hobbs, 1942b:154 [by implication].

*Orconectes (Procericambarus) hylas*.—Fitzpatrick, 1987a:58.

TYPES.—Syntypes, MCZ 3858 (3 male II, 1 female), USNM 25827 (male II, female).

TYPE LOCALITY.—West Fork of Black River, Reynolds County, Missouri.

RANGE.—Tributaries of the Big and Black rivers in southeastern Missouri.

HABITAT.—Streams.

### *Orconectes (Procericambarus) leptogonopodus* Hobbs

FIGURE 169

*Orconectes leptogonopodus* Hobbs, 1948b:146, figs. 24–32; 1972b:87, figs. 68a,c, 69b; 1974b:32, fig. 131.—Williams, 1954:854, figs. 18, 99–106.—Fitzpatrick, 1963:61 [by implication].

*Orconectes (Orconectes) leptogonopodus*.—Hobbs, 1959:892.

*Faxonius leptogonopodus*.—Creaser, 1962:2 [by implication].

*Orconectes leptogonopodus leptogonopodus*.—Fitzpatrick, 1965:87.—Reimer, 1969:55, fig. 27.

*Orconectes leptogonopodus*.—Mayden, 1985:198 [erroneous spelling].

*Orconectes (Procericambarus) leptogonopodus*.—Fitzpatrick, 1987a:58.

TYPES.—Holotype, allotype, and “morphotype,” USNM 82262 (male I, female, male II); paratypes, USNM, MCZ, TU.

TYPE LOCALITY.—McKinney’s Creek, 4.7 miles (7.5 km) northeast of Hatfield, Polk County, Arkansas, on U.S. Highway 71.

RANGE.—Red River drainage in Arkansas and eastern Oklahoma, Ouachita Mountain Province.

HABITAT.—Small, clear, rocky streams.

### *Orconectes (Procericambarus) longidigitus* (Faxon)

FIGURE 181

*Cambarus longidigitus* Faxon, 1898:653, pl. 62: figs. 6–9.

*Cambarus whitmani* Steele, 1902:24, pl. 3: figs. c1, c2, pl. 5: fig. b. [Location of types unknown. Type locality, James River, Missouri.]

*Cambarus (Faxonius) longidigitus*.—Ortmann, 1905c:113.

*Faxonius longidigitus*.—Creaser, 1933a:3 [by implication]; 1962:2 [by implication].

*Faxonius (Faxonius) longidigitus*.—Creaser, 1933b:21 [by implication].

*Orconectes longidigitus*.—Hobbs, 1942a:352 [by implication]; 1974b:33, fig. 142.—Williams, 1954:884, figs. 149, 183–190.—Pflieger, 1987a:26; 1987b:10.

*Orconectes (Orconectes) longidigitus*.—Hobbs, 1942b:154 [by implication].

*Orconectes (Procericambarus) longidigitus*.—Fitzpatrick, 1987a:58.

TYPES.—Syntypes, MCZ 4364 (2 male II, female, 2 juv. female), USNM 19683 (male II, 3 female, juv. male, 2 juv. female).

TYPE LOCALITY.—Oxford Bend, White River (Izard County?), Arkansas.

RANGE.—Tributaries of the White and Little Red rivers in Missouri and Arkansas.

HABITAT.—Streams.

### *Orconectes (Procericambarus) luteus* (Creaser)

FIGURE 188

*Faxonius (Faxonius) luteus* Creaser, 1933b:7, pl. 1: figs. 3, 4, [subgenus by implication].

*Faxonius luteus*.—Creaser, 1934a:1; 1962:2 [by implication].

*Orconectes luteus*.—Hobbs, 1942a:353; 1974b:33, fig. 150.—Williams, 1954:872, figs. 149–157.—Fitzpatrick, 1963:61 [by implication].—Pflieger, 1987a:27; 1987b:11.

*Orconectes (Orconectes) luteus*.—Hobbs, 1942b:154 [by implication].

*Orconectes luteus*.—Fitzpatrick, 1967a:143 [erroneous spelling].

*Orconectes (Procericambarus) luteus*.—Fitzpatrick, 1987a:58.

TYPES.—Holotype and allotype, USNM 98344, 98345 (male I, female); paratypes, USNM.

TYPE LOCALITY.—Niangua River at mouth of Greasy Creek, 5 miles (8 km) southeast of Buffalo, Dallas County, Missouri.

RANGE.—From the Marais des Cygnes River, Kansas, eastward through southern Missouri and into Lawrence County, Arkansas.

HABITAT.—Clear, swiftly flowing streams.

### *Orconectes (Procericambarus) macrus* Williams

FIGURE 184

*Orconectes nana macrus* Williams, 1952:337, figs. 17–24; 1954:851, figs. 2, 91–98.—Fitzpatrick, 1963:61 [by implication].—Hayes, 1973:111.

*Orconectes (Orconectes) nana macrus*.—Hobbs, 1959:892 [by implication].

*Faxonius nana macrus*.—Creaser, 1962:2 [by implication].

*Orconectes macrus*.—Hobbs, 1972b:93, fig. 74e; 1974b:33, fig. 145.—Pflieger, 1987a:28; 1987b:12.

*Orconectes (Procericambarus) macrus*.—Fitzpatrick, 1987a:58.

TYPES.—Holotype, allotype, and “morphotype,” USNM 118847 (male I, female, male II); paratypes, USNM, MCZ.

TYPE LOCALITY.—Spring River, 2 miles (3.2 km) southwest of Mount Vernon, Lawrence County, Missouri.

RANGE.—Upper Arkansas River system in southwestern

Missouri and northwestern Arkansas.

HABITAT.—Streams and shallow burrows along them.

REMARKS.—Hayes (1973:111) reported what he interpreted to be intergrade populations between *O. (P.) nana* and *O. (P.) macrus* in Delaware and Ottawa counties, Oklahoma, but in his recent revision of the genus, Fitzpatrick (1987a:58) maintained specific status for these crayfishes.

*Orconectes (Procericambarus) medius* (Faxon)

FIGURE 187

*Cambarus medius* Faxon, 1884:121; 1885a:107, pl. 3: fig. 4, pl. 9: figs. 4, 4'.  
*Cambarus (Faxonius) medius*.—Ortmann, 1905c:112.  
*Faxonius medius*.—Creaser, 1933a:3 [by implication]; 1962:2 [by implication].  
*Faxonius (Faxonius) medius*.—Creaser, 1933b:21 [by implication].  
*Orconectes medius*.—Hobbs, 1942a:352 [by implication]; 1974b:34, fig. 149.—Williams, 1954:876, figs. 158–166.—Fitzpatrick, 1963:61 [by implication].—Pflieger, 1987a:27; 1987b:11.  
*Orconectes (Orconectes) medius*.—Hobbs, 1942b:154 [by implication].  
*Orconectes (Procericambarus) medius*.—Fitzpatrick, 1987a:58.

TYPES.—Syntypes, MCZ 3585 (male I, female).

TYPE LOCALITY.—Ironton, Washington County, Missouri.

RANGE.—Headwaters of the Big and Meramec rivers in eastern Missouri.

HABITAT.—Streams.

*Orconectes (Procericambarus) menae* (Creaser)

FIGURE 189

*Faxonius (Faxonius) menae* Creaser, 1933b:5, pl. 1: figs. 9, 10 [subgenus by implication].  
*Orconectes menae*.—Hobbs, 1942a:353; Hobbs, 1974b:24, fig. 151.—Williams, 1954:863, figs. 123–131.—Fitzpatrick, 1963:61 [by implication].  
*Orconectes (Orconectes) menae*.—Hobbs, 1942b:154 [by implication].  
*Faxonius menae*.—Creaser, 1962:2 [by implication].  
*Orconectes (Procericambarus) menae*.—Fitzpatrick, 1987a:58.

TYPES.—Holotype and allotype, USNM 98330, 98331 (male I, female); paratypes, USNM, MCZ, FSBC.

TYPE LOCALITY.—Stream tributary to Irons Fork of the Ouachita River, Mena, Polk County, Arkansas.

RANGE.—Tributaries of the Ouachita River in Polk and Montgomery counties, Arkansas, and of the Red River in LeFlore and McCurtain counties, Oklahoma.

HABITAT.—Rocky creeks.

*Orconectes (Procericambarus) mirus* (Ortmann)

FIGURE 182

*Cambarus (Faxonius) rusticus mirus* Ortmann, 1931:81.  
*Faxonius (Faxonius) mirus*.—Creaser, 1933b:10 [by implication].  
*Orconectes rusticus mirus*.—Hobbs, 1942a:352 [by implication].—Fitzpatrick, 1963:61 [by implication].  
*Orconectes (Orconectes) rusticus mirus*.—Hobbs, 1942b:154 [by implication].  
*Faxonius mirus*.—Creaser, 1962:2 [by implication].  
*Orconectes mirus*.—Hobbs, 1972b:97, figs. 74i, 76c,e; 1974b:35, fig. 143.  
*Orconectes (Procericambarus) mirus*.—Fitzpatrick, 1987a:58.

TYPES.—Syntypes, CM 74.1378 (male I, 3 male II, female).

TYPE LOCALITY.—Hurricane Creek, Cumberland Springs,

Moore County, Tennessee.

RANGE.—Northern tributaries of the westward flowing segment of the Tennessee River in Alabama and Tennessee, and the Duck and Harpeth rivers in Tennessee.

HABITAT.—Streams.

*Orconectes (Procericambarus) nana* Williams

FIGURE 183

*Orconectes nana nana* Williams, 1952:333, figs. 9–16; 1954:849, figs. 82–90.—Fitzpatrick, 1963:61 [by implication].  
*Orconectes (Orconectes) nana nana*.—Hobbs, 1959:892 [by implication].  
*Faxonius nana nana*.—Creaser, 1962:2 [by implication].  
*Orconectes nana*.—Hobbs, 1972b:96, figs. 74g, 76a; 1974b:35, fig. 144.  
*Orconectes (Procericambarus) nana*.—Fitzpatrick, 1987a:58.

TYPES.—Holotype, allotype, and “morphotype,” USNM 129824, 129825, 129826 (male I, female, male II); paratypes, USNM, MCZ.

TYPE LOCALITY.—Flint Creek, 5 miles (8 km) east of Kansas, Delaware County, Oklahoma.

RANGE.—Neosho River basin in Arkansas and eastern Oklahoma.

HABITAT.—Rocky streams.

REMARKS.—See “Remarks” under *O. (P.) macrus*.

*Orconectes (Procericambarus) neglectus chaenodactylus* Williams

FIGURE 179

*Orconectes neglectus chaenodactylus* Williams, 1952:344, figs. 33–40; 1954:869, figs. 140–148.—Fitzpatrick, 1963:61 [by implication].—Hobbs, 1974b:36, fig. 140.  
*Orconectes (Orconectes) neglectus chaenodactylus*.—Hobbs, 1959:893 [by implication].  
*Faxonius neglectus chaenodactylus*.—Creaser, 1962:2 [by implication].  
*Orconectes neglectus chaenodactylus*.—Price and Payne, 1977:79 [erroneous spelling].  
*Orconectes neglectus chaenodactylus*.—Morales, Bozada, and Casanova, 1987:175 [erroneous spelling].  
*Orconectes (Procericambarus) neglectus chaenodactylus*.—Fitzpatrick, 1987a:58.

TYPES.—Holotype, allotype, and “morphotype,” USNM 118840 (male I, female, male II); paratypes, USNM, MCZ.

TYPE LOCALITY.—Whites Creek, 8.6 miles (13.7 km) southeast of Ava, Douglas County, Missouri.

RANGE.—North Fork of the White River in Arkansas and Missouri, and as far south as Sylamore Creek in Stone County, Arkansas; intergrading in the headwaters with the nominate subspecies.

HABITAT.—Streams.

*Orconectes (Procericambarus) neglectus neglectus* (Faxon)

FIGURE 180

*Cambarus neglectus* Faxon, 1885b:142.  
*Cambarus (Faxonius) neglectus*.—Ortmann, 1905c:112.—Creaser and



Ortenburger, 1933:17, figs. 9, 15, 23.  
*Faxonius neglectus*.—Creaser, 1933a:3 [by implication].  
*Faxonius (Faxonius) neglectus*.—Creaser, 1933b:9 [by implication].  
*Cambarus neglecta*.—Parks, Smith, and Garrett, 1939:2 [erroneous spelling].  
*Orconectes neglectus*.—Hobbs, 1942a:352 [by implication].—Pflieger, 1987a:25; 1987b:9.  
*Orconectes (Orconectes) neglectus*.—Hobbs, 1942b:154 [by implication].  
*Orconectes neglectus neglectus*.—Williams, 1952:344 [by implication]; 1954:866, figs. 132–139, 148.—Fitzpatrick, 1963:61 [by implication].—Hobbs, 1974b:36, fig. 141.—Unger, 1978:7, figs. 9–13, 29.  
*Faxonius neglectus neglectus*.—Creaser, 1962:2 [by implication].  
*Orconectes transfuga* Fitzpatrick, 1966b:178, figs. A–T. [Types: holotype and allotype, USNM 114763 (male I, female); morphotype, USNM 114762 (male II); paratypes, MCZ, USNM. Type locality: Rogue River, 6 miles (9.6 km) upstream from Grants Pass, Jackson County, Oregon. (See Bouchard, 1977a:38 and 1978c:412, or 1980a:412).]  
*Orconectes transfugus*.—Fitzpatrick, 1967a:143 [erroneous spelling].  
*Orconectes (Procericambarus) neglectus neglectus*.—Fitzpatrick, 1987a:58.  
*Orconectes (Procericambarus) transfuga*.—Fitzpatrick, 1987a:58.

TYPES.—Syntypes, MCZ 3757 (male I, female), MCZ 3590 (male II, questionable type), Mus. Washburn Coll., no longer there.

TYPE LOCALITY.—Mill Creek, Wabaunsee County, Kansas.

RANGE.—Streams in the White (except North Fork) and Arkansas river systems in Missouri, Oklahoma, and Arkansas, and in tributaries of the Kansas River in Colorado, Nebraska, and east central Kansas. Introduced into the Rogue River basin in Oregon (Bouchard, 1978c:412).

HABITAT.—Rocky streams.

### *Orconectes (Procericambarus) ozarkae* Williams

FIGURE 190

*Orconectes ozarkae* Williams, 1952:339, figs. 25–32; 1954:860, figs. 115–123.—Fitzpatrick, 1963:61 [by implication].—Hobbs, 1974b:36, fig. 153.—Pflieger, 1987a:25; 1987b:9.  
*Orconectes (Orconectes) ozarkae*.—Hobbs, 1959:892.  
*Faxonius ozarkae*.—Creaser, 1962:2 [by implication].  
*Orconectes (Procericambarus) ozarkae*.—Fitzpatrick, 1987a:58.

TYPES.—Holotype, allotype, USNM 118846 (male I, female) and “morphotype,” USNM 118844 (male II); paratypes, USNM, MCZ.

TYPE LOCALITY.—Hackney Creek, 4.6 miles (7.3 km) west-southwest of Stuart, Sharp County, Arkansas.

RANGE.—White and Black river systems in southern Missouri and northern Arkansas.

HABITAT.—Streams.

### *Orconectes (Procericambarus) peruncus* (Creaser)

FIGURE 173

*Cambarus (Faxonius) peruncus* Creaser, 1931a:7, figs. 13–17.  
*Faxonius (Faxonius) peruncus*.—Creaser, 1933b:12 [by implication].  
*Faxonius peruncus*.—Creaser, 1934a:1; 1962:2 [by implication].  
*Orconectes peruncus*.—Hobbs, 1942a:353; 1974b:38, fig. 135.—Williams, 1954:845, figs. 18, 66–73.—Fitzpatrick, 1963:61 [by implication].—Pflieger, 1987a:26; 1987b:10.  
*Orconectes (Orconectes) peruncus*.—Hobbs, 1942b:154 [by implication].

*Orconectes (Procericambarus) peruncus*.—Fitzpatrick, 1987a:58.

TYPES.—Holotype and allotype, USNM 98339, 98340 (male I, female); paratypes, USNM.

TYPE LOCALITY.—Little Creek, tributary to St. Francis River, 1 mile (1.6 km) northeast of Chloride, Iron County, Missouri.

RANGE.—Headwaters of the St. Francis River in central Missouri.

HABITAT.—Rocky streams.

### *Orconectes (Procericambarus) placidus* (Hagen)

FIGURE 177

*Cambarus placidus* Hagen, 1870:65, pl. 1: figs. 76–79, pl. 3: fig. 158.  
*Cambarus rusticus*, var. *placida*.—Faxon, 1885a:65.  
*Cambarus rusticus*, var. *placidus*.—Faxon, 1885b:142.  
*Cambarus rusticus placidus*.—Faxon, 1890:630.  
*Cambarus (Faxonius) rusticus placidus*.—Ortmann, 1931:76.  
*Faxonius placidus*.—Creaser, 1933a:3, [by implication]; 1962:2 [by implication].  
*Faxonius (Faxonius) placidus*.—Creaser, 1933b:10 [by implication].  
*Cambarus rusticus placidus*.—Fleming, 1938:302 [erroneous spelling].  
*Orconectes rusticus placidus*.—Hobbs, 1942a:352 [by implication].—Fitzpatrick, 1963:61 [by implication].  
*Orconectes (Orconectes) rusticus placidus*.—Hobbs, 1942b:154 [by implication].  
*Orconectes placidus*.—Hobbs, 1966b:69; 1974b:38, fig. 138.—Page, 1985b:404, figs. 136–140.  
*Orconectes (Procericambarus) placidus*.—Fitzpatrick, 1987a:58.

TYPES.—Syntypes, MCZ 170 (3 male I, 1 male II), MCZ 289 (4 male II, 3 female), MCZ 296 (male I), USNM 4966 (male II), MHNP (male II, 3 female), Würzburg Museum (?), see Faxon, 1914:418), AMS.

TYPE LOCALITY.—Lebanon, Wilson County, Tennessee.

RANGE.—Lower Ohio, Cumberland, Duck, and Tennessee drainage systems in southern Illinois, Kentucky, Tennessee, and northern Alabama.

HABITAT.—Streams.

### *Orconectes (Procericambarus) punctimanus* (Creaser)

FIGURE 171

*Faxonius (Faxonius) punctimanus* Creaser, 1933b:1, pl. 1: figs. 5, 6 [subgenus by implication].  
*Faxonius punctimanus*.—Creaser, 1934a:1; 1962:2 [by implication].  
*Orconectes punctimanus*.—Hobbs, 1942a:353; 1974b:39, fig. 133.—Williams, 1954:856, figs. 107–114, 200.—Fitzpatrick, 1963:61 [by implication].—Pflieger, 1987a:27; 1987b:11.  
*Orconectes (Orconectes) punctimanus*.—Hobbs, 1942b:154 [by implication].  
*Orconectes (Procericambarus) punctimanus*.—Fitzpatrick, 1987a:58.

TYPES.—Holotype and allotype, USNM 98342, 98343 (male I, female); paratypes, USNM, MCZ.

TYPE LOCALITY.—Rubidoux Creek at Waynesville, Pulaski County, Missouri.

RANGE.—Between the White, St. Francis, and Missouri rivers in Arkansas and Missouri.

HABITAT.—Streams.

*Orconectes (Procericambarus) putnami* (Faxon)

FIGURE 186

- Cambarus Putnami* Faxon, 1884:131; 1885a:118, pl. 5: fig. 5, pl. 9: figs. 6, 6', 6a, 6a'.  
*Cambarus putnami*.—Underwood, 1886:372.  
*Cambarus (Faxonius) putnami*.—Ortmann, 1905c:112.  
*Orconectes putnami*.—Rhoades, 1944a:129.—Hobbs, 1972b:86, figs. 68d, 69a; 1974b:39, fig. 148.  
*Orconectes (Procericambarus) putnami*.—Fitzpatrick, 1987a:58.

TYPES.—Syntypes, MCZ 3568 (4 male I, 7 female, 8 juv. male, 5 juv. female), MCZ 3569 (13 male I), MCZ 3570 (3 male I), USNM 10130 (male I), ZIAS 1/44971 (male, 2 female).

TYPE LOCALITY.—Bear Creek, Grayson Springs, Grayson County, Kentucky.

RANGE.—Ohio drainage system in western Kentucky, southern Indiana(?), and Tennessee(?).

HABITAT.—Streams.

REMARKS.—Following Ortmann (1931), this species has been largely relegated to synonymy with *O. juvenilis* (Hagen) (= *O. (P.) rusticus*). Even Rhoades, in using the combination *Orconectes putnami* for the first time, considered it a synonym of *O. juvenilis*. Not until 1972 was it proposed that it again be accorded specific status, but its range and that of the closely allied *O. (P.) spinosus* have not been adequately investigated.

*Orconectes (Procericambarus) quadruncus* (Creaser)

FIGURE 168

- Faxonius (Faxonius) quadruncus* Creaser, 1933b:10, pl. 1: figs. 11, 12 [subgenus by implication].  
*Faxonius quadruncus*.—Creaser, 1934a:1; 1962:2 [by implication].  
*Orconectes quadruncus*.—Hobbs, 1942a:353; 1974b:39, fig. 130.—Williams, 1954:844, figs. 1, 58–65.—Fitzpatrick, 1963:61 [by implication].—Pflieger, 1987a:26; 1987b:10.  
*Orconectes (Orconectes) quadruncus*.—Hobbs, 1942b:154 [by implication].  
*Orconectes (Procericambarus) quadruncus*.—Fitzpatrick, 1987a:58.

TYPES.—Holotype and allotype, USNM 98346, 98347 (male I, female); paratypes, USNM, MCZ.

TYPE LOCALITY.—Stout's Creek, tributary to St. Francis River, between Ironton and Arcadia, Iron County, Missouri.

RANGE.—Restricted to the headwaters of the St. Francis River system in Iron, Genevieve, and Madison counties, Missouri.

HABITAT.—Rapidly flowing, rocky streams.

*Orconectes (Procericambarus) rusticus* (Girard)

FIGURE 174

- Cambarus rusticus* Girard, 1852:88.—Faxon, 1885a:108, pl. 9: figs. 8, 8', 8a, 8a'.  
*Cambarus juvenilis* Hagen, 1870:66, pl. 1: figs. 29–33, pl. 3: fig. 157. [Syntypes, MCZ 3347 (26 male II, female, 8 juv. male), USNM 4967 (male I), USNM 25830 (male I, female), MHNP (2 male, 2 female). Other types

cited by Faxon (1914:418) apparently no longer extant. Type locality, Kentucky River, Little Hickman, Jessamine County, Kentucky.]

*Cambarus juvenalis*.—Harris, 1900:271 [erroneous spelling].

*Cambarus (Faxonius) rusticus*.—Ortmann, 1905c:112.

*Faxonius rusticus*.—Williamson, 1907:753 [*Faxonius* intended as a subgeneric name].—Creaser, 1933a:5.

*Cambarus (Faxonius) rusticus rusticus*.—Ortmann, 1931:82.

*Cambarus (Faxonius) juvenilis*.—Ortmann, 1931:84 [in part].

*Faxonius juvenilis*.—Creaser, 1933a:3 [by implication]; 1962:2 [by implication].

*Faxonius (Faxonius) rusticus rusticus*.—Creaser, 1933b:21 [by implication].

*Orconectes rusticus rusticus*.—Hobbs, 1942a:352 [by implication].—Fitzpatrick, 1963:61 [by implication].

*Orconectes juvenilis*.—Hobbs, 1942a:352 [by implication]; 1974b:32, fig. 147.—Fitzpatrick, 1963:61 [by implication].

*Orconectes (Orconectes) rusticus rusticus*.—Hobbs, 1942b:154 [by implication].

*Orconectes (Orconectes) juvenilis*.—Hobbs, 1942b:154 [by implication].

*Orconectes rusticus*.—Pennak, 1953:465.—Hobbs, 1972b:92, figs. 74c, 75b,d; 1974b:40, fig. 136.—Page, 1985b:412, figs. 145–147.

*Orconectes rusticus*.—Threinen, 1958:3 [erroneous spelling].

*Faxonius rusticus rusticus*.—Creaser, 1962:2 [by implication].

*Orconectes juvenilis*.—Hobbs and Walton, 1966:136 [erroneous spelling in title].

*Orconectes juvenalis*.—Merkle, 1969:228 [erroneous spelling].

*Orconectes juvenilis*.—Hart and Hart, 1974:45 [erroneous spelling].

*Cambarus vusticus*.—Lake and Newcombe, 1975:212 [erroneous spelling].

*Orconectes rusticus*.—DuBois and Sharma, 1977:27 [erroneous spelling].

*Procericambarus rusticus*.—Huner, 1978:4 [lapsus calami].

*Cambarus rustrineus rustrineus*.—Brodsky, 1981:49 [erroneous spelling].

*Orconectes (Procericambarus) rusticus*.—Fitzpatrick, 1987a:58.

TYPES.—“Types probably destroyed in the Chicago fire in 1871” (Faxon, 1914:418). Questionable types: USNM 4968 (male II), in very poor condition; ANSP 195 (dry female).

TYPE LOCALITY.—Ohio River at Cincinnati, Hamilton County, Ohio.

RANGE.—Southern Ontario and Michigan to Kentucky and Tennessee; presumably introduced in one or more of the following: New England, Illinois, Iowa, Minnesota, New Mexico, West Virginia, and Wisconsin. (See Page, 1985b:412; Lawton, 1979:90.)

HABITAT.—Streams, ponds, and lakes.

*Orconectes (Procericambarus) saxatilis* Bouchard and Bouchard

FIGURE 175

- Orconectes saxatilis* Bouchard and Bouchard, 1976a:439, fig. 1.  
*Orconectes (Procericambarus) saxatilis*.—Fitzpatrick, 1987a:58.

TYPES.—Holotype, allotype, and morphotype, USNM 146577, 146578, 146579 (male I, female, male II); paratypes, USNM, Raymond W. Bouchard.

TYPE LOCALITY.—Pigeon Creek at Oklahoma State Highway 63, LaFlore County, Oklahoma.

RANGE.—Known only from the type locality, Red River Basin.

HABITAT.—Stream.

***Orconectes (Procericambarus) spinosus* (Bundy)**

FIGURE 185

*Cambarus spinosus* Bundy, 1877:173.—Faxon, 1885a:115, pl. 9: figs. 7, 7', 7a, 7a'.

*Cambarus (Faxonius) spinosus*.—Ortmann, 1905c:112.

*Cambarus (Faxonius) juvenilis*.—Ortmann, 1931:84 [in part].

*Orconectes spinosus*.—Hobbs, 1944:340; 1972b:87, figs. 68b,g, 69d; 1974b:41, fig. 146; 1981:293, figs. 19b, 107a, 108d, 113, 114, 233.

*Orconectes spinosus*.—Fitzpatrick, 1983b:190 [erroneous spelling].

*Orconectes (Procericambarus) spinosus*.—Fitzpatrick, 1987a:58.

TYPES.—Syntypes, MCZ 3540 (2 male II, 2 female), MCZ 3541, (male II, female), USNM 19779 (3 male II, 2 female).

TYPE LOCALITY.—“Etowah, Oostanaula, and Coosa Rivers, in the vicinity of Rome, Georgia” (Bundy, 1877:174).

RANGE.—Coosa, Tennessee, and Kanawha(?) river systems in Alabama, Georgia, eastern Tennessee, Virginia(?), and West Virginia(?). The limits of the range of *O. (P.) spinosus* and the closely related *O. (P.) putnami* have not been determined.

HABITAT.—Streams.

REMARKS.—Following Ortmann (1931), this species has been largely relegated to synonymy with *O. juvenilis* (Hagen) (= *O. (P.) rusticus* (Girard)). Not until 1972 was it again accorded specific status.

***Orconectes (Procericambarus) williamsi* Fitzpatrick**

FIGURE 191

*Orconectes williamsi* Fitzpatrick, 1966a:145, figs. 1–10.—Hobbs, 1974b:43, fig. 154.

*Orconectes (Procericambarus) williamsi*.—Fitzpatrick, 1987a:58.

TYPES.—Holotype, allotype, and morphotype, USNM 115520, 115521, 115522 (male I, female, male II); paratypes, MCZ, OSM.

TYPE LOCALITY.—White River, 2.8 miles (4.5 km) east of Pettigrew, Madison County, Arkansas.

RANGE.—Headwaters of the White River from Madison and Washington counties, Arkansas, to Barry County, Missouri.

HABITAT.—Pools in small streams.

**Subgenus *Rhoadesius* Fitzpatrick**

*Cambarus*.—Bundy, 1876:24 [in part].

Subgenus *Faxonius* Ortmann, 1905c:107 [in part].

*Faxonius*.—Creaser, 1933a:3 [by implication; in part].

*Orconectes*.—Hobbs, 1942a:352 [in part].

Subgenus *Orconectes*.—Hobbs, 1942b:154 [by implication; in part].

Subgenus *Rhoadesius* Fitzpatrick, 1987a:58. [Type species, by original designation, *Cambarus sloanii* Bundy, 1876:24. Gender: masculine.]

***Orconectes (Rhoadesius) kentuckiensis* Rhoades**

FIGURE 151

*Orconectes kentuckiensis* Rhoades, 1944a:122, fig. 4a–f.—Fitzpatrick, 1963:61 [by implication].—Hobbs, 1974b:32, fig. 113.—Page, 1985b:396, figs. 128–131.

*Orconectes (Orconectes) kentuckiensis*.—Hobbs, 1959:894.

*Faxonius kentuckiensis*.—Creaser, 1962:2 [by implication].

*Orconectes kentuckiensis*.—Magnuson et al., 1975:71 [erroneous spelling].

*Orconectes (Rhoadesius) kentuckiensis*.—Fitzpatrick, 1987a:60.

TYPES.—Holotype, allotype, and “morphotype” (designated as allotype by Rhoades), USNM 81313, 81315, 81314 (male I, female, male II); paratypes, MCZ, ANSP, OSM.

TYPE LOCALITY.—Piney Creek, 3 miles (4.8 km) west of Shady Grove, Crittenden County, Kentucky.

RANGE.—Caldwell, Crittenden, Livingston, and Union counties, Kentucky, and Hardin County, Illinois.

HABITAT.—Mud-bottomed streams.

***Orconectes (Rhoadesius) sloanii* (Bundy)**

FIGURE 150

*Cambarus sloanii* Bundy, 1876:24.

*Cambarus Sloanii*.—Faxon, 1885a:89, pl. 4: fig. 5, pl. 10: figs. 1, 1', 1a, 1a'.

*Cambarus sloanei*.—Ortmann, 1902:278 [erroneous spelling].

*Cambarus (Faxonius) sloanei*.—Ortmann, 1905c:107 [erroneous spelling].

*Faxonius sloanii*.—Creaser, 1933a:3 [by implication]; 1962:2 [by implication].

*Faxonius (Faxonius) sloanii*.—Creaser, 1933b:21 [by implication].

*Cambarus sloani*.—Rhoades, 1941a:93.

*Orconectes sloanii*.—Hobbs, 1942a:352 [by implication]; 1974b:41, fig. 112.—Eberly, 1955:281.

*Orconectes (Orconectes) sloanii*.—Hobbs, 1942b:154 [by implication].

*Orconectes sloani*.—Hobbs, 1948a:20.

*Orconectes sloanei*.—Eberly, 1958:2 [erroneous spelling].

*Orconectes (Orconectes) sloani*.—Hobbs, 1959:894.

*Orconectes sloanni*.—Hobbs III, 1975:284 [erroneous spelling].

*Orconectes (Rhoadesius) sloanii*.—Fitzpatrick, 1987a:60, fig. 10.

TYPES.—Syntypes, MCZ 3806 (male I, female).

TYPE LOCALITY.—New Albany, Floyd County, Indiana.

RANGE.—Southern Indiana and southwestern Ohio.

HABITAT.—Streams.

**Subgenus *Tragulicambarus* Fitzpatrick**

*Cambarus*.—Hagen, 1870:59.

Subgenus *Faxonius* Ortmann, 1905c:113 [in part].

*Faxonius*.—Penn, 1939:215.

*Orconectes*.—Hobbs, 1942a:352 [by implication; in part].

Subgenus *Orconectes*.—Hobbs, 1942b:154 [by implication; in part].

Subgenus *Tragulicambarus* Fitzpatrick, 1987a:60. [Type species, by original designation, *Cambarus lancifer* Hagen, 1870:59. Gender: masculine].

***Orconectes (Tragulicambarus) lancifer* (Hagen)**

FIGURE 152

*Cambarus lancifer* Hagen, 1870:59, pl. 1: figs. 86, 87, pl. 3: fig. 159.

*Cambarus faxonii* Meek, 1894:1042, figs. 1–4. [Syntypes, MCZ 4220 (4 male II, 3 female), USNM 19331 (40 male II and 25 female), USNM 22425 (male II, female). Type locality, St. Francis River at Greenway and Big Bay, Clay County, Arkansas.]

*Cambarus (Faxonius) lancifer*.—Ortmann, 1905c:113.

*Faxonius lancifer*.—Penn, 1939:215.

*Orconectes lancifer*.—Hobbs, 1942a:352 [by implication]; 1974b:32, fig. 114.—Fitzpatrick, 1963:61 [by implication].—Page, 1985b:400, figs. 131–135.—Pflieger, 1987a:29; 1987b:13.



*Orconectes (Orconectes) lancifer*.—Hobbs, 1942b:154 [by implication].  
*Orcnoectes lancifer*.—O'Brien, 1976:84 [erroneous spelling].  
*Orconectes (Tragulicambarus) lancifer*.—Fitzpatrick, 1987a:60.

TYPE.—Holotype, MCZ 306 (male I).

TYPE LOCALITY.—"Root Pond, Miss." Rocky Ford near Etta, Union County, Mississippi, fide Penn (1939:215).

RANGE.—Known from the coastal plain and Mississippi River floodplain of eastern Texas, Louisiana, Arkansas, Mississippi, Missouri, Tennessee, Kentucky, and extreme southern Illinois.

HABITAT.—Sluggish streams and lentic situations.

### Genus *Procambarus* Ortmann

*Astacus*.—Harlan, 1830:464 [not Fabricius, 1775].  
 Subgenus *Cambarus* Erichson, 1846:95 [in part]. [Type species, by subsequent designation (Faxon, 1898:644), *Astacus Bartonii* Fabricius, 1798:407. Gender: masculine.]  
*Cambarus*.—Girard, 1852:91 [in part].  
*Camborus*.—Williamson, 1899:47 [erroneous spelling].  
 Subgenus *Cambarus* Ortmann, 1905c:96 [in part]. [Type species, by invalid designation, *Astacus Blandingii* Harlan, 1830:464. Gender: masculine.]  
 Subgenus *Procambarus* Ortmann, 1905d:435, 437. [Type species, by subsequent designation (Fowler, 1912:340), *Cambarus Diguetti* Bouvier, 1897:225. Gender: masculine.]  
 Subgenus *Paracambarus* Ortmann, 1906a:1. [Type species, by monotypy, *Cambarus (Paracambarus) paradoxus* Ortmann, 1906a:3. Gender: masculine. Proposed as subgenus of *Cambarus*, elevated to generic rank by Hobbs, 1942a:344, and reduced to subgenus of *Procambarus* by Hobbs, 1972a:10.]  
 Subgenus *Ortmannicus* Fowler, 1912:341. [Type species, by original designation, *Astacus Blandingii* Harlan, 1830:464. Gender: masculine. Replacement name for Ortmann's subgenus *Cambarus*. Utilized as generic name by Rhoades, 1944a:114, and as a subgenus of *Procambarus* by Hobbs, 1972a:9.]  
*Cambarellus*.—Creaser, 1933b:21 [lapsus calami].  
 Subgenus *Girardiella* Lyle, 1938:76. [Type species, by monotypy, *Cambarus Hagenianus* Faxon, 1884:141. Gender: feminine.]  
*Cambaru*.—Goodnight, 1941:72 [erroneous spelling].  
*Procambarus*.—Hobbs, 1942a:341 [Ortmann's (1905d) subgenus elevated to generic rank]; 1984: fig. 1.  
*Ortmannicus*.—Hobbs, 1942a:342 [erroneous spelling].  
*Cambaus*.—Okada, 1948:133 [erroneous spelling].  
*Pracambarus*.—Villalobos, 1953:352 [erroneous spelling].  
*Paracambarus*.—Villalobos, 1953:354 [erroneous spelling].  
*Procambrus*.—Sukó, 1961:37 [erroneous spelling].  
*procambarus*.—Padgett, 1970:19 [lapsus calami].  
 Subgenus *Acucauda* Hobbs, 1972a:5. [Type species, by original designation, *Procambarus fitzpatricki* Hobbs, 1971a:461. Gender: feminine.]  
 Subgenus *Austrocambarus* Hobbs, 1972a:5. [Type species, by original designation, *Procambarus vazquezae* Villalobos, 1954b:328. Gender: masculine.]  
 Subgenus *Capillicambarus* Hobbs, 1972a:6. [Type species, by original designation, *Cambarus (Cambarus) hinei* Ortmann, 1905b:401. Gender: masculine.]  
 Subgenus *Hagenides* Hobbs, 1972a:7. [Type species, by original designation, *Astacus advena* LeConte, 1856:402. Gender: masculine.]  
 Subgenus *Leconiticambarus* Hobbs, 1972a:7. [Type species, by original designation, *Cambarus barbatus* Faxon, 1890:621. Gender: masculine.]  
 Subgenus *Lonnbergius* Hobbs, 1972a:8. [Type species, by original designation, *Cambarus acherontis* Lönnberg, 1894:125. Gender: masculine.]  
 Subgenus *Mexicambarus* Hobbs, 1972a:8. [Type species, by original designa-

tion, *Cambarus (Cambarus) bouvieri* Ortmann, 1909:159. Gender: masculine].

Subgenus *Pennides* Hobbs, 1972a:10. [Type species, by original designation, *Procambarus natchitochae* Penn, 1953d:5. Gender: masculine].  
 Subgenus *Remoticambarus* Hobbs, 1972a:11. [Type species, by original designation, *Procambarus pecki* Hobbs, 1967b:2. Gender: masculine].  
 Subgenus *Scapulicambarus* Hobbs, 1972a:11. [Type species, by original designation, *Cambarus clarkii paeninsulanus* Faxon, 1914:369. Gender: masculine].  
 Subgenus *Tenuicambarus* Hobbs, 1972a:12. [Type species, by original designation, *Procambarus tenuis* Hobbs, 1950b:194. Gender: masculine.]  
 Subgenus *Villalobos* Hobbs, 1972a:12. [Type species, by original designation, *Paracambarus riojae* [sic] Villalobos, 1944a:161. Gender: masculine].  
*Procamborus*.—Franzini-Armstrong, 1976:218 [erroneous spelling].  
*Procambararus*.—Hobbs III, Thorp, and Anderson, 1976:12 [erroneous spelling].  
*Procambarus*.—Huner, 1977:10 [erroneous spelling].  
*Procambaris*.—Wharton, 1978:46 [erroneous spelling].  
*Procamburus*.—Brown and Bowler, 1978:34 [erroneous spelling].  
*Combarus*.—Shinozaki and Ishida, 1981:50 [erroneous spelling].  
*Procambarius*.—Mauro, Thompson, and Melacha, 1983:938 [erroneous spelling].  
*Procambarus*.—Appelberg, 1983:67 [erroneous spelling].  
*Procamberus*.—Welcome, 1985:91 [erroneous spelling].

### Subgenus *Acucauda* Hobbs

*Cambarus*.—Lyle, 1938:76 [in part].  
 Subgenus *Paracambarus*.—Lyle, 1938:76.  
*Procambarus*.—Hobbs, 1972a:5 [in part].  
 Subgenus *Acucauda* Hobbs, 1972a:5 [Type species, by original designation, *Procambarus fitzpatricki* Hobbs, 1971a:461. Gender: feminine.]; 1984, fig. 7.

### *Procambarus (Acucauda) fitzpatricki* Hobbs

FIGURE 211

*Cambarus (Paracambarus) harnedi* Lyle, 1938:76 [nomen nudum].  
*Procambarus fitzpatricki* Hobbs, 1971a:461, fig. 1.  
*Procambarus (Acucauda) fitzpatricki*.—Hobbs, 1972a:5, figs. 11, 2a, 4a-g; 1974b:43, fig. 170.

TYPES.—Holotype, allotype, and morphotype, USNM 131205, 131206, 131207 (male I, female, male II); paratypes, USNM.

TYPE LOCALITY.—Roadside ditch at junction of State Route 67 and Woolmarket Road, just north of D'Iberville, Harrison County, Mississippi.

RANGE.—Southern Mississippi between the Wolf and Pascagoula rivers.

HABITAT.—Burrows (primary or secondary burrower).

### Subgenus *Austrocambarus* Hobbs

*Astacus*.—Erichson, 1846:87 [in part].  
*Cambarus*.—Girard, 1852:87 [in part].  
 Subgenus *Cambarus* Ortmann, 1905c:101 [in part].  
 Subgenus *Procambarus* Ortmann, 1905d:438 [in part].  
*Procambarus*.—Hobbs, 1942a:342 [in part].  
 Subgenus *Austrocambarus* Hobbs, 1972a:5 [Type species, by original designation, *Procambarus vazquezae* Villalobos, 1954b:328. Gender: masculine.]; 1984, fig. 6.

***Procambarus (Astrocambarus) acanthophorus* Villalobos**

FIGURE 223

*Procambarus acanthophorus* Villalobos, 1948:175, pl. 1: figs. 1-10, pl. 2: figs. 1-9; 1955:218, pls. 49, 50; 1983:209, pls. 49, 50.*Procambarus (Astrocambarus) acanthophorus*.—Hobbs, 1972a:6; 1974b:43, fig. 180.*Procambarus acantophorus*.—Spitzzy, 1976:443 [erroneous spelling].

TYPES.—Holotype, allotype, and morphotype, IBM 90847(035) (male I, female, male II); paratypes, IBM, USNM.

TYPE LOCALITY.—Four kilometers (2.5 mi) east of Tuxtepec, Oaxaca, Mexico.

RANGE.—Atlantic drainage in southern Veracruz, Chiapas, and Oaxaca, Mexico.

HABITAT.—Streams and canals.

***Procambarus (Astrocambarus) atkinsoni* (Ortmann)**

FIGURE 226

*Cambarus (Procambarus) atkinsoni* Ortmann, 1913:414.*Procambarus atkinsoni*.—Hobbs, 1942a:342 [by implication].—Hobbs and Villalobos, 1964:346, figs. 40-50.*Procambarus Atkinsoni*.—Creaser, 1962:7.*Cambarus atkinsoni*.—Hobbs and Villalobos, 1964:323.*Procambarus (Astrocambarus) atkinsoni*.—Hobbs, 1972a:6; 1974b:44, fig. 183.

TYPES.—Lectoholotype, lectoallotype, and lectomorphotype, CM 74.924 (male I, female, male II); paralectotypes, CM 74.924, 74.925. Designated by Hobbs and Villalobos, 1964:347, 349, 350.

TYPE LOCALITY.—Tributaries of Río de los Indios, Isla de Pinos, Cuba.

RANGE.—Isla de Pinos, Cuba.

HABITAT.—Streams (?).

***Procambarus (Astrocambarus) cubensis cubensis* (Erichson)**

FIGURE 228

*Astacus Cubensis* Erichson, 1846:87.*Astacus (Cambarus) Cubensis* Erichson, 1846:100.*Cambarus Cubensis*.—Girard, 1852:87 [by implication].—Faxon, 1885a:51, pl. 2: fig. 1, pl. 8: figs. 5, 5', 5a, 5a'.*Cambarus consobrinus* Saussure, 1857a:101. [Syntypes, GM (uncatalogued, dry, 2 male), specimens formerly in MHNP no longer there, BMNH 1163 (2 female), USNM 20684 (male II). Type locality, ponds in the central part of Cuba.]*Cambarus cubensis*.—Huxley, 1880a:305.*Cambarus (Cambarus) cubensis*.—Ortmann, 1905c:101.*Cambarus (Procambarus) cubensis*.—Ortmann, 1905d:438.*Astacus Cubensis*.—Valdés Ragués, 1909:180.*Cambarus cubensis cubensis*.—Faxon, 1912:458 [by implication].*Cambarus cubensis consobrinus*.—Faxon, 1912:458.*Cambarellus cubensis*.—Creaser, 1933b:21 [lapsus calami].*Procambarus cubensis cubensis*.—Hobbs, 1942a:342 [by implication].—Hobbs and Villalobos, 1964:319, figs. 1-13.*Procambarus cubensis consobrinus*.—Hobbs, 1942a:342 [by implication].*Procambarus consobrinus*.—Villalobos, 1954b:303.*Procambarus C. cubensis*.—Straskraba, 1969:18.*Astacus cubensis*.—Hobbs, 1972a:1.*Procambarus (Astrocambarus) cubensis cubensis*.—Hobbs, 1972a:6; 1974b:44, fig. 185.

TYPES.—BMNH 4140.

TYPE LOCALITY.—Cuba.

RANGE.—Scattered localities throughout Cuba except in the southwestern mountains.

HABITAT.—Lentic and lotic situations.

***Procambarus (Astrocambarus) cubensis rivalis* (Faxon)**

FIGURE 227

*Cambarus cubensis rivalis* Faxon, 1912:459.*Procambarus cubensis rivalis*.—Hobbs, 1942a:342 [by implication].—Hobbs and Villalobos, 1964:335, figs. 14-24.*Procambarus (Astrocambarus) cubensis rivalis*.—Hobbs, 1972a:6; 1974b:44, fig. 184.

TYPES.—Syntypes, MCZ 7406 (2 male II, 3 female).

TYPE LOCALITY.—San Diego de los Baños, Province of Pinar del Río, Cuba.

RANGE.—Known only from a few localities in the province of Pinar del Río, Cuba.

HABITAT.—Mountain streams.

***Procambarus (Astrocambarus) llamasi* Villalobos**

FIGURE 224

*Procambarus llamasi* Villalobos, 1954b:364, pls. 16, 17; 1955:214, pls. 51, 52; 1983:213, pls. 51, 52.*Procambarus (Astrocambarus) llamasi*.—Hobbs, 1972a:6; 1974b:44, fig. 181.—Valenzuela, 1986:1, figs. 1-18.*Procambarus llamesi*.—Covich, 1976:5 [erroneous spelling].

TYPES.—Holotype, allotype, and morphotype, IBM (male I, female, male II); paratypes, IBM, USNM.

TYPE LOCALITY.—Santa Rita, 47 kilometers (29.5 mi) east of Escárcega, Campeche, Mexico.

RANGE.—Southern Veracruz to Yucatán, Mexico, and northern Guatemala.

HABITAT.—Small streams and drainage ditches.

***Procambarus (Astrocambarus) mexicanus* (Erichson)**

FIGURE 214

*Astacus (Cambarus) mexicanus* Erichson, 1846:99.*Astacus Mexicanus*.—Erichson, 1846:87.*Astacus mexicanus*.—Dana, 1852:522.*Cambarus aztecus* Saussure, 1857b:503, fig. 23. [Type locality: "Pris à Tomatlán, dans les Terres-Chaudes," Veracruz, Mexico. Syntypes: GM, 13 dry specimens; USNM 20682 (male I, dry).]—Hobbs, 1987:206, fig. 2.*Cambarus Mexicanus*.—Saussure, 1858:460.*Cambarus mexicanus*.—Saussure, 1858:461.*Cambarus Aztecus*.—Hagen, 1870:11.*Astacus Aztecus*.—von Martens, 1872:131.*Cambarus (Cambarus) mexicanus*.—Ortmann, 1905c:101.*Cambarus (Procambarus) mexicanus*.—Ortmann, 1905d:437.

- Astacus Astecus*.—Valdés Ragués, 1909:180 [erroneous spelling].  
*Procambarus aztecus*.—Hobbs, 1942a:342 [by implication].  
*Procambarus mexicanus*.—Hobbs, 1942a:342 [by implication].—Villalobos, 1954b:307, pls. 1, 2; 1955:162, pls. 34, 35; 1983:156, pls. 34, 35.  
*Procambarus mexiacnus*.—Villalobos, 1954b:304 [erroneous spelling].  
*Procambarus Mexicanus*.—Creaser, 1962:7.  
*Procambarus (Astrocambarus) mexicanus*.—Hobbs, 1972a:6; 1974b:45, fig. 173; 1987:200, fig. 1.  
*Procambarus (Astrocambarus) aztecus*.—Hobbs, 1972a:6; 1972b [1976]:43, figs. 30e, 34c, 36b; 1974b:44, fig. 172; 1987:201.

TYPES.—Lost, formerly in ZBM. Neoholotype, ANSP 421 (male I); neoallotype and neoparatypes, IBM (Villalobos, 1954b:312).

TYPE LOCALITY.—Mexico. Restricted by Villalobos (1954b:312) to “El Mirador de Zacuapan,” 8 kilometers (5 mi) northeast of Huatusco, Veracruz.

RANGE.—Veracruz, Mexico, south of the Cordillera Volcánica Transversal.

HABITAT.—Lentic and lotic situations.

REMARKS.—A review of what is known about this crayfish is reported by Hobbs (1987), but its range and limits of variation are still poorly understood.

#### *Procambarus (Astrocambarus) mirandai* Villalobos

FIGURE 219

- Procambarus mirandai* Villalobos, 1954b:355, pls. 13–15; 1955:210, pls. 46–48; 1983:200, pls. 46–48.  
*Procambarus mirandae*.—Hobbs and Villalobos, 1964:313 [erroneous spelling].  
*Procambarus (Astrocambarus) mirandai*.—Hobbs, 1972a:6; 1974b:45, fig. 176; 1977b:198, fig. 1.

TYPES.—Holotype, allotype, and morphotype, IBM (male I, female, male II); paratypes, IBM, USNM.

TYPE LOCALITY.—Cerro Hueco, 4 kilometers (2.5 mi) southeast of Tuxtla Gutierrez, Chiapas, Mexico.

RANGE.—Known from only four localities in Chiapas.

HABITAT.—“Los ejemplares fueron colectados dentro de una gruta, que es la salida de un río subterráneo” (Villalobos, 1954b:361).

#### *Procambarus (Astrocambarus) niveus* Hobbs and Villalobos

FIGURE 229

- Procambarus niveus* Hobbs and Villalobos, 1964:342, figs. 26–39.  
*Procambarus (Astrocambarus) niveus*.—Hobbs, 1972a:6; 1974b:45, fig. 186.—Hobbs, Hobbs, and Daniel, 1977:114, fig. 51.

TYPES.—Holotype and allotype, USNM 109076, 109077 (male I, female).

TYPE LOCALITY.—“Cuevas de Santo Tomás, Sierra de los Organos, cerca de Ponce, Pinar del Río, Cuba” (Hobbs and Villalobos, 1964:346).

RANGE.—Known only from the type locality.

HABITAT.—Subterranean waters.

#### *Procambarus (Astrocambarus) oaxacae oaxacae* Hobbs

FIGURE 216

- Procambarus (Astrocambarus) oaxacae oaxacae* Hobbs, 1973b:29, figs. 3–5.—Hobbs, Hobbs, and Daniel, 1977:116, fig. 52.—Reddell, 1981:111, fig. 16.

TYPES.—Holotype, allotype, and morphotype, USNM 144341, 144342, and 144343 (male I, female, male II); paratypes, USNM, IBM, TTM.

TYPE LOCALITY.—Cueva del Guano, 10 kilometers (6.3 mi) northeast of Valle Nacional, Oaxaca, Mexico.

RANGE.—Known only from the type locality.

HABITAT.—Subterranean waters.

#### *Procambarus (Astrocambarus) oaxacae reddelli* Hobbs

FIGURE 217

- Procambarus (Astrocambarus) oaxacae reddelli* Hobbs, 1973b:33, figs. 6–8.—Hobbs, Hobbs, and Daniel, 1977:118, fig. 53.—Reddell, 1981:112, fig. 16.

*Procambarus oaxacae reddelli*.—Hobbs, 1973c:73.

TYPES.—Holotype, allotype, and morphotype, USNM 144346, 144347, 144348 (male I, female, male II); paratypes, USNM, IBM, TTM.

TYPE LOCALITY.—Cueva del Nacimiento del Río San Antonio, 10 kilometers (6.3 mi) south-southwest of Acatlán, Oaxaca, Mexico.

RANGE.—Known from five caves in Oaxaca and Veracruz, Mexico.

HABITAT.—Subterranean waters.

#### *Procambarus (Astrocambarus) pilosimanus* (Ortmann)

FIGURE 225

- Cambarus (Procambarus) pilosimanus* Ortmann, 1906a:6, fig. 2.  
*Cambarus pilosimanus*.—Pearse, 1911:110.  
*Procambarus pilosimanus*.—Hobbs, 1942a:342 [by implication].—Villalobos, 1955:231, pls. 53, 54; 1983:220, pls. 53, 54.  
*Procambarus pelosimanus*.—Creaser, 1962:7 [erroneous spelling].  
*Procambarus (Astrocambarus) pilosimanus*.—Hobbs, 1972a:6; 1974b:45, fig. 182.

TYPES.—Syntypes, MHNP (8 male, 6 female), CM 74.678 (2 specimens).

TYPE LOCALITY.—“Coche, près de la rivière de Coban [Province of Alta Verapaz], Guatemala” (Ortmann, 1906a:9). Probably Río Cahabón at Cobán.

RANGE.—Guatemala, Belize, and Chiapas and Quintana Roo, Mexico.

HABITAT.—Lentic, lotic(?), and subterranean habitats.

#### *Procambarus (Astrocambarus) primaevus* (Packard)

- Cambarus primaevus* Packard, 1880:222; 1881a:832; 1881b:391.  
*Cambarus primoevus*.—Villalobos, 1955:14 [erroneous spelling].  
*Procambarus (Astrocambarus) primaevus*.—Feldmann et al., 1981:794, pls. 2, 3.



TYPES.—Neotype, AMNH 42675 (male).

TYPE LOCALITY.—Green River beds (Eocene) of western Wyoming in “the fish beds of the Bear River Valley, situated from 75 to 100 miles [120 to 160 km] a little west of north of Evanston, Wyo., and near the Utah line” (Packard, 1881b:391).

RANGE.—Known only from the Green River beds (Eocene) of Wyoming.

HABITAT.—Fossil lake.

*Procambarus (Astrocambarus) rodriguezii* Hobbs

FIGURE 215

*Procambarus rodriguezii* Hobbs, 1943b:203, pl. 2.

*Paracambarus rodriguezii*.—Rioja, 1953:293 [lapsus calami].

*Procambarus (Astrocambarus) rodriguezii*.—Hobbs, 1972a:6 [erroneous spelling].

*Procambarus (Astrocambarus) rodriguezii*.—Hobbs, 1974b:45, fig. 174.—Hobbs, Hobbs, and Daniel, 1977:118, fig. 54.—Reddell, 1981:112, fig. 16.

TYPES.—Holotype, allotype, and “morphotype,” USNM 81302 (male I, female, male II); paratypes, USNM, MCZ.

TYPE LOCALITY.—Cueva de Ojo de Agua, west-northwest of Hacienda Potrero Viejo, Paraje Nuevo, Córdoba, Veracruz, Mexico.

RANGE.—Known only from the type locality.

HABITAT.—Subterranean stream.

REMARKS.—Reddell (1981:112) noted that

the type-locality of this species has been stated to be “Cueva del Agua” and “Cueva del Ojo de Agua Grande,” but the brief description of the type-locality as given by Hobbs (1943[b]) does not fit Cueva del Ojo de Agua Grande. Furthermore, Cueva del Ojo de Agua Grande has no habitat suitable for crayfish. It contains only a single passage and this contains a rapid rock-floored stream. A single juvenile crayfish was seen trapped in a tiny drip pool in the latter cave where flood water apparently isolated it. It must be assumed that the type-locality has not been rediscovered.

*Procambarus (Astrocambarus) ruthveni* Pearse

FIGURE 220

*Cambarus ruthveni* Pearse, 1911:110, fig. 3.

*Procambarus ruthveni*.—Hobbs, 1942a:342 [by implication]; 1954b:1, fig. 1.

*Procambarus ruthveni ruthveni*.—Villalobos, 1954b:336, pls. 9, 10; 1955:191, pls. 42, 43; 1983:183, pls. 42, 43 [by implication].

*Procambarus (Astrocambarus) ruthveni ruthveni*.—Hobbs, 1972a:6; 1974b:46, fig. 177.

TYPES.—Holotype and allotype, USNM 98348, 98349 (male I, female).

TYPE LOCALITY.—Cuatutolapan, Cantón de Acayucan, Veracruz, Mexico.

RANGE.—Known from only one additional locality: San Juan Díaz Covarrubias, 10 kilometers (6.3 mi) southwest of Cuatutolapan, Veracruz (Villalobos, 1954b:344).

HABITAT.—Temporary ponds, pools, and burrows (secondary burrower).

REMARKS.—See “Remarks” under *P. (A.) zapoapensis*.

*Procambarus (Astrocambarus) sbordonii* Hobbs

FIGURE 213

*Procambarus (Astrocambarus) sbordonii* Hobbs, 1977b:201, fig. 2.

TYPES.—Holotype, USNM 146588 (male I).

TYPE LOCALITY.—Cueva del Nacimiento de Río S. Domingo, near the village of Bochil, Chiapas, Mexico, at an altitude of 1250 m.

RANGE.—Known only from the type locality.

HABITAT.—Subterranean waters.

*Procambarus (Astrocambarus) vazquezae* Villalobos

FIGURE 212

*Procambarus vazquezae* Villalobos, 1954b:328, pls. 7, 8; 1955:184, pls. 40, 41; 1983:176, pls. 40, 41.

*Procambarus vazquezae*.—Hobbs, 1966b:71 [erroneous spelling].

*Procambarus (Astrocambarus) vazquezae*.—Hobbs, 1972a:6, figs. 2b, 5a–g; 1974b:46, fig. 171.

TYPES.—Holotype, allotype, and morphotype, IBM (male I, female, male II); paratypes, IBM, USNM.

TYPE LOCALITY.—“Playa Norte de la Laguna de Catemaco” (Villalobos, 1954b:355), Veracruz, Mexico.

RANGE.—Known only from the type locality.

HABITAT.—Under rocks along the shore of Laguna de Catemaco.

*Procambarus (Astrocambarus) veracruzianus* Villalobos

FIGURE 218

*Procambarus veracruzianus* Villalobos, 1954b:323, pls. 5, 6; 1955:178, pls. 38, 39; 1983:171, pls. 38, 39.

*Procambarus (Astrocambarus) veracruzianus*.—Hobbs, 1972a:6; 1974b:46, fig. 175.

TYPES.—Holotype, allotype, and morphotype, IBM (male I, female, male II); paratypes, IBM.

TYPE LOCALITY.—Presidio, 30 kilometers (18.8 mi) southeast of Córdoba, Veracruz, Mexico. “Cuenca del río Papaloapan” (Villalobos, 1954b:328).

RANGE.—Known only from the vicinity of Córdoba, Veracruz.

HABITAT.—Streams.

*Procambarus (Astrocambarus) williamsoni* (Ortmann)

FIGURE 222

*Cambarus (Procambarus) williamsoni* Ortmann, 1905d:439, figs. 1–3.

*Procambarus williamsoni*.—Hobbs, 1942a:342 [by implication].

*Procambarus (Astrocambarus) williamsoni*.—Hobbs, 1972a:6; 1974b:46, fig. 179.

TYPES.—Syntypes, CM 74.560 (male I, female, male II), CM 74.561 (male I, female, male II).

TYPE LOCALITY.—Los Amates, Province of Izabal, 6 to 8 kilometers (4 to 5 mi) south of Río Motagua, Guatemala. (Not

"Malagua" as recorded by Ortmann, 1905d:440.)

RANGE.—Known only from the vicinity of the type locality and from Lago Yojoa, Honduras.

HABITAT.—Lentic situations.

***Procambarus (Austrocambarus) zapoapensis* Villalobos, new status**

FIGURE 221

*Procambarus ruthveni zapoapensis* Villalobos, 1954b:347, pls. 11, 12; 1955:202, pls. 44, 45; 1983:192, pls. 44, 45.

*Procambarus ruthveni zapoapensis* Villalobos, 1955:203 [erroneous spelling].

*Procambarus (Austrocambarus) ruthveni zapoapensis*.—Hobbs, 1972a:6; 1974b:46, fig. 178.

TYPES.—Holotype, allotype, and morphotype, IBM (male I, female, male II); paratypes, IBM, USNM.

TYPE LOCALITY.—Zapoapan de Cabaña, 11 kilometers (6.9 mi) southeast of Catemaco, Veracruz, Mexico.

RANGE.—Known only from the vicinity of the type locality.

HABITAT.—Small, rocky streams.

REMARKS.—In the absence of evidence of intergradation between this crayfish and *P. (A.) ruthveni*, it is accorded specific rank herein.

**Subgenus *Capillicambarus* Hobbs**

*Cambarus*.—Ortmann, 1905b:401 [in part].

Subgenus *Cambarus* Ortmann, 1905b:401 [in part].

Subgenus *Ortmannicus* Fowler, 1912:341 [in part, by implication].

*Procambarus*.—Hobbs, 1942a:342 [in part].

Subgenus *Capillicambarus* Hobbs, 1972a:6 [Type species, by original designation, *Cambarus (Cambarus) hinei* Ortmann, 1905b:401. Gender: masculine.]; 1984, fig. 7.

***Procambarus (Capillicambarus) brazoriensis* Albaugh**

FIGURE 231

*Procambarus (Capillicambarus) brazoriensis* Albaugh, 1975:1, figs. 1, 2.

*Procambarus (Capillicambarus) brazorensis*.—Fitzpatrick, 1983b:203 [erroneous spelling].

TYPES.—Holotype, allotype, and morphotype, USNM 133916, 133917, 133918 (male I, female, male II); paratypes, USNM, D.W. Albaugh.

TYPE LOCALITY.—Ditch along County Road 400, 0.1 mile (160 m) southeast of Missouri Pacific railroad and 0.25 mile (0.4 km) southwest of Brazos River at south edge of Brazoria, Brazoria County, Texas.

RANGE.—Brazoria County, Texas between the San Bernard River and Oyster Creek, extending inland from the Gulf of Mexico only about 20 miles (32 km).

HABITAT.—Lentic and sluggish lotic situations.

***Procambarus (Capillicambarus) hinei* (Ortmann)**

FIGURE 230

*Cambarus (Cambarus) hinei* Ortmann, 1905b:401, fig. 1.

*Cambarus hinei*.—Cary and Spaulding, 1909:11 [erroneous spelling].

*Cambarus (Ortmannicus) hinei*.—Fowler, 1912:341 [by implication].

*Cambarus hinei*.—Faxon, 1914:370.

*Procambarus hinei*.—Hobbs, 1942a:342 [by implication].—Penn, 1953b:63, figs. 1–15.

*Procambarus (Capillicambarus) hinei*.—Hobbs, 1972a:6, figs. 1n, 2c, 6a–g; 1974b:46, fig. 187.—Albaugh, 1973:102, figs. 1, 23–28.

*Procambarus hineyi*.—Huner, Meyers, and Avault, 1976:150 [erroneous spelling].

TYPES.—Syntypes, OSM 443.1 (male I), OSM 443.2 (female), OSM 444.1 (female), OSM 444.2 (female), USNM 98355 (male I, female).

TYPE LOCALITY.—One-fourth mile (0.3 km) from Gulf Beach, near Cameron, Cameron Parish, Louisiana.

RANGE.—Southern Louisiana and east of the Brazos River in southeastern Texas.

HABITAT.—Pools and roadside ditches.

***Procambarus (Capillicambarus) incilis* Penn**

FIGURE 232

*Procambarus incilis* Penn, 1962:222, figs. 1–11.

*Procambarus (Capillicambarus) incilis*.—Hobbs, 1972a:6; 1974b:47, fig. 188.

*Procambarus incillis*.—Albaugh, 1975:7 [erroneous spelling].

TYPES.—Holotype, allotype, and morphotype, USNM 106794, 106795, 106796 (male I, female, male II); paratypes, USNM, TU.

TYPE LOCALITY.—7.5 miles (12 km) east of Edna, Jackson County, Texas.

RANGE.—Southeastern Texas in Jackson, Matagorda, and Wharton counties.

HABITAT.—Roadside ditches.

**Subgenus *Girardiella* Lyle**

*Cambarus*.—Bundy, 1876:5 [in part].

Subgenus *Cambarus*.—Ortmann, 1905c:101 [in part].

Subgenus *Ortmannicus*.—Fowler, 1912:341 [by implication, in part].

Subgenus *Girardiella* Lyle, 1938:76 [Type species, by monotypy, *Cambarus Hagenianus* Faxon, 1884:141. Gender: feminine.].—Hobbs, 1972a:6; 1984, fig. 6.—Fitzpatrick, 1978b:57, figs. 1–121.

*Procambarus*.—Hobbs, 1942a:342 [by implication, in part].

***Procambarus (Girardiella) barbiger* Fitzpatrick**

FIGURE 246

*Cambarus (Girardiella) hagenianus forestae* Lyle, 1938:76 [nomen nudum].

*Procambarus hagenianus*.—Fitzpatrick, 1968b:37 [in part].

*Procambarus (Girardiella) hagenianus*.—Hobbs, 1972b:47 [in part].

*Procambarus (Girardiella) sp. B*.—Fitzpatrick, 1976a:385, figs. 1b, 2b [by implication].

*Procambarus (Girardiella) barbiger* Fitzpatrick, 1978b:69, figs. 37–52, 109–121.

*Cambarus (Girardiella) hagenianus forrestae*.—Fitzpatrick, 1978b:69 [erroneous spelling].

*[Procambarus] h[agenianus] forrestae*.—Fitzpatrick, 1978b:73 [erroneous spelling].

*[Procambarus] barbiger*.—Stewart, 1986:15, unnumbered fig.

TYPES.—Holotype and allotype, USNM 146258, 146259 (male I, female); paratypes, USNM.

TYPE LOCALITY.—Forest, Scott County, Mississippi.

RANGE.—Known only from the Jackson Prairie area, chiefly in Newton and Scott counties, Mississippi.

HABITAT.—Burrows (primary burrower).

***Procambarus (Girardiella) cometes* Fitzpatrick**

FIGURE 244

*Procambarus (Girardiella) hagenianus*.—Hobbs, 1972b:47 [in part].

*Procambarus (Girardiella)* sp. E.—Fitzpatrick, 1976a:385, fig. 1e, 2e [by implication].

*Procambarus (Girardiella) cometes* Fitzpatrick, 1978b:74, figs. 53–71, 109–121.

*P[rocambarus] cometes*.—Stewart, 1986:15.

TYPES.—Holotype, allotype, and morphotype, USNM 130227, 146260, 131280 (male I, female, male II); paratypes, USNM.

TYPE LOCALITY.—Field behind Luxury Mobile Homes (SW ¼ Sec. 3, T. 18N, R. 14E), Starkville, Oktibbeha County, Mississippi.

RANGE.—Lowndes and Oktibbeha counties, Mississippi.

HABITAT.—Burrows (primary burrower).

***Procambarus (Girardiella) connus* Fitzpatrick**

FIGURE 243

*Procambarus hagenianus*.—Fitzpatrick, 1968b:37 [in part].

*Procambarus (Girardiella) hagenianus*.—Hobbs, 1972b:47 [in part].

*Procambarus (Girardiella)* sp. C.—Fitzpatrick, 1976a:385, figs. 1c, 2c [by implication].

*Procambarus (Girardiella) connus* Fitzpatrick, 1978b:76, figs. 72–90, 109–121.

*Procambarus (Girardiella) connos*.—Fitzpatrick, 1978b:57 [erroneous spelling].

*P[rocambarus] connus*.—Stewart, 1986:15.

TYPES.—Holotype, allotype, and morphotype, USNM 146261, 146262, 146263; paratypes, USNM.

TYPE LOCALITY.—Carrollton, Carroll County, Mississippi.

RANGE.—Vicinity of the type locality.

HABITAT.—Burrows (primary burrower).

***Procambarus (Girardiella) curdi* Reimer**

FIGURE 235

*Procambarus* A.—Reimer and Clark, 1974:172, figs. 20–23.

*Procambarus (Girardiella) curdi* Reimer, 1975:22, figs. 1–9.—Hobbs and Robison, 1988:405, figs. 10, 16.

TYPES.—Holotype and allotype, USNM 144250, 144251 (male I, female); paratypes, Rollin D. Reimer.

TYPE LOCALITY.—Navasota River, northeast of Bryan on U.S. Highway 190, Brazos County, Texas.

RANGE.—Navasota and Trinity river watersheds in Texas, and the Red River basin in southwestern Arkansas and

southeastern Oklahoma.

HABITAT.—Lentic and sluggish lotic situations.

***Procambarus (Girardiella) gracilis* (Bundy)**

FIGURE 239

*Cambarus gracilis* Bundy, 1876:5.

*Cambarus gracillis*.—Bundy, 1882:182 [erroneous spelling].

*Cambarus (Cambarus) gracilis*.—Ortmann, 1905c:101.

*Cambarus (Ortmannicus) gracilis*.—Fowler, 1912:341 [by implication].

*Cambarus (Girardiella) gracilis*.—Lyle, 1938:76 [by implication].

*Procambarus gracilis*.—Hobbs, 1942a:342 [by implication].—Williams, 1954:826, figs. 10–18.—Page, 1985b:370, figs. 98–102.—Pflieger, 1987a:22; 1987b:6.

*Procambarus (Girardiella) gracilis*.—Hobbs, 1972a:7, fig. 1k; 1974b:47, fig. 193.—Hobbs III and Rewolinski, 1985:26, figs. 1, 2.

TYPES.—Syntypes, INHS (no longer there), MCZ 3794 (male I, female), MCZ 3454 (male I).

TYPE LOCALITY.—Normal, McLean County, Illinois. (Restricted by Hobbs, 1974b:47).

RANGE.—Wisconsin, Iowa, Illinois, Indiana, Missouri, and perhaps Kansas, Oklahoma, and Texas.

HABITAT.—Burrows (primary burrower).

REMARKS.—As is true of most of the wide-ranging primary burrowers, it is possible, if not probable, that many of the reported localities (particularly those from which first form males are not known) are based on misidentifications.

***Procambarus (Girardiella) hagenianus hagenianus* (Faxon)**

FIGURE 242

*Cambarus advena*.—Hagen, 1870:86–87 [in part: figs. 90–92, 164. The description is of *hagenianus*. The Georgia specimens mentioned are members of *P. (H.) pygmaeus* and *P. (H.) advena*.]

*Cambarus Carolinus*.—Hagen, 1870:31.

*Cambarus carolinus*.—Brocchi, 1875:27.

*Cambarus Hagenianus* Faxon, 1884:141.

*Cambarus hagenianus*.—Hay, 1902c:38.—Faxon, 1914:366, pl. 1, pl. 7: figs. 1a–c, 7.

*Cambarus (Cambarus) hagenianus*.—Ortmann, 1905c:101.

*Cambarus (Ortmannicus) hagenianus*.—Fowler, 1912:341 [by implication].

*Cambarus (Girardiella) hagenianus hagenianus*.—Lyle, 1938:76.

*Procambarus hagenianus*.—Hobbs, 1942a:342 [by implication].

*Procambarus (Girardiella) hagenianus*.—Hobbs, 1972a:7, figs. 2d, 7a–g; 1974b:47, fig. 192.—Fitzpatrick, 1976a:385, figs. 1h, 2h [by implication].

*Procambarus (Girardiella) hagenianus hagenianus*.—Fitzpatrick, 1978b:60, figs. 1–18, 109–121.

*Procambarus hagenianus hagenianus*.—Fitzpatrick, 1983b:198, fig. 193.

TYPES.—Holotype, MCZ 232 (male I).

TYPE LOCALITY.—Given as Charleston, South Carolina, but definitely based on mislabeled specimen.

RANGE.—Cited by Fitzpatrick (1978b:61) as “south and east of Tibbie Creek in the Tombigbee drainage of Lowndes, Noxubee and Oktibbeha counties, Mississippi, and Marengo, Pickens and Sumter counties Alabama . . .”

HABITAT.—Burrows (primary burrower).



***Procambarus (Girardiella) hagenianus vesticeps* Fitzpatrick**

FIGURE 241

*Cambarus (Girardiella) hagenianus evansi* Lyle, 1938:76 [nomen nudum].  
*Procambarus hagenianus*.—Fitzpatrick, 1968b:37 [in part].  
*Procambarus (Girardiella) hagenianus*.—Hobbs, 1972b:47 [in part].  
*Procambarus (Girardiella)* subsp. A.—Fitzpatrick, 1976a:385, figs. 1a, 2a [by implication].  
*Procambarus (Girardiella) hagenianus vesticeps* Fitzpatrick, 1977:372 [nomen nudum]; 1978b:64, figs. 19–36, 109–121.  
*C[ambarus] h[agenianus] evansi*.—Fitzpatrick, 1978b:69.

TYPES.—Holotype, allotype, and morphotype, USNM 146265, 146266, 146267 (male I, female, male II); paratypes, USNM, BMNH.

TYPE LOCALITY.—Egypt, Chickasaw County, Mississippi.

RANGE.—Fitzpatrick (1978b:67) recorded the range as “north of Tibbie Creek in Tombigbee drainage of Chickasaw, Clay, Monroe and Pontotoc counties [Mississippi]” intergrading with the nominate subspecies in Monroe County.

HABITAT.—Burrows (primary burrower).

***Procambarus (Girardiella) liberorum* Fitzpatrick**

FIGURE 240

*Procambarus (Girardiella) liberorum* Fitzpatrick, 1978c:533, figs. 1–14.—Hobbs and Robison, 1988:407, figs. 13, 15.  
*Procambarus liberorum*.—Bouchard and Robison, 1981:28.

TYPES.—Holotype and allotype, USNM 148353, 148354 (male I, female); paratypes, USNM.

TYPE LOCALITY.—Yard at 206 S.W. Seventh Street, Bentonville, Benton County, Arkansas.

RANGE.—Known only from the Arkansas River basin from Benton and Washington to Pope and Yell counties, Arkansas.

HABITAT.—Burrows (primary burrower).

***Procambarus (Girardiella) parasimulans* Hobbs and Robison**

FIGURE 237

*Procambarus (Girardiella) parasimulans* Hobbs and Robison, 1982:545, fig. 1; 1988:407, figs. 8, 16.

TYPES.—Holotype, allotype, and morphotype, USNM 177698, 177699, 177700 (male I, female, male II); paratypes, USNM.

TYPE LOCALITY.—Unnamed tributary to Prairie Bayou, 10.2 miles (16.3 km) east of Bismarck on State Route 84 (Sec. 35, T. 4S, R. 19W), Hot Spring County, Arkansas.

RANGE.—Arkansas, Ouachita, and Red river basins in southwestern Arkansas.

HABITAT.—Lentic and sluggish lotic situations and burrows.

***Procambarus (Girardiella) pogum* Fitzpatrick**

FIGURE 245

*Cambarus (Girardiella) hagenianus carri* Lyle, 1938:76 [nomen nudum].  
*Procambarus hagenianus*.—Hobbs, 1968b:K25, fig. 19c.

*Procambarus (Girardiella) hagenianus*.—Hobbs, 1972b:47 [in part].  
*Procambarus (Girardiella)* sp. D.—Fitzpatrick, 1976a:385, figs. 1d, 2d [by implication].

*Procambarus (Girardiella) pogum* Fitzpatrick, 1978b:83, figs. 91–121.

*Procambarus poqum*.—Stewart, 1986:15 [erroneous spelling].

TYPES.—Holotype, allotype, and morphotype, USNM 146270, 146271, 146272 (male I, female, male II); paratypes, USNM.

TYPE LOCALITY.—Houston, Chickasaw County, Mississippi.

RANGE.—Known only from the Houlika-Tibbie Creek basin in Chickasaw County, Mississippi.

HABITAT.—Burrows (primary burrower).

***Procambarus (Girardiella) regiomontanus* Villalobos**

FIGURE 238

*Procambarus simulans regiomontanus* Villalobos, 1954a:289, pls. 1, 2; 1955:47, pls. 9, 10; 1983:51, pls. 9, 10.—Campos, 1982:18, photographs 1–18.

*Procambarus simulans regimontanus*.—Hobbs, 1966b:70 [erroneous spelling].  
*Procambarus (Girardiella) simulans regiomontanus*.—Hobbs, 1972a:7; 1974b:47, fig. 191.

*Procambarus (Girardiella) regiomontanus*.—Hobbs and Robison, 1988:398, fig. 6.

TYPES.—Holotype, allotype, and morphotype, IBM (male I, female, male II); paratypes, IBM, USNM.

TYPE LOCALITY.—Five kilometers (3.1 mi) north of Monterrey, Nuevo León, Mexico.

RANGE.—Known only from Nuevo León and Tamaulipas provinces, Mexico.

HABITAT.—Lentic and lotic situations and burrows.

REMARKS.—This taxon was elevated by Hobbs and Robison (1988) to specific rank for, on the basis of present data, there is no evidence that it intergrades with *P. (G.) simulans*.

***Procambarus (Girardiella) reimeri* Hobbs**

FIGURE 236

*Procambarus (Girardiella) reimeri* Hobbs, 1979:804, fig. 1.—Hobbs and Robison, 1988:409, figs. 11, 16.

*Procambarus reimeri*.—Bouchard and Robison, 1981:26.

TYPES.—Holotype, allotype, and morphotype, USNM 14880, 14881, 14882 (male I, female, male II); paratypes, USNM.

TYPE LOCALITY.—Roadside ditch about 5 miles (8 km) northeast of Mena on unnumbered road to Irons Fork River, Polk County, Arkansas.

RANGE.—Known only from the Ouachita River basin in Polk county, Arkansas.

HABITAT.—Burrows and temporary pools.

***Procambarus (Girardiella) simulans* (Faxon)**

FIGURE 234

*Cambarus simulans* Faxon, 1884:112; 1885a:48, pl. I: fig. 2, pl. VIII: figs. 3, 3', 3a, 3a'.

*Cambarus similans*.—Ortmann, 1892:12 [erroneous spelling].  
*Cambarus gallinus* Cockerell and Porter, 1900:434, fig. 1. [Syntypes, MCZ 7342 (3 male II), USNM 23915 (male II, 2 female), USNM 23916 (male I, female), USNM 129197 (2 male II, 2 female), ANSP 1455 (2 female), ANSP 1456 (male I). Type locality, Gallinas River at Las Vegas, New Mexico.]  
*Cambarus gallinas*.—Harris, 1900:264 [erroneous spelling].  
*Cambarus baumgartneri* Harris, 1901:115 [nomen nudum].  
*Cambarus (Cambarus) similans*.—Ortmann, 1905c:101.  
*Cambarus (Ortmannicus) similans*.—Fowler, 1912:341 [by implication].  
*Procamburus similans*.—Hobbs, 1942a:342 [by implication].  
*Cambarus simulana*.—Villalobos, 1953:368 [erroneous spelling].  
*Procamburus simulans simulans*.—Villalobos, 1954a:296.  
*Procamburus (Girardiella) simulans simulans*.—Hobbs, 1972a:7; 1974b:47, fig. 190.  
*Procamburus stimulans*.—Airaksinen, Calkama, and Lindqvist, 1978:354 [erroneous spelling].  
*Procamburus (Girardiella) simulans*.—Hobbs and Robison, 1988:409, figs. 9, 16.

TYPES.—Syntypes, MCZ 3646 (male I, 4 female), MCZ 3647 (23 male II, 30 female, 4 juv. male, 5 juv. female), USNM 4150 (male I, 3 male II, 5 juv. male), ZIAS 1/44975 (2 male, female). Three second form male syntypes (MCZ 7342) could not be located.

TYPE LOCALITY.—Dallas, Texas.

RANGE.—New Mexico, Texas, Louisiana, Oklahoma, Kansas, Arkansas(?), and Colorado.

HABITAT.—Lentic and lotic situations, and burrow (secondary burrower).

REMARKS.—The range of this crayfish is by no means clearly defined. Further study, particularly of first form males, throughout the recorded range is badly needed.

### *Procamburus (Girardiella) tulaneii* Penn

FIGURE 233

*Procamburus tulaneii* Penn, 1953a:163, figs. 1–12.  
*Procamburus (Girardiella) tulaneii*.—Hobbs, 1972a:7; 1974b:48, fig. 189.—Hobbs and Robison, 1988:410, figs. 7, 15.

TYPES.—Holotype, allotype, and morphotype, USNM 93655, 93656, 79928 (male I, female, male II); paratypes, USNM, TU, La. Polytechnic Inst.

TYPE LOCALITY.—Tributary of Bayou D'Arbonne, 4 miles (6.4 km) west of Dubach on State Route 288, Lincoln Parish, Louisiana.

RANGE.—Drainage systems of Arkansas, Ouachita, and Red rivers in Louisiana and Arkansas, and the lower Arkansas River basin in Arkansas.

HABITAT.—Lentic and lotic situations, and burrows (secondary burrower).

### Subgenus *Hagenides* Hobbs

*Astacus*.—LeConte, 1856:402 [in part].  
*Cambarus*.—Hagen, 1870:87 [in part].  
 Subgenus *Cambarus* Ortmann, 1905c:97 [in part].  
 Subgenus *Ortmannicus* Fowler, 1912:341 [in part].

*Procamburus*.—Hobbs, 1942a:342 [by implication].  
 Subgenus *Hagenides* Hobbs, 1972a:7 [Type species, by original designation, *Astacus advena* LeConte, 1856:402. Gender: masculine.]; 1984, fig. 8.

### *Procamburus (Hagenides) advena* (LeConte)

FIGURE 247

*Astacus advena* LeConte, 1856:402.  
*Cambarus Carolinus*.—Hagen, 1870:31, 87–88 [latter in part], pl. 1: figs. 51–54, pl. 3: fig. 165.  
*Cambarus advena*.—Hagen, 1870:87, pl. 3: fig. 164, pl. 7.—Faxon, 1884:140.  
*Cambarus (Cambarus) advena*.—Ortmann, 1905c:101.  
*Cambarus (Ortmannicus) advena*.—Fowler, 1912:341 [by implication].  
*Procamburus advena*.—Hobbs, 1942a:342 [in part].  
*Procamburus (Hagenides) advena*.—Hobbs, 1972a:7 [in part]; 1974b:48 [in part], fig. 194; 1981:311, figs. 17f, 118a, 119–121, 235.

TYPES.—Syntypes, MCZ 3379 (female), ANSP 321 (female).

TYPE LOCALITY.—“Georgia inferiore.” Restricted to 2.5 miles (4 km) west of Riceboro, Liberty County, Georgia, by Hobbs, 1974b:48.

RANGE.—Lower coastal plain of Georgia, between Savannah and Altamaha rivers.

HABITAT.—Burrows (primary burrower).

REMARKS.—As pointed out by Faxon (1884:140), the descriptions of *P. advena* and *C. carolinus* were transposed in Hagen's monograph, and pl. 1: figs. 51–54 and pl. 3: fig. 165 are actually of *P. advena*. (See Hobbs, 1981:311–312 for a detailed bibliography and explanation).

### *Procamburus (Hagenides) caritus* Hobbs

FIGURE 249

*Procamburus advena*.—Hobbs, 1942b:77 [in part].  
*Procamburus (Hagenides) caritus* Hobbs, 1981:319, figs. 118b, 122, 123.

TYPES.—Holotype, allotype, and morphotype, USNM 117598, 133678, and 116952; paratypes, USNM.

TYPE LOCALITY.—Seepage area, 3.7 miles (5.9 km) west of Glenwood, Wheeler County, Georgia, on U.S. Highway 280.

RANGE.—Altamaha and Satilla watersheds in the coastal plain of Georgia.

HABITAT.—Burrows (primary burrower).

### *Procamburus (Hagenides) geodytes* Hobbs

FIGURE 250

*Cambarus advena geodytes* Hobbs, 1937:154 [nomen nudum].  
*Procamburus geodytes* Hobbs, 1942b:80, figs. 61–65, 276–285.  
*Procamburus (Hagenides) geodytes*.—Hobbs, 1972a:7; 1974b:48, figs. 195, 196b [latter labeled *P. (H.) pygmaeus*].  
*Procamburus (Hagenides) pygmaeus*.—Hobbs, 1974b, fig. 196b.

TYPES.—Holotype and allotype, USNM 81279 (male I, female); “morphotype,” USNM 81280 (male II); paratypes, MCZ, USNM, UF (now in USNM), FSBC.

TYPE LOCALITY.—Orange Springs in the northeastern part

of Marion County, Florida (Sec. 2, T. 12S, R. 23E); found in burrows near the springs.

RANGE.—Along the St. Johns River and its tributaries from Putnam County south to Seminole County, Florida.

HABITAT.—Burrows in flatwoods, seepage areas, and in vicinities of springs (primary burrower).

***Procambarus (Hagenides) pygmaeus* Hobbs**

FIGURE 251

*Procambarus pygmaeus* Hobbs, 1942b:83, figs. 66–70, 296–304.

*Procambarus (Hagenides) pygmaeus*.—Hobbs, 1972a:7; 1974b:48, fig. 196a,c–g [not b, which is *P. (H.) geodytes*]; 1981:324, figs. 17c, 102, 118c, 124, 237.

TYPES.—Holotype, allotype, and “morphotype,” USNM 81285 (male I, female, male II); paratypes, MCZ, USNM, FSBC.

TYPE LOCALITY.—Roadside ditch 15.7 miles (25.1 km) north of Fargo on State Route 89, Clinch County, Georgia.

RANGE.—From the Savannah River southward to Putnam County, Florida, and in the panhandle of the latter in Gulf, Liberty, Leon, and Wakulla counties.

HABITAT.—Lentic and lotic situations and burrows (secondary burrower).

***Procambarus (Hagenides) rogersi campestris* Hobbs**

FIGURE 253

*Procambarus rogersi campestris* Hobbs, 1942b:90, figs. 81–85; 1945a:255, figs. 3, 4, 7, 16, 18, 21, 24.

*Procambarus (Hagenides) rogersi campestris*.—Hobbs, 1972a:7; 1974b:49, fig. 198.

TYPES.—Holotype, allotype, and “morphotype,” USNM 79384 (male I, female, male II); paratypes, MCZ, USNM.

TYPE LOCALITY.—About 12 miles (19.2 km) south of Tallahassee, Leon County, Florida (Sec. 16–17, T. 2S, R. 2W).

RANGE.—Leon and Wakulla counties, Florida.

HABITAT.—Burrows in flatwoods and seepage areas (primary burrower).

***Procambarus (Hagenides) rogersi expletus* Hobbs and Hart**

FIGURE 254

*Procambarus rogersi expletus* Hobbs and Hart, 1959:179, figs. 27–39.

*Procambarus (Hagenides) rogersi expletus*.—Hobbs, 1972a:7; 1974b:49, fig. 199.

TYPES.—Holotype, allotype, and morphotype, USNM 102125, 102127, 102126 (male I, female, male II); paratypes, USNM.

TYPE LOCALITY.—Seepage slope, 0.9 mile (1.4 km) north of Clarksville, Calhoun County, Florida, on State Route 73 (Sec. 25, T. 1N, R. 10W).

RANGE.—Known only from the type locality.

HABITAT.—Burrows in flatwoods and seepage areas (primary burrower).

***Procambarus (Hagenides) rogersi ochlocknensis* Hobbs**

FIGURE 252

*Procambarus rogersi ochlocknensis* Hobbs, 1942b:89, figs. 76–80; 1945a:252, figs. 1, 10, 11, 13, 15, 19, 20, 26.

*Procambarus rogersi ochlocknensis*.—Hobbs III, 1969:25 [erroneous spelling].

*Procambarus (Hagenides) rogersi ochlocknensis*.—Hobbs, 1972a:7; 1974b:49, 197.

*Procambarus (Hagenides) rogersi ochlocknensis*.—Hobbs, 1974b, fig. 197 [erroneous spelling].

TYPES.—Holotype, allotype, and “morphotype,” USNM 79383 (male I, female, male II); paratypes, MCZ, USNM.

TYPE LOCALITY.—7.3 miles (11.7 km) west of Quincy, on U.S. Highway 90, Gadsden County, Florida (Sec. 1, T. 2N, R. 5W).

RANGE.—Ochlockonee River basin in Gadsden and Liberty counties, Florida.

HABITAT.—Burrows in seepage areas (primary burrower).

***Procambarus (Hagenides) rogersi rogersi* (Hobbs)**

FIGURE 255

*Cambarus rogersi* Hobbs, 1938a:62, figs. 1–11.

*Procambarus rogersi*.—Hobbs, 1942a:344.

*Procambarus rogersi rogersi*.—Hobbs, 1942b:89, figs. 71–75.

*Procambarus (Hagenides) rogersi rogersi*.—Hobbs, 1972a:7; 1974b:49, fig. 200.

TYPES.—Holotype, allotype, and “morphotype,” USNM 75120, 75121, 75589 (male I, female, male II); paratypes, MCZ, USNM.

TYPE LOCALITY.—Flatwoods, 4 miles (6.4 km) north of Blountstown on State Route 76 (71, old number), Calhoun County, Florida (Sec. 14, T. 1N, R. 9W).

RANGE.—Eastern Calhoun County, Florida.

HABITAT.—Burrows in flatwoods and seepage areas (primary burrower).

***Procambarus (Hagenides) talpoides* Hobbs**

FIGURE 248

*Cambarus advena*.—Hagen, 1870:87 [in part].

*Procambarus advena*.—Hobbs, 1942b:73–80 [in part], figs. 56–60.

*Procambarus (Hagenides) advena*.—Hobbs, 1972b:50, 150, 154 [in part]; 1974b:48 [in part].

*Procambarus (Hagenides) talpoides* Hobbs, 1981:329, figs. 17e, 118d,e, 120, 125–127, 238.

TYPES.—Holotype, allotype, and morphotype, USNM 115002, 115018, and 133347; paratypes, USNM.

TYPE LOCALITY.—Burrows along Hogtown Creek just southwest of the junction of 13th (U.S. Highway 441) and Boundary streets in Gainesville, Alachua County, Florida.



RANGE.—Coastal plain from the Satilla River system westward to Tift County, Georgia, and southward to Thomas County, Georgia, and Alachua and Putnam counties, Florida; also present on Cumberland Island, Camden County, Georgia.

HABITAT.—Burrows (primary burrower).

*Procambarus (Hagenides) truculentus* Hobbs

FIGURE 256

*Procambarus truculentus* Hobbs, 1954a:111, figs. 1-13.

*Procambarus Truculentus*.—Hobbs, 1954a:111.

*Procambarus (Hagenides) truculentus*.—Hobbs, 1972a:7; 1974b:49, fig. 201; 1981:337, figs. 17b, 118f, 120, 128, 129, 239.

TYPES.—Holotype, allotype, and morphotype, USNM 95670, 95671, 95672 (male I, female, male II); paratypes, MCZ, TU, USNM.

TYPE LOCALITY.—Seepage area 11 miles (17.6 km) north of Lyons on U.S. Highway 1, Emanuel County, Georgia.

RANGE.—Upper Coastal Plain between the Oconee and Ogeechee rivers in Georgia.

HABITAT.—Burrows in flatwoods and seepage areas (primary burrower).

Subgenus *Leonticambarus* Hobbs

*Astacus*.—LeConte, 1856:401 [in part].

*Cambarus*.—Hagen, 1870:16 [in part].

Subgenus *Cambarus*.—Ortmann, 1905c:97 [in part].

Subgenus *Ortmannicus* Fowler, 1912:341 [in part].

Genus *Procambarus*.—Hobbs, 1942a:342.

Subgenus *Ortmannicus*.—Hobbs, 1942a:342 [in part, erroneous spelling].

Subgenus *Leonticambarus* Hobbs, 1972a:7 [Type species, by original designation, *Cambarus barbatus* Faxon, 1890:621. Gender: masculine.]; 1984, fig. 6.

*Procambarus (Leonticambarus) alleni* (Faxon)

FIGURE 257

*Cambarus Alleni* Faxon, 1884:110; 1885a:35, pl. 1: fig. 1, pl. 8: figs. 2, 2'.

*Cambarus alleni*.—Faxon, 1890:619.

*Cambarus (Cambarus) alleni*.—Ortmann, 1905c:102.

*Cambarus (Ortmannicus) alleni*.—Fowler, 1912:341 [by implication].—Creaser, 1934b:4 [by implication].

*Procambarus alleni*.—Hobbs, 1942a:342 [by implication]; 1942b:69, figs. 51-55.

*Procambarus allenti*.—Bovbjerg, 1956:612 [erroneous spelling].

*Procambarus allenii*.—Gifford, 1962:209.

*Procambarus (Leonticambarus) alleni*.—Hobbs, 1972a:8; 1974b:49, fig. 202.

TYPE.—Holotype, MCZ 3531 (male I).

TYPE LOCALITY.—St. Johns River, Hawkinsville, 1 mile (1.6 km) upstream from bridge at Crow's Bluff, between Eustis and Deland), Lake County, Florida.

RANGE.—East of St. Johns River and all of peninsular Florida in and south of Levy and Marion counties; also present on some of the Keys.

HABITAT.—Lentic and lotic situations and burrows.

*Procambarus (Leonticambarus) apalachicola* Hobbs

FIGURE 261

*Procambarus apalachicola* Hobbs, 1942b:55, figs. 26-30, 256-265.

*Procambarus (Leonticambarus) apalachicola*.—Hobbs, 1972a:8; 1974b:50, fig. 206.

TYPES.—Holotype and allotype, USNM 81272 (male I, female); "morphotype," USNM 81273 (male II); paratypes, MCZ, USNM.

TYPE LOCALITY.—Roadside ditch, 11.1 miles (17.8 km) west of Beacon Hill on U.S. Highway 98, Bay County, Florida (Sec. 27, T. 5S, R. 13W).

RANGE.—Coastal flatwoods in Bay and Gulf counties, Florida.

HABITAT.—Lentic situations and burrows (secondary burrower).

*Procambarus (Leonticambarus) barbatus* (Faxon)

FIGURE 259

*Astacus penicillatus* LeConte, 1856:401 [not *Astacus penicillatus* Olivier, 1791].

*Cambarus penicillatus*.—Hagen, 1870:16, 53, figs. 93, 94, 149 [not 95 and 96, which are *P. (O.) ancylus*].

*Cambarus barbatus* Faxon, 1890:621 [substitute name; in part].

*Cambarus (Cambarus) barbatus*.—Ortmann, 1905c:102.

*Cambarus (Ortmannicus) barbatus*.—Fowler, 1912:341 [by implication].

*Procambarus barbatus*.—Hobbs, 1942a:340; 1942b:39, figs. 1-5.

*Procambarus (Leonticambarus) barbatus*.—Hobbs, 1972a:8, figs. 1m, 2f, 9a-g; 1974b:50, fig. 204; 1981:342, figs. 18b, 130a,b, 131, 132, 240.

TYPE.—MCZ 279 (male I), designated neotype of *A. penicillatus* LeConte by Hobbs, 1974b:50. Specimens from Flomaton, Alabama, cited by Faxon (1890) and listed as paratypes by him (1914:414) are paratypes of *Procambarus (L.) escambiensis* Hobbs.

TYPE LOCALITY.—"Habitat in fossis Georgiae inferioris" (LeConte, 1856:401). Restricted by Hobbs (1974b:50) to 2.5 miles (4 km) west of Riceboro, Liberty County, Georgia, in pine flatwoods.

RANGE.—In the coastal plain from the Altamaha River in Georgia to the Edisto River in South Carolina.

HABITAT.—Lentic situations and burrows (secondary burrower).

REMARKS.—The type of LeConte's *Astacus penicillatus* is no longer extant. Inasmuch as Hagen (1870) and Faxon (1884, 1885a, 1890, and 1914) confused other species with it, and, in the latter work, Faxon included members of two species in his type series of *C. barbatus* (= *A. penicillatus*), his "Type" was designated the neotype of LeConte's *A. penicillatus* to establish the identity of the latter's species.

*Procambarus (Leonticambarus) capillatus* Hobbs

FIGURE 267

*Procambarus capillatus* Hobbs, 1971b:83, fig. 1.

*Procambarus (Leonticambarus) capillatus*.—Hobbs, 1972a:8; 1974b:50, fig. 211.

TYPES.—Holotype, allotype, and morphotype, USNM 131454, 131455, 131456 (male I, female, male II); paratypes, USNM.

TYPE LOCALITY.—Drainage ditch adjacent to Burnt Corn Creek (Escambia River drainage) on State Route 41 northwest of Brewton, Escambia County, Alabama.

RANGE.—Escambia River basin in Conecuh, Escambia, and Monroe counties, Alabama, and Escambia County, Florida.

HABITAT.—Temporary ponds, pools, and burrows (secondary burrower).

*Procambarus (Leonticambarus) econfinae* Hobbs

FIGURE 262

*Procambarus econfinae* Hobbs, 1942b:49, figs. 16–20, 236–245.

*Procambarus (Leonticambarus) econfinae*.—Hobbs, 1972a:8; 1974b:50, fig. 207.

TYPES.—Holotype, allotype, and “morphotype,” USNM 81276 (male I, female, male II); paratypes, MCZ, USNM, BMNH, FSBC.

TYPE LOCALITY.—Flatwoods in the northern part of Panama City, Bay County, Florida, between railroad and U.S. Highway 231 (Sec. 33, T. 3S, R. 14W).

RANGE.—Environs of Panama City, Bay County, Florida.

HABITAT.—Flatwoods, in ditches and temporary ponds (secondary burrower).

*Procambarus (Leonticambarus) escambiensis* Hobbs

FIGURE 263

*Cambarus barbatus* Faxon, 1890:621 [in part].—Faxon, 1914:414 [in part].

*Procambarus escambiensis* Hobbs, 1942b:46, figs. 11–15, 226–235.

*Procambarus (Leonticambarus) escambiensis*.—Hobbs, 1972a:8; 1974b:51, fig. 208.

TYPES.—Holotype, allotype, USNM 81278 (male I, female), and “morphotype,” USNM 81277 (male II); paratypes, MCZ, USNM, FSBC.

TYPE LOCALITY.—About 100 yards (90 m) east of Perdido River on U.S. Highway 90, Escambia County, Florida (Sec. 10, T. 1S, R. 32W).

RANGE.—Known from the type locality and from Flomaton, Escambia County, Alabama. Reported from the latter as *Cambarus barbatus* by Faxon (1890); specimens listed as paratypes of that species by him (1914), designated paratypes of *P. (L.) escambiensis* by Hobbs (1942:48).

HABITAT.—Temporary bodies of water in flatwoods and floodplains (secondary burrower).

*Procambarus (Leonticambarus) hubbelli* (Hobbs)

FIGURE 269

*Cambarus hubbelli* Hobbs, 1938b:90 [nomen nudum; validated by Hobbs, 1940a:406, fig. 19].

*Procambarus hubbelli*.—Hobbs, 1942a:342; 1942b:67, figs. 46–50.

*Procambarus (Leonticambarus) hubbelli*.—Hobbs, 1972a:8; 1974b:51, fig. 213.

TYPES.—Holotype and allotype, USNM 76593 (male I, female); “morphotype,” USNM 79351 (male II); paratypes, MCZ, USNM, Chas. Mus.

TYPE LOCALITY.—One mile (1.6 km) east of Bonifay on U.S. Highway 90, Holmes County, Florida (Sec. 5, T. 3N, R. 14W).

RANGE.—Choctawhatchee and Yellow river drainages in Alabama and Florida.

HABITAT.—Temporary ponds, pools, and burrows (secondary burrower).

*Procambarus (Leonticambarus) kilbyi* (Hobbs)

FIGURE 268

*Cambarus kilbyi* Hobbs, 1940a:410, fig. 20.

*Procambarus kilbyi*.—Hobbs, 1942a:343; 1942b:64, figs. 41–45.—Caine, 1974:10, figs. 1d, 4d, 5a.

*Procambarus (Leonticambarus) kilbyi*.—Hobbs, 1972a:8; 1974b:51, fig. 212.

TYPES.—Holotype, allotype, and “morphotype,” USNM 76594 (male I, female, male II); paratypes, MCZ, USNM, FSBC.

TYPE LOCALITY.—Seven miles (11.2 km) northwest of Blountstown on State Route 71 (6, old number), Calhoun County, Florida (Sec. 3, T. 1N, R. 9W).

RANGE.—Coastal flatwoods from Calhoun and Gulf counties east and south to Levy County, Florida.

HABITAT.—Temporary ponds, pools, and burrows (secondary burrower).

*Procambarus (Leonticambarus) latipleurum* Hobbs

FIGURE 260

*Procambarus latipleurum* Hobbs, 1942b:52, figs. 21–25, 246–255.

*Procambarus (Leonticambarus) latipleurum*.—Hobbs, 1972a:8; 1974b:51, fig. 205.

TYPES.—Holotype, allotype, and “morphotype,” USNM 81281 (male I, female, male II); paratypes, MCZ, USNM, UF (now in USNM), FSBC.

TYPE LOCALITY.—5.8 miles (9.3 km) west of Wewahitchka on State Route 22 (52, old number), Gulf County, Florida (Sec. 18, T. 4S, R. 10W).

RANGE.—Gulf County, Florida, north of the Wetappo Canal.

HABITAT.—Temporary ponds, pools, and burrows (secondary burrower).

*Procambarus (Leonticambarus) milleri* Hobbs

FIGURE 258

*Procambarus milleri* Hobbs, 1971c:115, figs. 1–11, 16.

*Procambarus (Leonticambarus) milleri*.—Hobbs, 1972a:8; 1974b:51, fig. 203.—Hobbs, Hobbs, and Daniel, 1977:121, fig. 5.

TYPES.—Holotype and morphotype, USNM 131257,

131258 (male I, male II); paratypes, USNM.

TYPE LOCALITY.—Well at Little Bird Nursery and Garden Store at 8427 Bird Road, Miami, Dade County, Florida (Sec. 15, T. 54S, R. 40E).

RANGE.—Known only from the type locality.

HABITAT.—Subterranean waters.

*Procambarus (Leonticambarus) pubischelae deficiens*  
Hobbs

FIGURE 265

*Procambarus pubischelae* Hobbs, 1942b:43 [in part].

*Procambarus (Leonticambarus) pubischelae*.—Hobbs, 1974b:82 [in part].

*Procambarus (Leonticambarus) pubischelae deficiens* Hobbs, 1981:356, figs. 18d, 132, 135, 241.

TYPES.—Holotype, allotype, and morphotype, USNM 133315, 133316, 133317 (male I, female, male II); paratypes, USNM.

TYPE LOCALITY.—Roadside ditch, 3 miles (4.8 km) south of Baxley, Appling County, Georgia.

RANGE.—Coastal plain of Georgia between the Ocmulgee-Altamaha and Satilla rivers (one locality situated immediately north of the Altamaha River in Montgomery County); intergrading with the nominate subspecies in the extreme upper and lower Satilla and in the upper Suwannee basins.

HABITAT.—Lentic and sluggish lotic situations and burrows (secondary burrower).

*Procambarus (Leonticambarus) pubischelae pubischelae*  
Hobbs

FIGURE 264

*Procambarus pubischelae* Hobbs, 1942b:41, figs. 6–10, 216–225 [in part].

*Procambarus pubischelae*.—Villalobos, 1955:38 [erroneous spelling].

*Procambarus (Leonticambarus) pubischelae*.—Hobbs, 1972a:8 [in part]; 1974b:52 [in part], fig. 209.

*Procambarus (Leonticambarus) pubischelae pubischelae*.—Hobbs, 1981:350, figs. 18c, 130c,d, 132–134, 242.

TYPES.—Holotype, allotype, and “morphotype,” USNM 81284 (male I, female, male II); paratypes, MCZ, ANSP, USNM.

TYPE LOCALITY.—Cypress ponds and roadside ditch 9.4 miles (15 km) north of Lake City on U.S. Highway 441, Columbia County, Florida (Sec. 17, T. 2S, R. 17E).

RANGE.—From the Satilla River in Georgia south to Alachua and Flagler counties, Florida; intergrading with *Procambarus (L.) pubischelae deficiens* in the extreme upper and lower Satilla and in the upper Suwannee basins.

HABITAT.—Lentic and sluggish lotic situations and burrows (secondary burrower).

*Procambarus (Leonticambarus) rathbunae* (Hobbs)

FIGURE 266

*Cambarus rathbunae* Hobbs, 1940a:414, fig. 21.

*Procambarus rathbunae*.—Hobbs, 1942a:344; 1942c:59, figs. 31–35.

*Procambarus (Leonticambarus) rathbunae*.—Hobbs, 1972a:8; 1974b:52, fig. 210.

TYPES.—Holotype, allotype, and “morphotype,” USNM 76595 (male I, female, male II); paratypes, MCZ, USNM, FSBC, BMNH.

TYPE LOCALITY.—Near the Yellow River at Milligan, Okaloosa County, Florida, at the intersection of U.S. Highway 90 and State Route 4 (Sec. 22, T. 3N, R. 24W).

RANGE.—Okaloosa and Holmes counties, Florida.

HABITAT.—Temporary bodies of water and burrows (secondary burrower).

*Procambarus (Leonticambarus) shermani* Hobbs

FIGURE 270

*Procambarus shermani* Hobbs, 1942b:61, figs. 36–40, 266–275.

*Procambarus (Leonticambarus) shermani*.—Hobbs, 1972a:8; 1974b:52, 214.

TYPES.—Holotype and “morphotype,” USNM 81287 (male I, male II); allotype, USNM 81288 (female); paratypes, MCZ, USNM, FSBC, BMNH.

TYPE LOCALITY.—About 12 miles (19 km) southwest of Jay, Santa Rosa County, Florida, in the Escambia River swamp along McCaskill's Mill Creek (Sec. 28, 31, T. 5N, R. 30W).

RANGE.—From the Escambia River drainage in Florida westward to the Pearl River basin in Mississippi and Louisiana.

HABITAT.—Streams, sloughs, and burrows.

Subgenus *Lonnbergius* Hobbs

*Cambarus*.—Lönnerberg, 1894:125 [in part].

Subgenus *Cambarus*.—Ortmann, 1905c:97 [in part].

Subgenus *Ortmannicus* Fowler, 1912:341 [in part].

*Procambarus*.—Hobbs, 1942a:342 [in part].

Subgenus *Lonnbergius* Hobbs, 1972a:8 [Type species, by original designation, *Cambarus acherontis* Lönnerberg, 1894:125. Gender: masculine.]; 1984, fig. 7.

*Procambarus (Lonnbergius) acherontis* (Lönnerberg)

FIGURE 271

*Cambarus acherontis* Lönnerberg, 1894:125; 1895:6, figs. 1–5b.—Hobbs, 1940a:390, fig. 15a–k.

*Cambarus archerontis*.—Hay, 1902b:437 [erroneous spelling].

*Cambarus (Cambarus) acherontis*.—Ortmann, 1905c:102.

*Cambarus (Ortmannicus) acherontis*.—Fowler, 1912:341 [by implication].

*Procambarus acherontis*.—Hobbs, 1942a:342 [by implication]; 1942b:91, figs. 86–90.

*Procambarus (Lonnbergius) acherontis*.—Hobbs, 1972a:8, figs. 2g, 10a–g; 1974b:52, fig. 215.—Hobbs, Hobbs, and Daniel, 1977:122, fig. 56.—Franz and Lee, 1982:58.

TYPE.—Holotype, ZIAS 1/4412 (1 specimen).

TYPE LOCALITY.—Subterranean rivulet about 42 feet (12.6 m) from surface, near Lake Brantley, Seminole County, Florida (probably Sec. 3, T. 21S, R. 29E); these co-ordinates were furnished by R. Franz who searched the tax records of the property of Mr. A.E. Sjoblom on which the well mentioned by



Lönnberg was situated).

RANGE.—Known from only one locality in Orange County, Florida, and three in Seminole County, Florida (see Franz and Lee, 1982).

HABITAT.—Springs and underground streams.

REMARKS.—Hobbs (1940a:393), endeavoring to clarify the confusion engendered by Faxon as to the identity of the species (see *P. (O.) lucifugus lucifugus*) and believing that both of Lönnberg's types were lost, designated neotypes from the Palm Springs locality. Dr. Y. Starobogatov kindly has informed me that one of Lönnberg's specimens is still extant (see above); thus, the neotype designation should be rejected.

### Subgenus *Mexicambarus* Hobbs

*Cambarus*.—Ortmann, 1909:159.

Subgenus *Cambarus*.—Ortmann, 1909:159.

Subgenus *Ortmannicus* Fowler, 1912:341 [in part, by implication].

*Procamburus*.—Hobbs, 1942a:342 [in part, by implication].

Subgenus *Mexicambarus* Hobbs, 1972a:8 [Type species, by original designation, *Cambarus (Cambarus) bouvieri* Ortmann, 1909:159. Gender: masculine.]; 1984, fig. 8.

### *Procamburus (Mexicambarus) bouvieri* (Ortmann)

FIGURE 272

*Cambarus (Cambarus) bouvieri* Ortmann, 1909:159, figs. 1, 2.

*Cambarus (Ortmannicus) bouvieri*.—Fowler, 1912:341 [by implication].

*Cambarus bouvieri*.—Van Straelen, 1942:5.

*Procamburus bouvieri*.—Hobbs, 1942a:342 [by implication].—Villalobos, 1946:224, pl. 2: figs. 1–12; 1955:61, pl. 12; 1983:66, pl. 12.

*Procamburus (Mexicambarus) bouvieri*.—Hobbs, 1972a:9, figs. 2h, 11a–g; 1974b:53, fig. 216.

*procamburus bouvieri*.—Barrera-Mera, 1973:242 [lapsus].

TYPES.—Syntypes, MHNP (2 male I, female), CM 74.864 (male I).

TYPE LOCALITY.—Uruapan, Michoacán, Mexico.

RANGE.—Several localities in the vicinity of Uruapan, Michoacán, Mexico.

HABITAT.—Streams.

REMARKS.—There are two lots of this crayfish in the Smithsonian collection which appear to me to bear erroneous data: one from Valles, San Luis Potosí, Mexico, and the other from Tuxtla Gutierrez, Chiapas, Mexico.

### Subgenus *Ortmannicus* Fowler

*Astacus*.—Harlan, 1830:464.

Subgenus *Cambarus* Erichson, 1846:95 [in part].—Ortmann, 1905c:97 [in part].

*Cambarus*.—Girard, 1852:91 [in part].

Subgenus *Ortmannicus* Fowler, 1912:341 [in part. Type species, by original designation, *Astacus Blandingii* Harlan, 1830:464. Gender: masculine.

*Ortmannicus* is a replacement name for Ortmann's subgenus *Cambarus*.—Hobbs, 1972a:9; 1984, fig. 3.

*Procamburus*.—Hobbs, 1942a:341 [in part].

Subgenus *Ortmannicus*.—Hobbs, 1942a:342 [in part; erroneous spelling].

Subgenus *Ortmannicus*.—Hobbs III, Thorp, and Anderson, 1976:58 [erroneous spelling].

*Procamburus*.—Huner, 1977:10 [erroneous spelling].

*Procambaris*.—Wharton, 1978:46 [erroneous spelling].

### *Procamburus (Ortmannicus) acutissimus* (Girard)

FIGURE 308

*Cambarus acutissimus* Girard, 1852:91.

*Cambarus acutus*.—Most authors prior to 1942 [in part].

*Procamburus blandingii acutus*.—Most authors from 1942 to 1955 [in part].

*Procamburus acutissimus*.—Hobbs, 1955a:98; 1962a:286, fig. 51.

*Procamburus (Ortmannicus) acutissimus*.—Hobbs, 1972a:9; 1974b:53, fig. 246; 1981:366, figs. 15c, 136b, 138a, 139–142, 243.

*Procamburus acutissimus*.—Hart and Hart, 1974:31 [erroneous spelling].

TYPES.—ANSP 309 (2 male II). These specimens could not be located in 1980 or 1985.

TYPE LOCALITY.—Affluent (= tributary to Tombigbee River) of Mobile River, Kemper County, Mississippi.

RANGE.—Tombigbee River basin in Mississippi eastward to the middle Chattahoochee River basin in Georgia.

HABITAT.—Sluggish streams, ponds, and roadside ditches.

### *Procamburus (Ortmannicus) acutus acutus* (Girard)

FIGURE 301

*Cambarus acutus* Girard, 1852:91.

*Astacus Blandingii*.—LeConte, 1856:400 [in part].

*Cambarus acutus* var. A.—Hagen, 1870:36.

*Cambarus acutus* var. B.—Hagen, 1870:36.

*Cambarus blandingii*.—Many authors from 1870 to 1962 [in part].

*Cambarus stygius* Bundy, 1876:3. [Type not extant. Type locality, Lake Michigan at Racine, Racine County, Wisconsin].

*Cambarus Blandingii*, var. *acuta*.—Faxon, 1884:113; 1885a:20, pl. 7: figs. 2, 2', 2'', 2a, 2a'.

*Cambarus Stygius*.—Underwood, 1886:373.

*Cambarus blandingii acutus*.—Faxon, 1890:619.

*Cambarus blandingii blandingii*.—Many authors from 1890 to 1962 [in part].

*Cambarus blandingii* var. *acuta*.—Hay, 1891:147.

*Cambarus blandingii acutus*.—Williamson, 1899:47 [erroneous spelling].

*Cambarus blandingi acutus*.—Ortmann, 1905c:105.

*Cambarus (Cambarus) blandingi acutus*.—Ortmann, 1905c:126 [by implication].—Fleming, 1938:301.

*Cambarus blandingiacutus*.—Harmon, 1910, fig. 2 [lapsus].

*Cambarus (Ortmannicus) blandingii acutus*.—Fowler, 1912:341 [by implication].

*Cambarus (Cambarus) blandingii acutus*.—Fleming, 1938:301.

*Cambarus (Ortmannicus) evictus* Lyle, 1938:76 [nomen nudum].

*Procamburus blandingii acutus*.—Hobbs, 1942a:343 [by implication].

*Procamburus blandingii blandingii*.—Many authors from 1942 to 1962 [in part].—Villalobos, 1959:326 [in part].

*Ortmannicus blandingi acutus*.—Rhoades, 1942:1.

*Cambarus blandingi acutus*.—Roberts, 1944:364 [erroneous spelling].

*Procamburus acutus acutus*.—Hobbs, 1967a:130; 1968b:k-8, figs. 21o, 23d.

*Procamburus acutus*.—Walls and Black, 1967:60. —Pflieger, 1987a:30; 1987b:14.

*Procamburus (Ortmannicus) acutus acutus*.—Hobbs, 1972a:9; 1974b:53, fig. 240; 1981:372, figs. 15b, 136a, 138b, 140, 143–145, 244.

*Procamburus (Ortmannicus) acutus acutus*.—Payne and Riley, 1974:127 [erroneous spelling].

- Procambarus actus*.—Comeaux, 1976:614 [erroneous spelling].  
*Procambarus (Ortmannicus) acutus acutus*.—Hobbs III, Thorp, and Anderson, 1976:58 [erroneous spelling].  
*Procambarus acutus acutus*.—Huner, 1977:10 [erroneous spelling].  
*Procambarus acutus acutus*.—Chea, Avault, and Graves, 1979:349 [erroneous spelling].

TYPES.—Lost in Chicago fire, 1871 (Faxon, 1914:413).

TYPE LOCALITY.—Affluent (= tributary to Tombigbee River) of Mobile River in Kemper County, Mississippi.

RANGE.—Coastal plain and piedmont from Maine to Georgia, from Florida panhandle to Texas, and from Minnesota to Ohio; intergrading with *P. (O.) a. cuevachicae* in southwestern Texas and northern Mexico.

HABITAT.—Sluggish to moderately flowing streams and most lentic situations.

REMARKS.—With little doubt, the populations currently assigned to this subspecies constitute a species complex.

*Procambarus (Ortmannicus) acutus cuevachicae* (Hobbs)

FIGURE 302

- Cambarus blandingii cuevachicae* Hobbs, 1941a:1, fig. 1.  
*Procambarus blandingii cuevachicae*.—Hobbs, 1942a:342.—Villalobos, 1955:70, pls. 13, 14; 1983:72, pls. 13, 14.  
*Procambarus acutus cuevachicae*.—Hobbs, 1966b:70.  
*Procambarus (Ortmannicus) acutus cuevachicae*.—Hobbs, 1972a:9; 1974b:53, fig. 241.

TYPES.—Holotype, allotype, and morphotype, USNM 80030 (male I, female, male II); paratypes, USNM, PM.

TYPE LOCALITY.—La Cueva Chica, a limestone cave about 1.6 kilometers (1.0 mile) northeast of Pujal, San Luis Potosí, Mexico.

RANGE.—Known from the states of Hidalgo, Puebla, San Luis Potosí, Tamaulipas, and Veracruz, Mexico.

HABITAT.—Subterranean and lentic situations.

*Procambarus (Ortmannicus) ancylus* Hobbs

FIGURE 293

- Cambarus penicillatus*.—Hagen, 1870:54 [in part], figs. 95, 96.  
*Procambarus ancylus* Hobbs, 1958a:164, figs. 13–24.  
*Procambarus (Ortmannicus) ancylus*.—Hobbs, 1972a:9; 1974b:54, fig. 233.

TYPES.—Holotype, allotype, and morphotype, USNM 115050 (male I, female, male II); paratypes, USNM.

TYPE LOCALITY.—Summerville, Dorchester County, South Carolina.

RANGE.—In the coastal plain from the Cape Fear River basin in North Carolina southward to the Edisto and Ashepoo basins in Colleton County, South Carolina.

HABITAT.—Lentic and lotic situations and burrows.

*Procambarus (Ortmannicus) angustatus* (LeConte)

FIGURE 282

- Astacus angustatus* LeConte, 1856:401.  
*Cambarus angustatus*.—Hagen, 1870:50, figs. 65–67, 146.

- Cambarus (Cambarus) angustatus*.—Ortmann, 1905c:102.  
*Cambarus (Ortmannicus) angustatus*.—Fowler, 1912:341 [by implication].  
*Procambarus angustatus*.—Hobbs, 1942a:342 [by implication].  
*Procambarus (Ortmannicus) angustatus*.—Hobbs, 1972a:9; 1974b:54, fig. 226; 1981:384, figs. 13c, 148, 149, 245.

TYPE.—Holotype, ANSP 444 (male I); could not be located in 1981.

TYPE LOCALITY.—“Georgia inferiore, in aquae purae rivulos qui inter colliculos arenosos (*sand-hills*) currunt” (LeConte, 1856:402).

RANGE.—Known from the type specimen only. Repeated searches for this species in Georgia have been unsuccessful.

HABITAT.—Streams.

*Procambarus (Ortmannicus) bivittatus* Hobbs

FIGURE 319

- Procambarus bivittatus* Hobbs, 1942b:96, figs. 96–100, 305–314.  
*Procambarus (Ortmannicus) bivittatus*.—Hobbs, 1972a:10; 1974b:54, fig. 255.

TYPES.—Holotype, USNM 81274 (male I); allotype and “morphotype,” USNM 81275 (female, male II); paratypes, MCZ, USNM, FSBC.

TYPE LOCALITY.—Sloughs along Escambia River on State Route 4 (old number 62), Escambia County, Florida (Sec. 9, T. 6N, R. 30W).

RANGE.—From the Escambia River drainage in Escambia and Santa Rosa counties, Florida, to the Pearl River drainage in Pearl River County, Mississippi, and St. Tammany and Washington parishes, Louisiana.

HABITAT.—Streams and sloughs.

*Procambarus (Ortmannicus) blandingii* (Harlan)

FIGURE 300

- Astacus Blandingii* Harlan, 1830:464.  
*Astacus blandingii*.—DeKay, 1844:23.  
*Astacus (Cambarus) Blandingii*.—Erichson, 1846:98.  
*Cambarus Blandingii*.—Girard, 1852:91.  
*Cambarus Blandingii* var. *Blandingii*.—Faxon, 1884:136 [by implication].  
*Cambarus blandingii blandingii*.—Faxon 1890:619 [by implication].  
*Cambarus (Cambarus) blandingii*.—Ortmann, 1905c:102.  
*Cambarus blandingii-typicus*.—Ortmann, 1905c:105.  
*Cambarus (Cambarus) blandingii blandingii*.—Ortmann, 1905c:126 [by implication].  
*Cambarus (Ortmannicus) blandingii*.—Fowler, 1912:341.  
*Procambarus blandingii blandingii*.—Hobbs, 1942a:342 [by implication].  
*Procambarus blandingii*.—Hobbs, 1967a:130.  
*Procambarus (Ortmannicus) blandingii*.—Hobbs, 1972a:9, figs. 2i, 12a–g; 1974b:54, fig. 239.  
*Procambarus a. blandingii*.—Page, 1985b:376 [lapsus calami].

TYPE.—Holotype, ANSP 4177 (male I).

TYPE LOCALITY.—Camden, Kershaw County, South Carolina.

RANGE.—In the coastal plain from the Pee Dee River system in South Carolina and southern North Carolina southward to the Santee River basin in South Carolina.

HABITAT.—Lentic and lotic situations and burrows.

*Procambarus (Ortmannicus) caballeroi* Villalobos

FIGURE 321

*Procambarus caballeroi* Villalobos, 1944b:175, pls. 1, 2; 1955:87, pls. 15, 16; 1959:314, figs. 47–50; 1983:86, pls. 15, 16.

*Procambarus (Ortmannicus) caballeroi*.—Hobbs, 1972a:9; 1974b:54, fig. 257.

TYPES.—Holotype, allotype, and morphotype, IBM 50040(004) (male I, female, male II); paratypes, IBM, USNM.

TYPE LOCALITY.—“Riachuelos del Sur de Villa Juárez,” Puebla, Mexico.

RANGE.—Known only from the vicinity of the type locality.

HABITAT.—Streams.

*Procambarus (Ortmannicus) chacei* Hobbs

FIGURE 275

*Procambarus chacei* Hobbs, 1958b:5, pl. 2: figs. 14–26.

*Procambarus* sp. A.—Hobbs, 1958c:72, 76, 77, 79, 83–86, 90.

*Procambarus (Ortmannicus) chacei*.—Hobbs, 1972a:9; 1974b:55, fig. 219.

?*Procambarus (Ortmannicus) enoplosternum*.—Hobbs, 1981:388 [in part].

TYPES.—Holotype, allotype, and morphotype, USNM 101289, 101290, 101291 (male I, female, male II); paratypes, MCZ, ANSP, IBM, TU, USNM.

TYPE LOCALITY.—Cedar Creek, 3 miles (4.8 km) east of Lykes, Richland County, South Carolina, on U.S. Highway 76.

RANGE.—“From the Wateree River in South Carolina south to the Canoochee River in Georgia” (Hobbs, 1974b:55). The range is in need of further investigation; see “Remarks” below.

HABITAT.—Streams.

REMARKS.—*Procambarus (O.) chacei* was synonymized with *P. (O.) enoplosternum* Hobbs by Hobbs (1981:388); the reasons cited were presented on page 398. On the basis of additional materials from South Carolina, there is reason to question this action; therefore, *P. (O.) chacei* is retained herein tentatively.

*Procambarus (Ortmannicus) delicatus* Hobbs and Franz

FIGURE 291

*Procambarus (Ortmannicus) delicatus* Hobbs and Franz, 1986:509, figs. 1–3d.

TYPES.—Holotype, allotype, USNM 218528, 144848 (male II, female); paratype, USNM.

TYPE LOCALITY.—Alexander Springs, about 5.5 miles (9 km) south of Astor Park, Lake County, Florida (Levy Grant 39, T. 16S, R. 27E; 19°04'50"N, 29°04'30"W).

RANGE.—Known only from the type locality.

HABITAT.—Subterranean waters and spring.

*Procambarus (Ortmannicus) enoplosternum* Hobbs

FIGURE 274

*Procambarus enoplosternum* Hobbs, 1947a:5, figs. 2, 5, 10, 12, 14, 18, 20, 23–25, 32.

?*Procambarus* sp. A.—Hobbs, 1958c:72, 76, 77, 79, 83–86, 90.

*Procambarus enoplosternum*.—Hobbs III, 1969:42 [erroneous spelling].

*Procambarus (Ortmannicus) enoplosternum*.—Hobbs, 1972a:9, 1974b:55, fig. 218; 1981:388, figs. 13e, 137b–d, 138c, 150–154, 246.

*Procambaris enoplosternum*.—Wharton, 1978:46 [erroneous spelling].

TYPES.—Holotype, allotype, and “morphotype,” USNM 82263 (male I, female, male II); paratypes, MCZ, USNM, TU.

TYPE LOCALITY.—Rocky Creek, 6 miles (9.6 km) south of Lyons on U.S. Highway 1, Toombs County, Georgia.

RANGE.—Lower Oconee and Ochopee drainages in Georgia eastward to the Santee River basin in Richland County, South Carolina.

HABITAT.—Streams.

*Procambarus (Ortmannicus) epicyrtus* Hobbs

FIGURE 276

*Procambarus epicyrtus* Hobbs, 1958b:1, pl. 1: figs. 1–13.

*Procambarus* sp. C.—Hobbs, 1958c:72, fig. 17.

*Procambarus (Ortmannicus) epicyrtus*.—Hobbs, 1972a:9; 1974b:55, fig. 220; 1981:398, figs. 13f, 137a, 138d, 155–157, 247.

TYPES.—Holotype, allotype, and morphotype, USNM 101286, 101287, 101288 (male I, female, male II); paratypes, MCZ, ANSP, IBM, TU, USNM.

TYPE LOCALITY.—South Ogeechee Creek, 6.8 miles (10.9 km) south of Sylvania on U.S. Highway 301 (not 306 as cited in Hobbs, 1974b:55), Screven County, Georgia.

RANGE.—Tributaries of the Ogeechee and lower Savannah rivers in southeastern Georgia.

HABITAT.—Streams.

*Procambarus (Ortmannicus) erythropros* Relyea and Sutton

FIGURE 286

*Procambarus (Ortmannicus) erythropros* Relyea and Sutton, 1975b:8, figs. 1, 2.—Hobbs, Hobbs, and Daniel, 1977:124, fig. 57.—Franz and Lee, 1982:59, figs. 2, 6.

*Procambarus erythropros*.—Relyea and Sutton, 1975b:13.

TYPES.—Holotype, allotype, and morphotype, USNM 133471, 133472, 133473 (male I, female, male II); paratypes, USNM, RNHL, BMNH.

TYPE LOCALITY.—Sim's Sink, 1 mile (1.6 km) west of the junction of U.S. Highway 27 and 129, and 0.1 mile (160 m) south of Highway 27, Suwannee County, Florida (Sec. 24, T. 6S, R. 14E).

RANGE.—Known from only four localities, all situated north of the Santa Fe River, east of the Suwannee River, and west of Ichetucknee Springs, Suwannee County, Florida: the type locality and three other sinks.

HABITAT.—Subterranean waters.



*Procambarus (Ortmannicus) evermanni* (Faxon)

FIGURE 297

*Cambarus evermanni* Faxon, 1890:620.*Cambarus (Cambarus) evermanni*.—Ortmann, 1905c:102.*Cambarus (Ortmannicus) evermanni*.—Fowler, 1912:341 [by implication].*Procambarus evermanni*.—Hobbs, 1942a:342 [by implication]; 1942b:107, figs. 111–115.*Procambarus evermani*.—Hobbs III, 1969:37 [erroneous spelling].*Procambarus (Ortmannicus) evermanni*.—Hobbs, 1972a:10; 1974b:55, fig. 237.

TYPE.—Holotype, MCZ 3834 (male I).

TYPE LOCALITY.—Escambia River at Flomaton, Escambia County, Alabama.

RANGE.—In addition to the type locality, known from the Yellow River basin in Santa Rosa County, Florida, to the Pearl River basin in Jackson County, Mississippi.

HABITAT.—Sluggish streams. Specimen from Mississippi dug from simple burrows in drying creek bed.

*Procambarus (Ortmannicus) fallax* (Hagen)

FIGURE 295

*Cambarus fallax* Hagen, 1870:45, figs. 103–105.*Cambarus Fallax*.—Hagen, 1870:45.*Cambarus (Cambarus) fallax*.—Ortmann, 1905c:102.*Cambarus (Ortmannicus) fallax*.—Fowler, 1912:341 [by implication].—Creaser, 1934b:4 [by implication].*Procambarus fallax*.—Hobbs, 1942a:342 [by implication]; 1942b:111, figs. 116–120.*Procambarus (Ortmannicus) fallax*.—Hobbs, 1972a:9; 1974b:55, fig. 235; 1981:416, fig. 14e, 136e, 138e, 156, 164, 248.*Procambaris fallax*.—Wharton, 1978:46 [erroneous spelling].

TYPES.—Syntypes, MCZ 3526 (male I, male II); USNM 63294 (male II, female), formerly in the Boston Society of Natural History.

TYPE LOCALITY.—Florida. Restricted by Hobbs (1974b:55) to St. Johns River at Welaka, Putnam County, Florida.

RANGE.—Tributaries of the Satilla River, Georgia, southward through peninsular Florida.

HABITAT.—Lentic and lotic situations and burrows.

*Procambarus (Ortmannicus) franzi* Hobbs and Lee

FIGURE 287

*Procambarus (Ortmannicus) franzi* Hobbs and Lee, 1976:384, fig. 1.—Franz and Lee, 1982:59, figs. 2, 6.

TYPES.—Holotype, allotype, and morphotype, USNM 146992, 146993, 146994; paratypes, USNM.

TYPE LOCALITY.—Orange Lake Cave, 0.4 mile (0.6 km) south of junction of U.S. Highway 441 and State Route 318 off Highway 411 (Sec. 33/34, T. 12S, R. 21E), Marion County, Florida.

RANGE.—Known only from the type locality and Hell Hole

(Sec. 6, T. 12S, R. 21E), also in Marion County, Florida.  
HABITAT.—Subterranean waters.*Procambarus (Ortmannicus) geminus* Hobbs

FIGURE 305

*Procambarus (Ortmannicus) geminus* Hobbs, 1975:1, fig. 1.*Procambarus geminus*.—Bouchard and Robison, 1981:26.

TYPES.—Holotype, allotype, and morphotype, USNM 145756, 145757, 145758 (male I, female, male II); paratypes, BMNH, USNM, H.W. Robison.

TYPE LOCALITY.—“Roadside pool (perhaps a streambed, but no flow was detected), 1.7 miles [2.7 km] south of Taylor, Columbia County, Arkansas, on State Route 132” (Hobbs, 1975:4–5).

RANGE.—Red River Basin in Columbia, Lafayette, and Miller counties, Arkansas, and Webster and Sabine parishes, Louisiana.

HABITAT.—Lentic and sluggish lotic situations.

*Procambarus (Ortmannicus) gonopodocristatus* Villalobos

FIGURE 324

*Procambarus gonopodocristatus* Villalobos, 1958:279, pls. 1–3; 1959:314, figs. 38–45.*Procambarus (Ortmannicus) gonopodocristatus*.—Hobbs, 1972a:10; 1974b:56, fig. 260.

TYPES.—Holotype, allotype, and morphotype, IBM (male I, female, male II); paratypes, USNM, AMNH.

TYPE LOCALITY.—Paso Largo, 16 kilometers (10 mi) northeast of Martínez de la Torre, Veracruz, Mexico.

RANGE.—Only one other locality known: “María de la Torre, km. 406 de la carretera Martínez de la Torre, Nautla,” Veracruz, Mexico (Villalobos, 1958:287).

HABITAT.—Lentic situations.

*Procambarus (Ortmannicus) hayi* (Faxon)

FIGURE 306

*Cambarus Hayi* Faxon, 1884:108.*Cambarus hayi*.—Hay, 1899b:959.*Cambarus (Cambarus) hayi*.—Ortmann, 1905c:102.*Cambarus (Ortmannicus) hayi*.—Fowler, 1912:341 [by implication].—Creaser, 1934b:4 [by implication].*Procambarus hayi*.—Hobbs, 1942a:342 [by implication].*Procambarus (Ortmannicus) hayi*.—Hobbs, 1972a:9; 1974b:56, fig. 244.*Procambarus layi*.—Hazlett, 1983:187 [erroneous spelling].

TYPES.—Syntypes, MCZ 3533 (male I, 2 male II, female, juv. male), USNM 19751 (male II), USNM 19752 (male II, female), USNM 21850 (2 male I, female).

TYPE LOCALITY.—Macon, Noxubee County, Mississippi.

RANGE.—Tombigbee and Tallahatchie river basins in Alabama and Mississippi, and the Hatchie drainage in Tennessee.

HABITAT.—Sluggish streams and lentic situations.

*Procambarus (Ortmannicus) hirsutus* Hobbs

FIGURE 280

- Procambarus hirsutus* Hobbs, 1958a:160, figs. 1–12.  
*Procambarus* sp. B.—Hobbs, 1958c:72, 76, 77, 79, 84, 86, 90.  
*Procambarus (Ortmannicus) hirsutus*.—Hobbs, 1972a:9; 1974b:56, fig. 224; Hobbs III, Thorp, and Anderson, 1976:35, figs. 15, 22.  
*Procambarus (Ortmannicus) hirsutus*.—Hobbs III, Thorp, and Anderson, 1976:12 [erroneous spelling].  
*Procambarus (Ortmannicus) hirsutus*.—Hobbs III, Thorp, and Anderson, 1976:59 [erroneous spelling].

TYPES.—Holotype, allotype, and morphotype, USNM 101148, 101150, 1001149 (male I, female, male II); paratypes, TU, Chas. Mus., USNM.

TYPE LOCALITY.—Salkehatchie River, 1.9 miles (3 km) south of Barnwell, Barnwell County, South Carolina, on State Route 3.

RANGE.—Santee, Edisto, Salkehatchie, and Savannah drainage systems in South Carolina.

HABITAT.—Streams.

*Procambarus (Ortmannicus) horsti* Hobbs and Means

FIGURE 289

- Procambarus horsti* Hobbs and Means, 1972:401, fig. 2.—Hobbs, 1974b:56, fig. 230.—Caine, 1974:11, figs. 2a, 4e, 5b.—Franz and Lee, 1982:61, fig. 4.  
*Procambarus (Ortmannicus) horsti*.—Holt, 1973:246.—Hobbs, 1974b:56, fig. 230.—Hobbs, Hobbs, and Daniel, 1977:126, fig. 58.

TYPES.—Holotype, allotype, and morphotype, USNM 132043, 132044, 132045 (male I, female, male II); paratypes, USNM.

TYPE LOCALITY.—Big Blue Springs (tributary to the Wacissa River); 2.2 miles (3.5 km) south of the crossroads in the town of Wacissa, Jefferson County, Florida (SE 1/4, NW 1/4, Sec. 12, T. 2S, R. 3E).

RANGE.—In addition to the type locality, known from Shepard Spring, St. Marks Wildlife Refuge, Wakulla County, and from one locality in Leon County, Florida.

HABITAT.—Subterranean waters.

*Procambarus (Ortmannicus) hybus* Hobbs and Walton

FIGURE 311

- Procambarus hybus* Hobbs and Walton, 1957:39, figs. 1–12.  
*Procambarus (Ortmannicus) hybus*.—Hobbs, 1972a:10; 1974b:56, fig. 249.

TYPES.—Holotype, allotype, and morphotype, USNM 99581, 99582, 99583 (male I, female, male II); paratypes, TU, USNM, BMNH.

TYPE LOCALITY.—Roadside ditch 1.7 miles (2.7 km) north of Boligee, Greene County, Alabama.

RANGE.—Lower Alabama and Tombigbee drainages in Alabama and Mississippi, and in the Yalobusha River basin in Calhoun and Lee counties, Mississippi.

HABITAT.—Temporary ponds, pools, and burrows (secondary burrower).

*Procambarus (Ortmannicus) jaculus* Hobbs and Walton

FIGURE 310

- Cambarus (Ortmannicus) cookae* Lyle, 1938:76 [nomen nudum].  
*Procambarus jaculus* Hobbs and Walton, 1957:48, figs. 24–34.—Walls and Black, 1967:60.  
*Procambarus (Ortmannicus) jaculus*.—Hobbs, 1972a:10; 1974b:56, fig. 248.

TYPES.—Holotype, allotype, and morphotype, USNM 99584, 99585, 99586 (male I, female, male II); paratype, USNM.

TYPE LOCALITY.—Roadside ditch 1 mile (1.6 km) west of Scott-Rankin county line on U.S. Highway 80, Rankin County, Mississippi.

RANGE.—Black and Pearl river basins in Attala, Carroll, Hinds, Montgomery, Rankin, and Scott counties, Mississippi, and Avoyelles Parish, Louisiana.

HABITAT.—Temporary lentic situations and burrows (secondary burrower).

*Procambarus (Ortmannicus) lecontei* (Hagen)

FIGURE 304

- Cambarus LeContei* Hagen, 1870:47, figs. 15–18, 145.  
*Cambarus Lecontei*.—Faxon, 1884:110.  
*Cambarus lecontei*.—Hay, 1899b:959.  
*Cambarus (Cambarus) lecontei*.—Ortmann, 1905c:102.  
*Cambarus (Ortmannicus) lecontei*.—Fowler, 1912:341 [by implication].—Creaser, 1934b:4 [by implication].  
*Procambarus lecontei*.—Hobbs, 1942a:342 [by implication]; 1952a:210, fig. 81.  
*Procambarus (Ortmannicus) lecontei*.—Hobbs, 1972a:9; 1974b:57, fig. 243.

TYPES.—Syntypes, MCZ 217 (male I, 7 female, 2 male II), USNM 4958 (male I), AMS (lost), MHNP (male I, female), Würzburg Mus., ZIAS 1/44966 (2 specimens).

TYPE LOCALITY.—Mobile County, Alabama.

RANGE.—Pascagoula and Mobile river basins in Mobile and Washington counties, Alabama, and George, Jackson, and Stone counties, Mississippi.

HABITAT.—Streams.

*Procambarus (Ortmannicus) leitheuseri* Franz and Hobbs

FIGURE 283

- Procambarus (Ortmannicus) leitheuseri* Franz and Hobbs, 1983:323, fig. 1.

TYPES.—Holotype, allotype, and morphotype, USNM 178361, 178362, 178585 (male I, female, male II); paratypes, USNM, FSM.

TYPE LOCALITY.—“Eagle’s Nest” (= Lost Sink or Eagle Hole), 4.0 miles (5.4 km) northwest of the junction of U.S. Highway 19 and State Road 50 (NE 1/4, NE 1/4, SW 1/4, Sec. 21, T. 22S, R. 17E), Hernando County, Florida.

RANGE.—Known from only six localities in Hernando and Pasco counties, Florida.

HABITAT.—Subterranean waters.

*Procambarus (Ortmannicus) leonensis* Hobbs

FIGURE 296

*Procambarus leonensis* Hobbs, 1942b:114, figs. 121–125; 1943a:49, figs. 1, 6, 7, 10, 12–14, 16, 17, 22, 26, 29, 31.—Caine, 1974:9, figs. 1c, 4c, 5a.  
*Procambarus (Ortmannicus) leonensis*.—Hobbs, 1972a:9; 1974b:57, fig. 236.

TYPES.—Holotype, allotype, and “morphotype,” USNM 81091 (male I, female, male II); paratypes, MCZ, USNM, ANSP.

TYPE LOCALITY.—Sinkhole pond, 3 miles (4.8 km) southwest of Tallahassee on State Route 20, Leon County, Florida (now beneath runway at airport).

RANGE.—Between the Apalachicola and Suwannee rivers, Florida.

HABITAT.—Lentic and lotic situations, and burrows.

*Procambarus (Ortmannicus) lepidodactylus* Hobbs

FIGURE 278

*Procambarus lepidodactylus* Hobbs, 1947b:25, figs. 1–12.  
*Procambarus (Ortmannicus) lepidodactylus*.—Hobbs, 1972a:9; 1974b:57, fig. 222.

TYPES.—Holotype, and allotype, USNM 84198 (male I, female); morphotype, USNM 84199 (male II); paratypes, USNM.

TYPE LOCALITY.—Juniper Creek, 1 mile (1.6 km) southwest of Patrick on U.S. Highway 1, Chesterfield County, South Carolina.

RANGE.—Santee and Pee Dee drainage systems in eastern South Carolina and Columbus County, North Carolina.

HABITAT.—Streams.

*Procambarus (Ortmannicus) lewisi* Hobbs and Walton

FIGURE 318

*Procambarus lewisi* Hobbs and Walton, 1959:39, figs. 1–12.  
*Procambarus (Ortmannicus) lewisi*.—Hobbs, 1972a:10; 1974b:57, fig. 254.

TYPES.—Holotype, allotype, and morphotype, USNM 102467, 102468, 102469 (male I, female, male II); paratypes, TU, USNM.

TYPE LOCALITY.—Roadside ditch, 18.8 miles (30 km) east of Montgomery on U.S. Highway 80, Macon County, Alabama.

RANGE.—Barbour, Bulloch, Lowndes, Macon, Montgomery, and Russell counties, Alabama.

HABITAT.—Sluggish streams and roadside ditches.

*Procambarus (Ortmannicus) litosternum* Hobbs

FIGURE 277

*Procambarus litosternum* Hobbs, 1947a:9, figs. 3, 4, 9, 11, 13 [not 15], 16, 19, 21, 26, 29, 30.  
*Procambarus (Ortmannicus) litosternum*.—Hobbs, 1972a:9; 1974b:57, fig. 221; 1981:403, figs. 13d, 137e, 138g, 158–160, 250.

TYPES.—Holotype, allotype, and “morphotype,” USNM 82261 (male I, female, male II); paratypes, USNM.

TYPE LOCALITY.—Stream, 5 miles (8 km) northeast of Swainsboro on U.S. Highway 25, Emanuel County, Georgia.

RANGE.—Canoochee, Ogeechee, Newport, and Savannah river basins in southeastern Georgia.

HABITAT.—Streams.

*Procambarus (Ortmannicus) lophotus* Hobbs and Walton

FIGURE 307

*Procambarus lophotus* Hobbs and Walton, 1960:123, figs. 1–11.  
*Procambarus (Ortmannicus) lophotus*.—Hobbs, 1972a:9; 1974b:58, fig. 245; 1981:379, figs. 2, 15d, 136c, 138h, 146, 147, 251.

TYPES.—Holotype, allotype, and morphotype, USNM 104404, 104405, 104406 (male I, female, male II); paratypes, TU, USNM.

TYPE LOCALITY.—Roadside ditch, 3.4 miles (5.4 km) northeast of Haynesville on State Route 111, Lowndes County, Alabama.

RANGE.—Alabama drainage system from Clarke County, Alabama, to Chattooga and Whitfield counties, Georgia, and the Tennessee river basin in Walker and Catoosa counties, Georgia, and Polk County, Tennessee.

HABITAT.—Lentic and lotic situations and burrows (tertiary burrower).

*Procambarus (Ortmannicus) lucifugus alachua* (Hobbs)

FIGURE 284

*Cambarus lucifugus alachua* Hobbs, 1940a:402, fig. 18a–1.  
*Procambarus lucifugus alachua*.—Hobbs, 1942a:343.—Franz and Lee, 1982:60, figs. 1, 6.  
*Procambarus (Ortmannicus) lucifugus alachua*.—Hobbs, 1972a:10; 1974b:58, fig. 227.—Hobbs, Hobbs, and Daniel, 1977:130, figs. 4, 60.

TYPES.—Holotype, allotype, and “morphotype,” USNM 76592 (male I, female, male II); paratypes, USNM, FSBC.

TYPE LOCALITY.—Small cave, Hog Sink, about 10 miles (16 km) west of Gainesville, Alachua County, Florida (Sec. 24, T. 10S, R. 18E).

RANGE.—Southwestern Alachua, western Gilchrist, and northern and eastern Levy counties, Florida; intergrading with *P. (O.) lucifugus lucifugus* in Marion County.

HABITAT.—Subterranean waters.

*Procambarus (Ortmannicus) lucifugus lucifugus* (Hobbs)

FIGURE 285

*Cambarus acherontis*.—Faxon, 1898:645, pl. 62: figs. 1–5.  
*Cambarus lucifugus lucifugus* Hobbs, 1940a:398, figs. 17, 18m,n.  
*Procambarus lucifugus lucifugus*.—Hobbs, 1942a:343.—Franz and Lee, 1982:60, figs. 1, 6.  
*Procambarus (Ortmannicus) lucifugus lucifugus*.—Hobbs, 1972a:9.—Hobbs, Hobbs, and Daniel, 1977:128, fig. 59.

TYPES.—Holotype, allotype, and “morphotype,” USNM



77916, 77917, 77918 (male I, female, male II); paratypes, MCZ, USNM, FSBC, OSM.

TYPE LOCALITY.—Gum Cave, about 7 miles (11.2 km) southwest of Floral City, Citrus County, Florida (NW 1/4, NE 1/4, Sec. 36, T. 20S, R. 19E).

RANGE.—Citrus and Hernando counties northward to Marion County Florida, where it intergrades with *P. (O.) lucifugusalachua*.

HABITAT.—Subterranean waters.

*Procambarus (Ortmannicus) lunzi* (Hobbs)

FIGURE 294

*Cambarus lunzi* Hobbs, 1940b:3, figs. 1–10.

*Procambarus lunzi*.—Hobbs, 1942a:343.

*Procambarus (Ortmannicus) lunzi*.—Hobbs, 1972a:9; 1974b:58, fig. 234; 1981:424, figs. 14c, 136d, 138i, 166–168, 252.

TYPES.—Holotype and allotype, USNM 79301 (male I, female).

TYPE LOCALITY.—1.4 miles (2.2 km) southeast (not southwest) of Early Branch on State Route 68, Hampton County, South Carolina.

RANGE.—Lower coastal plain from Aiken, Bamberg, and Colleton counties, South Carolina, southward to McIntosh County, Georgia (between the Edisto and Satilla rivers).

HABITAT.—Sluggish lotic and lentic situations and burrows (secondary or tertiary burrower).

*Procambarus (Ortmannicus) mancus* Hobbs and Walton

FIGURE 313

*Procambarus mancus* Hobbs and Walton, 1957:44, figs. 13–23.

*Procambarus (Ortmannicus) mancus*.—Hobbs, 1972a:10; 1974b:58, fig. 251.

TYPES.—Holotype, allotype, and morphotype, USNM 99578, 99579, 99580 (male I, female, male II); paratypes, TU, USNM.

TYPE LOCALITY.—Roadside ditch, 5 miles (8 km) south of Meridian, Lauderdale County, Mississippi.

RANGE.—Pascagoula and Tombigbee river basins of Mississippi between the 31st and 34th parallels.

HABITAT.—Burrows (secondary burrower).

*Procambarus (Ortmannicus) marthae* Hobbs

FIGURE 317

*Procambarus (Ortmannicus) marthae* Hobbs, 1975:6, fig. 2.

TYPES.—Holotype, allotype, and morphotype, USNM 145994, 145995, 145996 (male I, female, male II); paratypes, USNM.

TYPE LOCALITY.—Small, very sluggish stream, 2.3 miles (3.7 km) west of the Alabama River on U.S. Highway 84, Monroe County, Alabama.

RANGE.—Alabama River basin in Dallas, Hale, Monroe, and

Perry counties, Alabama.

HABITAT.—Lentic and sluggish lotic situations.

*Procambarus (Ortmannicus) medialis* Hobbs

FIGURE 315

*Procambarus (Ortmannicus) medialis* Hobbs, 1975:10, figs. 3, 4.

TYPES.—Holotype, allotype, and morphotype, USNM 144942, 144943, 144944 (male I, female, male II); paratypes, USNM.

TYPE LOCALITY.—Pool in roadside ditch, 0.6 mile (1 km) south of Scotland Neck, Halifax County, North Carolina, on U.S. Highway 258.

RANGE.—Neuse and Pamlico river basins in the coastal plain of North Carolina.

HABITAT.—Lentic and sluggish lotic situations.

*Procambarus (Ortmannicus) orcinus* Hobbs and Means

FIGURE 290

*Procambarus orcinus* Hobbs and Means, 1972:394, fig. 1.—Caine, 1974:14, figs. 2b, 4f, 5b.—Franz and Lee, 1982:61, fig. 4.

*Procambarus (Ortmannicus) orcinus*.—Hobbs, 1974b:58, fig. 231.—Hobbs, Hobbs, and Daniel, 1977:132, fig. 61.

TYPES.—Holotype, allotype, and morphotype, USNM 132031, 132032, 132033 (male I, female, male II); paratypes, USNM.

TYPE LOCALITY.—Gopher Sink, 3.1 miles (5 km) southwest of State Route 61 and 0.2 mile (0.3 km) east of State Route 369 (SW 1/4, NW 1/4, NE 1/4, Sec. 16, T.2S, R. 1W), Leon County, Florida.

RANGE.—Known from four localities in Leon and Wakulla counties, Florida.

HABITAT.—Subterranean waters.

*Procambarus (Ortmannicus) pallidus* (Hobbs)

FIGURE 288

*Cambarus acherontis*.—Hobbs, 1937:154.

*Cambarus acherontis pallidus* Hobbs, 1938b:90 [nomen nudum].

*Cambarus pallidus* Hobbs, 1940a:394, fig. 16.

*Procambarus pallidus*.—Hobbs, 1942a:343.

*procambarus pallidus*.—Padgett, 1970:19 [lapsus calami].

*Procambarus (Ortmannicus) pallidus*.—Hobbs, 1972a:10; 1974b:59, fig. 229.—Hobbs, Hobbs, and Daniel, 1977:132, figs. 4, 62.—Franz and Lee, 1982:61, fig. 4.

*Procambarus pallidus*.—Relyea and Sutton, 1975a:174, fig. 1 [erroneous spelling].

TYPES.—Holotype and allotype, USNM 76591 (male I, female); “morphotype,” USNM 79350 (male II); paratypes, MCZ, USNM, FSBC.

TYPE LOCALITY.—Warren’s Cave, 11 miles (17.6 km) northwest of Gainesville, Alachua County, Florida (Sec. 13, T. 9S, R. 18E).

RANGE.—Subterranean waters from the northwestern part of Alachua and northeastern Levy counties to the Suwannee River basin in southern Suwannee County, Florida.

HABITAT.—Subterranean waters.

*Procambarus (Ortmannicus) pearsei* (Creaser)

FIGURE 316

*Cambarus (Ortmannicus) pearsei* Creaser, 1934b:1, figs. 1–3.—Hobbs, 1975:1 [by implication].

*Procambarus pearsei*.—Hobbs, 1942a:343.

*Procambarus pearsei pearsei*.—Hobbs and Walton, 1958:7.

*Procambarus (Ortmannicus) pearsei pearsei*.—Hobbs, 1972a:10; 1974b:59, fig. 253.

*Procambarus (Ortmannicus) pearsei*.—Hobbs, 1975:15.

TYPES.—Holotype and allotype, USNM 98336, 98337 (male I, female); paratypes, USNM.

TYPE LOCALITY.—Pond and ditch on State Route 22, south of Fayetteville, Cumberland County, North Carolina.

RANGE.—Johnston and Samson counties, North Carolina, south to Horry and Marion counties, South Carolina.

HABITAT.—Lentic situations and burrows (secondary burrower).

*Procambarus (Ortmannicus) pictus* (Hobbs)

FIGURE 273

*Cambarus pictus* Hobbs, 1940a:419, fig. 22.

*Procambarus pictus*.—Hobbs, 1942a:344.

*Procambarus (Ortmannicus) pictus*.—Hobbs, 1972a:9; 1974b:59, fig. 217.—Franz and Franz, 1979:13, fig. 1.

TYPES.—Holotype, allotype, and “morphotype,” USNM 76596 (male I, female, male II); paratypes, MCZ, USNM.

TYPE LOCALITY.—Small, swift swamp stream, about 2 miles (3.2 km) southwest of Green Cove Springs, Clay County, Florida. This is probably Peters Creek at State Route 315, Sec. 30, T.6S, R. 26E. (See Franz and Franz, 1979:14.)

RANGE.—Known from several small tributaries of Black Creek in Clay County, and tributary to the St. Johns River in Duval County, Florida.

HABITAT.—Streams.

*Procambarus (Ortmannicus) planirostris* Penn

FIGURE 312

*Procambarus planirostris* Penn, 1953c:71, figs. 1–12.

*Procambarus (Ortmannicus) planirostris*.—Hobbs, 1972a:10; 1974b:59, fig. 250.

*Procambarus plantiuostrusg*.—Huner, Meyers, and Avault, 1976:152 [erroneous spelling].

*Procambarus planirostrus*.—Huner, Meyers, and Avault, 1976:156 [erroneous spelling].

*Procambarus plantirostrus*.—Huner and Barr, 1980:146 [erroneous spelling].

TYPES.—Holotype, allotype, and morphotype, USNM 95674, 95675, 95676 (male I, female, male II); paratypes,

ANSP, TU, USNM.

TYPE LOCALITY.—Flatwoods, 1 mile (1.6 km) south of Walker on State Route 336, Livingston Parish, Louisiana.

RANGE.—“Florida” parishes of southeastern Louisiana, and Harrison, Jones, Jackson, Perry, Pearl River, and Winston counties, Mississippi.

HABITAT.—Temporary ponds, pools, and burrows (secondary burrower).

*Procambarus (Ortmannicus) plumimanus* Hobbs and Walton

FIGURE 314

*Procambarus pearsei plumimanus* Hobbs and Walton, 1958:8, figs. 1–13.

*Procambarus (Ortmannicus) pearsei plumimanus*.—Hobbs, 1972a:10; 1974b:59, fig. 252.

*Procambarus plumimanus*.—Hobbs, 1975:1.

*Procambarus (Ortmannicus) plumimanus*.—Hobbs and Peters, 1977:8.

TYPES.—Holotype, allotype, and morphotype, USNM 100940, 100941, 100942 (male I, female, male II); paratypes, TU, USNM.

TYPE LOCALITY.—Roadside ditch 2.2 miles (3.5 km) southeast of Havelock on U.S. Highway 70, Craven County, North Carolina.

RANGE.—Carteret, Craven, Duplin, and Jones counties, North Carolina.

HABITAT.—Temporary ponds, pools, and burrows (secondary burrower).

*Procambarus (Ortmannicus) pubescens* (Faxon)

FIGURE 279

*Cambarus pubescens* Faxon, 1884:109.

*Cambarus (Cambarus) pubescens*.—Ortmann, 1905c:101.

*Cambarus (Ortmannicus) pubescens*.—Fowler, 1912:341 [by implication].

*Procambarus pubescens*.—Hobbs, 1942a:342 [by implication]; 1947a:1, figs. 1, 6–8, 15 [not 14], 17, 22, 27, 28, 31.

*Procambarus (Ortmannicus) pubescens*.—Hobbs, 1972a:9; 1974b:60, fig. 223; 1981:408, figs. 13b, 137f, 138j, 161–163, 253.

*Procambarus (Ortmannicus) pubescens*.—Hobbs III, Thorp, and Anderson, 1976:59 [erroneous spelling].

TYPES.—Syntypes, USNM 3181 (male II, female), MCZ 3551 (2 female).

TYPE LOCALITY.—McBean Creek, south of Augusta, Burke-Richmond County line, Georgia.

RANGE.—The Oconee, Ogeechee, and Savannah river systems in eastern Georgia and South Carolina.

HABITAT.—Streams.

*Procambarus (Ortmannicus) pycnogonopodus* Hobbs

FIGURE 299

*Procambarus pycnogonopodus* Hobbs, 1942b:117, figs. 126–130; 1943a:53, figs. 3, 4, 8, 9, 11, 15, 19–21, 24, 25, 27, 28, 30, 32.

*Procambarus (Ortmannicus) pycnogonopodus*.—Hobbs, 1972a:9; 1974b:60, fig. 238.

TYPES.—Holotype, allotype, and “morphotype,” USNM 81092 (male I, female, male II); paratypes, MCZ, ANSP, USNM.

TYPE LOCALITY.—Roadside excavation and adjoining intermittent stream in flatwoods, 5.8 miles (9.3 km) west of Wewahitchka on State Route 22, Gulf County, Florida.

RANGE.—From the Apalachicola River westward to the Choctawhatchee Bay drainage basin in Walton County, Florida.

HABITAT.—Lentic and lotic situations, and burrows (tertiary burrower).

### *Procambarus (Ortmannicus) seminolae* Hobbs

FIGURE 292

*Procambarus seminolae* Hobbs, 1942b:142, figs. 166–170, 335–346.

*Procambarus (Ortmannicus) seminolae*.—Hobbs, 1972a:9; 1974b:60, fig. 232; 1981:430, figs. 14b, 136f, 138k, 169–172, 254.

*Procambaris seminolae*.—Wharton, 1978:46 [erroneous spelling].

TYPES.—Holotype, allotype, and “morphotype,” USNM 81286 (male I, female, male II); paratypes, MCZ, ANSP, USNM, UF (now in USNM, FSBC).

TYPE LOCALITY.—Roadside excavation about 9 miles (14.4 km) northeast of Gainesville on State Route 24 (old number 13), Alachua County, Florida (Sec. 32, T. 8S, R. 21E).

RANGE.—From the Altamaha River drainage in Georgia to Marion County, Florida. A few localities are known in Bryan, Montgomery, and Toombs counties, Georgia (see Hobbs, 1981:433).

HABITAT.—Lentic and lotic situations, and burrows (secondary or tertiary burrower).

### *Procambarus (Ortmannicus) texanus* Hobbs

FIGURE 303

*Procambarus texanus* Hobbs, 1971b:87, fig. 2.

*Procambarus (Ortmannicus) texanus*.—Hobbs, 1972a:9; 1974b:60, fig. 242.

TYPES.—Holotype, allotype, and morphotype, USNM 131457, 131458, 131459 (male I, female, male II); paratypes, USNM, BMNH.

TYPE LOCALITY.—Fish hatchery near Smithville, Bastrop County, Texas.

RANGE.—Known only from the type locality.

HABITAT.—Ponds.

### *Procambarus (Ortmannicus) tolteca* Hobbs

FIGURE 323

*Procambarus tolteca* Hobbs, 1943b:198, figs. 1–14.—Villalobos, 1959:315, figs. 53–57.

*Procambarus toltecas*.—Villalobos, 1953:356 [erroneous spelling].

*Procambarus (Ortmannicus) tolteca*.—Hobbs, 1972a:10; 1974b:60, fig. 259.

TYPES.—Holotype and allotype, USNM 81301 (male I,

female); paratypes, USNM.

TYPE LOCALITY.—Pueblo de Xilitla (not Palitla as originally recorded), small stream 8 km (5 mi) north of Tomazunchale, San Luis Potosí, Mexico.

RANGE.—Southeastern San Luis Potosí, Hidalgo, and Tamaulipas.

HABITAT.—Epigeal and hypogean streams.

### *Procambarus (Ortmannicus) verrucosus* Hobbs

FIGURE 309

*Procambarus verrucosus* Hobbs, 1952a:212, fig. 82.

*Procambarus (Ortmannicus) verrucosus*.—Hobbs, 1972a:9; 1974b:61, fig. 247.

TYPES.—Holotype, allotype, and morphotype, USNM 90743 (male I, female, male II); paratypes, USNM.

TYPE LOCALITY.—Tributary of Calebea Creek, 3.9 miles (4.6 km) south of Tuskegee, Macon County, Alabama, on U.S. Highway 29.

RANGE.—Southeastern Alabama from Lee and Macon counties southward between the Alabama and Chattahoochee rivers.

HABITAT.—Streams.

### *Procambarus (Ortmannicus) viaeviridis* (Faxon)

FIGURE 320

*Cambarus viae-viridis* Faxon, 1914:370, pl. 5.

*Cambarus (Ortmannicus) viae viridis*.—Creaser, 1934b:4 [by implication].

*Procambarus viae-viridis*.—Hobbs, 1942a:342 [by implication].

*Procambarus viaeviridis*.—Penn, 1959:5.—Pflieger, 1987a:31; 1987b:15.

*Procambarus (Ortmannicus) viaeviridis*.—Hobbs, 1972a:9.

TYPES.—Syntypes, MCZ 7336 (2 male I, 2 male II, 6 female).

TYPE LOCALITY.—St. Francis River, Greenway, Clay County, Arkansas.

RANGE.—From southern Illinois, eastern Arkansas, and northeastern Louisiana eastward to the northward flowing segment of the Tennessee River in Kentucky and Tennessee, and through Mississippi to Tuscaloosa County, Alabama.

HABITAT.—Sluggish streams and lentic situations.

### *Procambarus (Ortmannicus) villalobosi* Hobbs

FIGURE 322

*Procambarus villalobosi* Hobbs, 1969a:41, pl. 1: figs. 1–11.

*Procambarus (Ortmannicus) villalobosi*.—Hobbs, 1972a:10; 1974b:61, fig. 258.

TYPES.—Holotype and allotype, USNM 118644 and 118645 (male I, female).

TYPE LOCALITY.—Cueva del Agua, 75 kilometers (46.9 mi) east of Valles, San Luis Potosí, Mexico.

RANGE.—Known only from the type locality.

HABITAT.—Streams.



*Procambarus (Ortmannicus) xilitlae* Hobbs and Grubbs

FIGURE 298

*Procambarus (Scapulicambarus) xilitlae* Hobbs and Grubbs, 1982:45, fig. 1.  
*Procambarus (Ortmannicus) xilitlae*.—Hobbs and Grubbs, 1986:737, fig. 1.  
*Procambarus (Ortmannicus) Xilitlae*.—Anonymous, 1987b:22 [lapsus].  
*Procambarus (Ortmannicus) xilitlae*.—Anonymous, 1987b:22 [erroneous spelling].

TYPES.—Holotype, allotype, and paratype, USNM 177140, 177141, 177142 (male II, female, female).

TYPE LOCALITY.—Hoya de las Guaguas, 10 kilometers (6.2 mi) south-southwest of Aquismon, and very near the town of Xilitla, San Luis Potosí, Mexico.

RANGE.—Known only from the type locality.

HABITAT.—Subterranean waters.

*Procambarus (Ortmannicus) youngi* Hobbs

FIGURE 281

*Procambarus youngi* Hobbs, 1942b:131, figs. 146–150, 325–334.  
*Procambarus (Ortmannicus) youngi*.—Hobbs, 1972a:9; 1974b:61, fig. 225.

TYPES.—Holotype and allotype, USNM 81289 (male I, female); “morphotype,” USNM 81290 (male II); paratypes, MCZ, USNM, FSBC.

TYPE LOCALITY.—Guard House Branch, about 1 mile (1.6 km) west of Wewahitchka on State Route 22, Gulf County, Florida (Sec. 23, T. 4S, R. 10W).

RANGE.—Known from the type locality; Wetappo Creek, 6.4 miles (10 km) east of Bay County line on State Route 22; and St. Marks River in Leon and Wakulla counties, Florida.

HABITAT.—Streams.

Subgenus *Paracambarus* Ortmann

*Cambarus*.—Ortmann, 1906a:3.  
 Subgenus *Paracambarus* Ortmann, 1906a:1 [Type species, by monotypy, *Cambarus (Paracambarus) paradoxus* Ortmann, 1906a:3. Gender: masculine. Proposed as subgenus of *Cambarus*, elevated to generic rank by Hobbs, 1942a:344 and reduced to subgeneric status in the genus *Procambarus* by Hobbs, 1972a:3].—Hobbs, 1984: fig. 2.  
*Paracambarus*.—Hobbs, 1942a:344.  
*Paracamburus*.—Villalobos, 1953:354 [erroneous spelling].  
*Procambarus*.—Hobbs, 1972a:3 [in part].

*Procambarus (Paracambarus) ortmannii* (Villalobos)

FIGURE 325

*Paracambarus ortmannii* Villalobos, 1949:331, pl. 1: figs. 1–7, pl. 2: figs. 1–7.  
*Paracambarus ortmannii*.—Villalobos, 1953:346.  
*Procambarus (Paracambarus) ortmannii*.—Hobbs, 1972a:10.  
*Procambarus (Paracambarus) ortmannii*.—Hobbs, 1974b:61, fig. 261.  
*Procambarus (Paracambarus) ortmannii*.—Bouchard, 1978b:452 [erroneous spelling].

TYPES.—Holotype, allotype, and morphotype, IBM 2-1149-1a (OF6) (male I, female, male II); paratype, IBM.

TYPE LOCALITY.—“Los Estajos, 6 kilometers (3.7 mi) NE [sic] de Xihuateutla, Pue. en un pequeño arroyito que corre por el lado derecho del camino que va al rancho El Mirador” (Villalobos, 1949:338), Mexico.

RANGE.—Known only from the vicinity of the type locality.

HABITAT.—Epigeal and hypogean streams.

*Procambarus (Paracambarus) paradoxus* (Ortmann)

FIGURE 326

*Cambarus (Paracambarus) paradoxus* Ortmann, 1906a:3, fig. 1.  
*Paracambarus paradoxus*.—Andrews, 1908a:123 [lapsus].—Hobbs, 1942a:344.—Villalobos, 1947a:233, pl. 1, pl. 3: figs. 1–4.  
*Cambarus paradoxus*.—Andrews, 1908b:167.  
*Cambarus (Paracambarus) paradoxus*.—Villalobos, 1953:354 [erroneous spelling].  
*Procambarus Paradoxus*.—Creaser, 1962:7 [lapsus calami].  
*Procambarus (Paracambarus) paradoxus*.—Hobbs, 1972a:10, figs. 2j, 13a–g; 1974b:61, fig. 262.

TYPES.—Syntypes, AMS P.5385 (3 specimens), ANSP 5358 (3 specimens), MHNP (25 plus specimens), CM 74.677 (5 specimens), MCZ 6955 (male I, male II, female).

TYPE LOCALITY.—Tetela de Ocampo y La Cañada, 35 kilometers (21.9 mi) northeast of Zacapoxtla, Estado de Puebla, Mexico.

RANGE.—Known only from the area of the type locality.

HABITAT.—Streams.

REMARKS.—Ortmann (1906a:6) noted that there were “numerous specimens in the Mus. Paris.” Some of these were subsequently sent to the other museums listed (to the Australian Museum in September 1921).

Subgenus *Pennides* Hobbs

*Astacus*.—LeConte, 1856:401 [in part].  
*Cambarus*.—Hagen, 1870:48 [in part].  
 Subgenus *Cambarus*.—Ortmann, 1905c:101 [in part].  
 Subgenus *Ortmannicus*.—Fowler, 1912:341 [in part].  
*Cambaru*.—Goodnight, 1941:72 [erroneous spelling].  
*Procambarus*.—Hobbs, 1942a:342 [in part].  
 Subgenus *Pennides* Hobbs, 1972a:10 [Type species, by original designation, *Procambarus natchitochae* Penn, 1953d:5. Gender: masculine.]; 1984, fig. 2.

*Procambarus (Pennides) ablusus* Penn

FIGURE 329

*Procambarus ablusus* Penn, 1963:121, figs. 1–10.  
*Procambarus (Pennides) ablusus*.—Hobbs, 1972a:10; 1974b:62, fig. 265.

TYPES.—Holotype, allotype, and morphotype, USNM 108200, 108202, 108201 (male I, female, male II); paratypes, TU.

TYPE LOCALITY.—Hatchie River, 12.1 miles (19.3 km) east of Ripley on State Route 4, Tippah County, Mississippi.

RANGE.—Hatchie River system in Hardeman, Hardin, and McNairy counties, Tennessee, and Alcorn, Tippah, and Tishomingo counties, Mississippi.

HABITAT.—Streams.

***Procambarus (Pennides) clemmeri* Hobbs**

FIGURE 335

*Procambarus (Pennides) clemmeri* Hobbs, 1975:19, fig. 6.*Procambarus clemmeri*.—Hobbs, 1975:24.

TYPES.—Holotype, allotype, morphotype, USNM 145607, 145608, 145609 (male I, female, male II); paratypes, USNM.

TYPE LOCALITY.—Tributary to the Jourdan River, 8.7 miles (13.9 km) southeast of the Pearl River-Hancock County line on State Route 43, 4.3 miles (6.9 km) northwest of the junction of State routes 43 and 603 north of Kiln, Hancock County, Mississippi.

RANGE.—From the Pearl River to the Escatawpa River basin in southern Mississippi and Alabama.

HABITAT.—Streams.

***Procambarus (Pennides) dupratzi* Penn**

FIGURE 336

*Procambarus dupratzi* Penn, 1953d:1, figs. 1-7, 10-14.*Procambarus (Pennides) dupratzi*.—Hobbs, 1972a:10; 1974b:62, fig. 270.

TYPES.—Holotype, allotype, and morphotype, USNM 93652, 93653, 93654 (male I, female, male II); paratypes, USNM, AMNH, ANSP, MCZ, CM, TU.

TYPE LOCALITY.—Attoyac Bayou, 5.6 miles (8.9 km) southwest of Timpson on U.S. Highway 59, Shelby County, Texas.

RANGE.—Drainage systems of the Trinity, Red, Neches, Sabine, and Calcasieu rivers in Texas, Arkansas, and Louisiana.

HABITAT.—Streams.

***Procambarus (Pennides) echinatus* Hobbs**

FIGURE 334

*Procambarus echinatus* Hobbs, 1956a:117, figs. 1-17.*Procambarus (Pennides) echinatus*.—Hobbs, 1972a:10; 1974b:62, fig. 269.

TYPES.—Holotype, allotype, and morphotype, USNM 99180, 99181, 99182 (male I, female, male II); paratypes, TU, USNM.

TYPE LOCALITY.—Salkehatchie River, 1.9 miles (3 km) south of Barnwell on State Route 3, Barnwell County, South Carolina.

RANGE.—Salkehatchie and Edisto drainage systems in South Carolina.

HABITAT.—Streams.

***Procambarus (Pennides) elegans* Hobbs**

FIGURE 331

*Procambarus elegans* Hobbs, 1969c:329, figs. 1-11, 24, 25.*Procambarus (Pennides) elegans*.—Hobbs, 1972a:10; 1974b:62, fig. 266.

TYPES.—Holotype, allotype, and morphotype, USNM

129892, 129893, 115838 (male I, female, male II); paratype, USNM.

TYPE LOCALITY.—Spillway from Corney Lake, an impounded tributary of the Ouachita River, Claiborne Parish, Louisiana.

RANGE.—Ouachita drainage system in southern Arkansas and Claiborne and Union parishes, Louisiana, and in the Pearl River basin in Montgomery and Simpson counties, Mississippi.

HABITAT.—Streams.

***Procambarus (Pennides) gibbus* Hobbs**

FIGURE 342

*Procambarus gibbus* Hobbs, 1969c:337, figs. 12-23.*Procambarus (Pennides) gibbus*.—Hobbs, 1972a:10; 1974b:62, fig. 275; 1981:440, figs. 12e, 173f, 174, 175, 183a, 255.

TYPES.—Holotype, allotype, and morphotype, USNM 129804, 129803, 129805 (male I, female, male II); paratypes, USNM.

TYPE LOCALITY.—Tributary to Muckalee Creek (Flint River drainage), 3.2 miles (5.1 km) north of Americus on U.S. Highway 19, Sumter County, Georgia.

RANGE.—Flint River drainage system in Baker, Crawford, Lee, Marion, Schley, and Sumter counties, Georgia.

HABITAT.—Streams.

***Procambarus (Pennides) lagniappe* Black**

FIGURE 339

*Procambarus lagniappe* Black, 1968:5, figs. 1-12.*Procambarus (Pennides) lagniappe*.—Hobbs, 1972a:10; 1974b:62, fig. 273.

TYPES.—Holotype, allotype, and morphotype, USNM 119088, 119089, 119090 (male I, female, male II); paratypes, TU, Joe B. Black.

TYPE LOCALITY.—Pawticfaw Creek (tributary to Sucarnoochee Creek, tributary to Tombigbee River), 6.0 miles (9.6 km) south of De Kalb, Kemper County, Mississippi, on State Route 39.

RANGE.—Tributaries of the Tombigbee River in Kemper County, Mississippi.

HABITAT.—Streams.

***Procambarus (Pennides) lylei* Fitzpatrick and Hobbs**

FIGURE 333

*Procambarus lylei* Fitzpatrick and Hobbs, 1971:95, figs. 1-14.*Procambarus (Pennides) lylei*.—Hobbs, 1972a:10; 1974b:63, fig. 268.

TYPES.—Holotype, allotype, and morphotype, USNM 131533, 131534, 131535 (male I, female, male II); paratypes, USNM.

TYPE LOCALITY.—Shutispear Creek, 2.7 miles (4.3 km) south of State Route 8 on State Route 9, Calhoun County, Mississippi.

RANGE.—Known from only a few localities in the Yalobusha River drainage in Calhoun County, Mississippi.

HABITAT.—Streams.

*Procambarus (Pennides) natchitochae* Penn

FIGURE 328

*Procambarus natchitochae* Penn, 1953d:5, figs. 8, 9, 15–19.—Huner, 1977:11.  
*Procambarus (Pennides) natchitochae*.—Hobbs, 1972a:10, figs. 2k, 14a–g; 1974b:63, fig. 264.

TYPES.—Holotype, allotype, and morphotype, USNM 93649, 93650, 93651 (male I, female, male II); paratypes, USNM, AMNH, ANSP, TU.

TYPE LOCALITY.—Tributary of Spring Creek at Melder, on State Route 85, Rapides Parish, Louisiana.

RANGE.—Tributaries of Bayou Teche, Red, and Calcasieu rivers in Louisiana, Arkansas, and Texas.

HABITAT.—Streams.

*Procambarus (Pennides) ouachitae* Penn

FIGURE 343

*Procambarus vioscae*.—Williams, 1954:819 [erroneous spelling for *Procambarus vioscai*].

*Procambarus ouachitae* Penn, 1956a:109, figs. 1–17.

*Procambarus quachitae*.—Penn, 1956a:113 [erroneous spelling].

*Procambarus ouichitae*.—Hobbs, 1968b:K26 [erroneous spelling].

*Procambarus (Pennides) ouachitae*.—Hobbs, 1972a:10; 1974b:63, fig. 276.

TYPES.—Holotype, allotype, and morphotype, USNM 99222, 99223, 99224 (male I, female, male II); paratypes, USNM, ANSP, AMNH, CM.

TYPE LOCALITY.—Tributary of the South Fork of the Saline River, 2.4 miles (3.8 km) north of U.S. Highway 70 on a local road 6.5 miles (10.4 km) northeast of Hot Springs (7.7 miles (12.3 km) south-southwest of Owensville), Garland County, Arkansas.

RANGE.—Ouachita and Arkansas river systems in southwestern Arkansas, and the Yazoo Basin in Mississippi.

HABITAT.—Streams.

*Procambarus (Pennides) penni* Hobbs

FIGURE 338

*Procambarus penni* Hobbs, 1951b:273, figs. 1–11.

*Procambarus (Pennides) penni*.—Hobbs, 1972a:10; 1974b:63, fig. 272.

TYPES.—Holotype, allotype, and morphotype, USNM 91662, 91663, 91664 (male I, female, male II); paratypes, TU, USNM.

TYPE LOCALITY.—Talisheek Creek, at Talisheek, St. Tammany Parish, Louisiana.

RANGE.—Pearl and Pascagoula drainage systems in eastern Louisiana and south-central Mississippi.

HABITAT.—Streams.

*Procambarus (Pennides) petersi* Hobbs

FIGURE 340

*Procambarus spiculifer*.—Hart and Hart, 1974:21.

*Procambarus (Pennides) petersi* Hobbs, 1981:442, figs. 193d, 176.

*Procambarus petersi*.—Hobbs, 1981:449.

TYPES.—Holotype, allotype, and morphotype, USNM 144960, 144961, and 144962 (male I, female, male II); paratypes, BMNH, RNHL, USNM.

TYPE LOCALITY.—Rocky Comfort Creek, 1.7 miles (2.7 km) north of Gibson, Glascock County, Georgia, on Route S2126, and 0.4 mile (0.64 km) east on Chalker Smith Road.

RANGE.—Ogeechee River basin in Georgia.

HABITAT.—Streams.

*Procambarus (Pennides) raneyi* Hobbs

FIGURE 344

*Procambarus raneyi* Hobbs, 1953b:412, figs. 1–13.

*Procambarus rayeni*.—Anonymous, 1967a, table 3 in Appendix [erroneous spelling].

*Procambarus (Pennides) raneyi*.—Hobbs, 1972a:10; 1974b:63, fig. 277; 1981:449, figs. 12c, 173c, 175, 178, 183c, 257.

*Procambarus ranei*.—K. Brown, 1981:225 [erroneous spelling].

TYPES.—Holotype, allotype, and morphotype, USNM 95124, 95125, 95126 (male I, female, male II); paratypes, MCZ, TU, USNM.

TYPE LOCALITY.—South fork of the Broad River, 1 mile (1.6 km) south of Carlton on the Oglethorpe-Madison county line, Georgia.

RANGE.—Savannah River drainage in Georgia and South Carolina and headwaters of the Ocmulgee River in DeKalb, Gwinnett, Newton, and Walton counties, Georgia.

HABITAT.—Streams.

*Procambarus (Pennides) roberti* Villalobos and Hobbs

FIGURE 330

*Procambarus (Pennides) roberti* Villalobos and Hobbs, 1974:8, fig. 2.

*Procambarus roberti*.—Villalobos and Hobbs, 1974:2.

TYPES.—Holotype, allotype, and morphotype, USNM 132345, 132346, 133826 (male I, female, male II); paratypes, IBM.

TYPE LOCALITY.—“Ditch from La Media Luna, 4.8 miles (7.7 km) south of Río Verde (on highway to Pedro Montoya) and 2.5 miles (4 km) west on dirt road to Mina El Refugio, San Luis Potosí, Mexico” (Villalobos and Hobbs, 1974:6).

RANGE.—Known only from the vicinity of the type locality.

HABITAT.—Streams.

*Procambarus (Pennides) spiculifer* (LeConte)

FIGURE 341

*Astacus spiculifer* LeConte, 1856:401.

*Cambarus spiculifer*.—Hagen, 1870:48, figs. 59–62, 147.



*Cambarus (Cambarus) spiculifer*.—Ortmann, 1905c:101.

*Cambarus (Ortmannicus) spiculifer*.—Fowler, 1912:341 [by implication].—Creaser, 1934b:4 [by implication].

*Cambaru spiculifer*.—Goodnight, 1941:72 [erroneous spelling].

*Procamburus spiculifer*.—Hobbs, 1942a:342 [by implication]; 1942b:119, figs. 131–135.

*Procamburus (Pennides) spiculifer*.—Hobbs, 1972a:10; 1974b:64, fig. 274; 1981:453, figs. 12d, 173a,b, 177, 179, 180, 183d, 258.

*Procamburus spiculifer*.—Bouchard, 1978b:445 [erroneous spelling].

TYPES.—Syntypes, ANSP 316 (male II), MCZ 172 (2 male I, 4 female, 2 juv. male, 3 juv. female), MCZ 3376 (male I), USNM 4962 (specimens decayed), MHNP (male I, female).

TYPE LOCALITY.—Athens, Clarke County, Georgia.

RANGE.—From the upper Savannah river system in Florida and westward to the Alabama-Mobile River basin.

HABITAT.—Streams.

### *Procamburus (Pennides) suttkusi* Hobbs

FIGURE 327

*Procamburus suttkusi* Hobbs, 1953a:173, pl. 9.

*Procamburus suttkuzi*.—Hobbs, 1968b:K11 [erroneous spelling].

*Procamburus (Pennides) suttkusi*.—Hobbs, 1972a:10; 1974b:64, fig. 263.

TYPES.—Holotype, allotype, and morphotype, USNM 93730, 93731, 93732 (male I, female, male II); paratypes, USNM, TU, BMNH.

TYPE LOCALITY.—Tributary of Claybank Creek, 2 miles (3.2 km) west of Ozark, Dale County, Alabama.

RANGE.—Choctawhatchee drainage system in Alabama and northern Florida.

HABITAT.—Streams.

### *Procamburus (Pennides) versutus* (Hagen)

FIGURE 332

*Cambarus versutus* Hagen, 1870:51, figs. 55–58, 150.

*Cambarus (Cambarus) versutus*.—Ortmann, 1905c:101.

*Cambarus (Ortmannicus) versutus*.—Fowler, 1912:341 [by implication].—Creaser, 1934b:4 [by implication].

*Procamburus versutus*.—Hobbs, 1942a:342 [by implication]; 1942b:126, figs. 136–140; 1981:463, figs. 12f, 173e, 175, 181, 183e, 259.

*Procamburus (Pennides) versutus*.—Hobbs, 1972a:10; 1974b:64, fig. 267.

TYPES.—Syntypes, MCZ 190 (3 male II, female), USNM 4963 (male I), MHNP (2 specimens), AMS (no longer there).

TYPE LOCALITY.—Spring Hill, Mobile County, Alabama (see Faxon, 1914:412).

RANGE.—“From the Mobile River drainage (as far north as Choctaw, Tuscaloosa, Blount, and Tallapoosa counties) in Alabama eastward to the Chattahoochee-Apalachicola drainage in Alabama, Florida, and Georgia” (Hobbs, 1981:465).

HABITAT.—Streams.

### *Procamburus (Pennides) vioscai* Penn

FIGURE 337

*Procamburus vioscai* Penn, 1946:27, fig. 1.

*Procamburus vioscae*.—Williams, 1954:819 [erroneous spelling].

*Procamburus viosci*.—Hobbs, 1968b:K26 [erroneous spelling].

*Procamburus (Pennides) vioscai*.—Hobbs, 1972a:10; 1974b:64, fig. 271.

TYPES.—Holotype and allotype, USNM 79925, 79931 (male I, female); paratypes, USNM, Alabama Mus. Nat. Hist., TU.

TYPE LOCALITY.—Big Creek at Fishville, about 3 miles (4.8 km) east of Pollock, Grant Parish, Louisiana.

RANGE.—Tributaries of the Red River in Arkansas and Louisiana eastward to the Pascagoula River in Mississippi and lower Tombigbee River in Alabama.

HABITAT.—Streams.

### Subgenus *Procamburus* Ortmann

*Cambarus*.—Bouvier, 1897:225 [in part].

Subgenus *Cambarus* Ortmann, 1905c:98, 101 [in part].

Subgenus *Procamburus* Ortmann, 1905d:437 [Type species, by subsequent designation (Fowler, 1912:340), *Cambarus Digueti* Bouvier, 1897:225. Gender: masculine.].—Hobbs, 1972a:11; 1984, fig. 7.

*Procamburus*.—Hobbs, 1942a:342.

REMARKS.—Hobbs (1942a:341; 1972a:11) erred in citing himself as having designated the type species of *Procamburus*. See above.

### *Procamburus (Procamburus) digueti* (Bouvier)

FIGURE 345

*Cambarus Digueti* Bouvier, 1897:225.

*Cambarus carinatus* Faxon, 1898:648, pl. 63. [Type, USNM 17699 (male I).

Type locality, Guadalajara, Mexico.]

*Cambarus digueti*.—Hay, 1899b:960.

*Cambarus (Cambarus) digueti*.—Ortmann, 1905c:101.

*Cambarus (Procamburus) digueti*.—Ortmann, 1905d:438.

*Cambarus digneti*.—Harrison, 1926:380 [erroneous spelling].

*Cambarus digniti*.—Metcalf, 1929:11 [erroneous spelling].

*Procamburus digueti*.—Hobbs, 1942a:342 [by implication].—Villalobos, 1946:220, pl. 1.

*Procamburus Digueti*.—Villalobos, 1953:352.

*Procamburus (Procamburus) digueti*.—Hobbs, 1972a:11, figs. 2l, 3a, 15a–g; 1974b:64, fig. 278.

TYPES.—Syntypes, USNM 30579 (2 male I, female); MHNP (8 male, 6 female), CM 74.483 (2 specimens).

TYPE LOCALITY.—Affluents of Río Santiago, Jalisco, Mexico.

RANGE.—Pacific slope in states of Jalisco and Michoacán, Mexico.

HABITAT.—Streams.

### Subgenus *Remoticambarus* Hobbs

*Procamburus*.—Hobbs, 1972a:11.

Subgenus *Remoticambarus* Hobbs, 1972a:11 [Type species, by original designation, *Procamburus pecki* Hobbs, 1967b:2. Gender: masculine.]; 1984, fig. 6.

### *Procamburus (Remoticambarus) pecki* Hobbs

FIGURE 346

*Procamburus pecki* Hobbs, 1967b:2, figs. 1–12.

*Procamburus (Remoticambarus) pecki*.—Hobbs, 1972a:11, figs. 2m, 16a–g;

1974b:65, fig. 279.—Hobbs, Hobbs, and Daniel, 1977:136, fig. 63.

TYPES.—Holotype, allotype, and morphotype, USNM 117684, 117685, 117686 (male I, female, male II); paratypes, MCZ, TU, USNM.

TYPE LOCALITY.—McKinney Pit Cave, about 2.5 miles (4 km) west of Tuscumbia, Colbert County, Alabama (Sec. 10, T. 4S, R. 12W).

RANGE.—Tennessee drainage system in Colbert, Lauderdale, and Morgan counties, Alabama.

HABITAT.—Subterranean streams and pools.

### Subgenus *Scapulicambarus* Hobbs

*Cambarus*.—Girard, 1852:91 [in part].

Subgenus *Cambarus*.—Ortmann, 1905b:401 [in part].

Subgenus *Ortmannicus*.—Fowler, 1912:341 [in part].

*Procamburus*.—Hobbs, 1942a:342 [in part].

*Cambaus*.—Okada, 1948:133 [erroneous spelling].

*Procamburus*.—Sukô, 1961:37 [erroneous spelling].

Subgenus *Scapulicambarus* Hobbs, 1972a:11 [Type species, by original designation, *Cambarus clarkii paeninsulanus* Faxon, 1914:369. Gender: masculine.]; 1984, fig. 5.

*Procamburus*.—Franzini-Armstrong, 1976:218 [erroneous spelling].

*Procamburus*.—Wharton, 1978:46 [erroneous spelling].

*Cambarus*.—Shinozaki and Ishida, 1981:50 [erroneous spelling].

*Procamburus*.—Shinozaki and Ishida, 1981:50 [erroneous spelling].

*Procambarius*.—Mauro, Thompson, and Melacha, 1983:938 [erroneous spelling].

*Procambambarus*.—Appelberg, 1983:67 [erroneous spelling].

### *Procamburus (Scapulicambarus) clarkii* (Girard)

FIGURE 351

*Cambarus Clarkii* Girard, 1852:91.—Hagen, 1870:39, figs. 7–10, 99, 100, 133, 134, 142, pl. 4.

*Cambarus clarkii*.—Faxon, 1898:645.

*Cambarus clarki*.—Hay, 1902b:437.

*Cambarus (Cambarus) clarki*.—Ortmann, 1905b:401.

*Cambarus (Ortmannicus) clarkii*.—Fowler, 1912:341 [by implication].

*Cambarus clarkii clarkii*.—Faxon, 1914:369 [by implication].

*Procamburus clarkii clarkii*.—Hobbs, 1942a:342 [by implication].

*Procamburus clarkii*.—Hobbs, 1942b:103; 1962b:273, figs. 1–9.—Huner, 1977:10.—Pflieger, 1987a:30; 1987b:14.

*Cambaus clarkii*.—Okada, 1948:133 [erroneous spelling].

*Procamburus clarki*.—Fingermann and Lago, 1957:383.—Penn and Hobbs, 1958:466, figs. 2, 21, 36, 49, 65.

*Procamburus clarkii*.—Sukô, 1961:37 [erroneous spelling].

*Procamburus (Cambarus) clarkii*.—Niiyama, 1962:232.

*Procamburus clarcii*.—Unestam, 1969:203 [erroneous spelling].

*Procamburus (Scapulicambarus) clarkii*.—Hobbs, 1972a:12; 1974b:65, fig. 283.

*P[rocamburus] (O[rtmannicus]) clarki*.—Bouchard, 1972b:102 [lapsus].

*Procamburus clarkii*.—Franzini-Armstrong, 1976:218 [erroneous spelling].

*Procamburus clarkii*.—Brown and Bowler, 1978:34 [erroneous spelling].

*Combarus clarkii*.—Shinozaki and Ishida, 1981:50 [erroneous spelling].

*Procambarius clarki*.—Mauro, Thompson, and Melacha, 1983:938 [erroneous spelling].

*Procambambarus clarkii*.—Appelberg, 1983:67 [erroneous spelling].

*Cambarus calrkii*.—Morales, Bozada, and Casanova, 1987:188 [erroneous spelling].

TYPES.—Destroyed in Chicago fire, 1871 (Faxon, 1914:414).

TYPE LOCALITY.—Between San Antonio and El Paso del Norte, Texas.

RANGE.—Northern Mexico to Escambia County, Florida, and north to southern Illinois and Ohio. Widely introduced in the United States and elsewhere; Huner (1986) recorded the following introductions: Arizona, California, Georgia, Hawaii, Idaho, Indiana, Maryland, Nevada, New Mexico, North Carolina, Ohio, Oregon, South Carolina, Belize, Brazil, Costa Rica, Dominican Republic, Island of Cyprus, Japan, Kenya, People's Republic of China, Portugal, Spain, Taiwan, and Uganda. It has also been introduced into Oklahoma and into Utah (Johnson, 1986:630). Limited cultivation is in progress in Colombia, France, and Zambia, and introductions are planned or have been made in Ecuador, El Salvador, Guatemala, Honduras, Nicaragua, Venezuela, and Zimbabwe.

HABITAT.—Lentic and lotic situations and burrows (tertiary burrower).

### *Procamburus (Scapulicambarus) howellae* Hobbs

FIGURE 349

*Procamburus howellae* Hobbs, 1952b:167, figs. 1, 4, 5, 8–14.

*Procamburus (Scapulicambarus) howellae*.—Hobbs, 1972a:12; 1974b:65, fig. 281; 1981:469, figs. 16b, 182b, 183f, 184–188, 260.

TYPES.—Holotype and allotype, USNM 93158 (male I, female); morphotype, USNM 93159 (male II); paratypes, MCZ, USNM.

TYPE LOCALITY.—Drainage ditch on campus of Wesleyan College, Rivoli, Bibb County, Georgia.

RANGE.—Lower piedmont and upper coastal plain of Georgia in the middle Flint and Altamaha river basins.

HABITAT.—Lotic and lentic situations and burrows (tertiary burrower).

### *Procamburus (Scapulicambarus) okaloosae* Hobbs

FIGURE 350

*Procamburus okaloosae* Hobbs, 1942b:100, figs. 101–105, 315–324.

*Procamburus (Scapulicambarus) okaloosae*.—Hobbs, 1972a:12; 1974b:65, fig. 282.

TYPES.—Holotype, USNM 81282 (male I); allotype and "morphotype," USNM 81283 (female, male II); paratypes, MCZ, USNM, FSBC.

TYPE LOCALITY.—Roadside ditch at intersection of U.S. Highway 90 and State Route 4, Milligan, Okaloosa County, Florida (Sec. 22, T. 3N, R. 24W).

RANGE.—Perdido, Escambia, and Yellow drainage systems in Alabama and Florida.

HABITAT.—Lentic and lotic situations.

### *Procamburus (Scapulicambarus) paeninsulanus* (Faxon)

FIGURE 348

*Cambarus clarkii paeninsulanus* Faxon, 1914:369.

*Cambarus clarkipaeninsulanus*.—Hobbs, 1937:154 [erroneous spelling].

*Cambarus clarki paeninsulanus*.—Goodnight, 1941:72.  
*Procambarus clarkii paeninsulanus*.—Hobbs, 1942a:342 [by implication].  
*Procambarus paeninsulanus*.—Hobbs, 1942b:104, figs. 106–110.—Caine, 1974:7, 14, 36, 47, figs. 1b, 4b, 5a.  
*Procambarus paeninsulanus*.—Anonymous, 1967b, table 3 in unnumbered Appendix [erroneous spelling].  
*Cambarus paeninsulanus*.—Hobbs, 1972a:12 [lapsus].  
*Procambarus (Scapulicambarus) paeninsulanus*.—Hobbs, 1972a:12, figs. 1c, f, 2n, 3b, 17a–g; 1974b:65, fig. 280; 1981:475, figs. 16c, 182c, 183g, 185, 189–191, 261.  
*Procambarus paeninsulanus*.—Hart and Hart, 1974:128 [erroneous spelling].  
*Procambaris paeninsulanus*.—Wharton, 1978:46 [erroneous spelling.]

TYPES.—Holotype, MCZ 3530 (male II); paratypes, MCZ, USNM.

TYPE LOCALITY.—Three miles (4.8 km) below Horse Landing, St. Johns River, Putnam County, Florida.

RANGE.—Southern Georgia, and Florida from the Choctawhatchee Basin east and south to Flagler, Marion, and Hillsboro counties.

HABITAT.—Lentic and lotic situations, and burrows (tertiary burrower); rarely in subterranean waters.

#### *Procambarus (Scapulicambarus) strenthi* Hobbs

FIGURE 347

*Procambarus (Scapulicambarus) strenthi* Hobbs, 1977a:412, 2 figs.

TYPES.—Holotype, allotype, and morphotype, USNM 147725, 147726, 147727; paratypes, USNM.

TYPE LOCALITY.—Small stream 15 miles (24 km) west of Ciudad Valles, San Luis Potosí, Mexico.

RANGE.—Known only from the type locality.

HABITAT.—Stream.

#### *Procambarus (Scapulicambarus) troglodytes* (LeConte)

FIGURE 352

*Astacus troglodytes* LeConte, 1856:400.  
*Astacus fossarum* LeConte, 1856:401. [Syntypes, MCZ 3377 (male I, dry), ANSP 314 (female). Type locality, ditches, lower Georgia.]  
*Astacus maniculatus* LeConte, 1856:401. [Types not extant. Type locality, ditches, lower Georgia.]  
*Cambarus troglodytes*.—Hagen, 1870:41, figs. 11–14, 141.  
*Cambarus troglodytus*.—Hagen, 1870:33 [erroneous spelling].  
*Cambarus maniculatus*.—Hagen, 1870:34.  
*Cambarus fossarum*.—Hagen, 1870:53.  
*Cambarus troglodytes*.—Herrick, 1882:254 [erroneous spelling].  
*Cambarus (Cambarus) troglodytes*.—Ortmann, 1905c:102.  
*Cambarus (Ortmannicus) troglodytes*.—Fowler, 1912:341 [by implication].—Creaser, 1934b:4 [by implication].  
*Procambarus troglodytes*.—Hobbs, 1942a:342 [by implication].  
*Procambarus (Scapulicambarus) troglodytes*.—Hobbs, 1972a:12; 1974b:66, fig. 284; 1981:484, figs. 16d, 182a, 183h, 185, 192–194, 262.

TYPES.—Syntypes, MCZ 3375 (male I, dry), ANSP 4175 (fragments).

TYPE LOCALITY.—Rice fields in Georgia.

RANGE.—Between the Altamaha and Pee Dee rivers, in Georgia and South Carolina.

HABITAT.—Lentic and lotic situations, and burrows (tertiary burrower).

#### Subgenus *Tenuicambarus* Hobbs

*Procambarus*.—Hobbs, 1950b:194 [in part].  
 Subgenus *Tenuicambarus* Hobbs, 1972a:12 [Type species, by original designation, *Procambarus tenuis* Hobbs, 1950b:194. Gender: masculine.]; 1984, fig. 8.

#### *Procambarus (Tenuicambarus) tenuis* Hobbs

FIGURE 353

*Procambarus tenuis* Hobbs, 1950b:194, figs. 1–12.  
*Procambarus (Tenuicambarus) tenuis* Hobbs, 1972a:12, figs. 2o, 3d, 18a–g; 1974b:66, fig. 285.

TYPES.—Holotype, allotype, and morphotype, USNM 90390 (male I, female, male II); paratypes, USNM.

TYPE LOCALITY.—Six miles (9.6 km) east of Page and just west of Oklahoma state line, Le Flore County, Oklahoma.

RANGE.—Arkansas, Ouachita, and Red river basins in eastern Oklahoma and western Arkansas.

HABITAT.—In, and burrowing adjacent to, springs and clear, cool streams.

#### Subgenus *Villalobosus* Hobbs

*Cambarus*.—Creaser, 1931a:1 [in part].  
 Subgenus *Cambarus*.—Creaser, 1931a:1 [in part].  
*Procambarus*.—Hobbs, 1942a:342 [in part].  
*Paracambarus*.—Villalobos, 1944a:161 [in part].  
 Subgenus *Procambarus*.—Villalobos, 1953:354 [lapsus].  
 Subgenus *Villalobosus* Hobbs, 1972a:12 [Type species, by original designation, *Paracambarus riojae* [sic] Villalobos, 1944a:161. Gender: masculine.]; 1984, fig. 7.

#### *Procambarus (Villalobosus) contrerasi* (Creaser)

FIGURE 358

*Cambarus (Cambarus) contrerasi* Creaser, 1931a:1, figs. 1–6.  
*Cambarus contrerasi*.—Creaser, 1931a:1.  
*Procambarus contrerasi*.—Hobbs, 1942a:342.—Villalobos, 1950:373, pls. 2, 3; 1955:142, pls. 29, 30; 1983:137, pls. 29, 30.  
*Cambarus (Procambarus) contrerasi*.—Villalobos, 1953:354 [lapsus calami].  
*Procambarus (Villalobosus) contrerasi*.—Hobbs, 1972a:12; 1974b:66, fig. 289.

TYPES.—Holotype, USNM 98353 (male I); paratype, USNM.

TYPE LOCALITY.—Tributary of the Río Cazones near Agua Fría, 19.2 kilometers (12 mi) south of Miahuapan, State of Puebla, Mexico.

RANGE.—Tributaries of the Río Cazones and the Río Tecolutla in the vicinity of Zihuateutla and Agua Fría, Puebla, Mexico.

HABITAT.—Streams.

#### *Procambarus (Villalobosus) cuetzalanae* Hobbs

FIGURE 355

*Procambarus (Villalobosus) cuetzalanae* Hobbs, 1982:39, fig. 1.

TYPES.—Holotype, allotype, and morphotype, USNM



177202, 177203, and 177204 (male I, female, male II); paratypes, BM, RNHL, TMM, USNM.

TYPE LOCALITY.—Cueva de Tasalolpan, 5 kilometers (3.1 mi) southwest of Cuetzalan, Puebla, in the Río Tecuantepec (tributary to Río Tecolutla) watershed, Mexico.

RANGE.—Known from only five localities in the vicinity of Cuetzalan, Puebla, Mexico.

HABITAT.—Subterranean waters and springs.

*Procambarus (Villalobosus) erichsoni* Villalobos

FIGURE 357

*Procambarus erichsoni* Villalobos, 1950:384, pls. 5–7; 1955:131, pls. 26, 27; 1983:127, pls. 26, 27.

*Procambarus (Villalobosus) erichsoni*.—Hobbs, 1972a:12; 1974b:66, fig. 288. *Procambarus erichsoni*.—Bouchard, 1978b:445 [erroneous spelling].

TYPES.—Holotype, allotype, and morphotype, IBM 52048(048) (male I, female, male II); paratypes, IBM, USNM.

TYPE LOCALITY.—“Arroyos Puendo, Mamay y Bojoy, Tenango de Doria, Hidalgo [Mexico]” (Villalobos, 1950:390).

RANGE.—Tributaries of the Río Pantepec (to Río Tuxpan) in the vicinity of Tenango de Doria, Hidalgo, Mexico.

HABITAT.—Streams.

*Procambarus (Villalobosus) hoffmanni* (Villalobos)

FIGURE 356

*Procambarus hoffmanni* Villalobos, 1944a:169, pl. 2.

*Procambarus hoffmanni*.—Villalobos, 1950:411; 1955:102, pls. 18, 19; 1983:100, pls. 18, 19.

*Procambarus Hoffmanni*.—Villalobos, 1955:285.

*Procambarus Hoffmanni*.—Hobbs, 1962a:279 [erroneous spelling].

*Procambarus (Villalobosus) hoffmanni*.—Hobbs, 1972a:12; 1974b:67, fig. 287.

TYPES.—Holotype, allotype, and “morphotype,” IBM 100043(013) (male I, female, male II); paratypes, IBM, USNM.

TYPE LOCALITY.—“Vertedor de Demasia de la Presa de Necaxa, Necaxa, [Puebla, Mexico]” (Villalobos, 1955:107).

RANGE.—Tributaries of the Río Tecolutla and Río Nautla in Puebla and Veracruz, Mexico.

HABITAT.—Streams.

*Procambarus (Villalobosus) hortonhobbsi* Villalobos

FIGURE 359

*Procambarus hortonhobbsi* Villalobos, 1950:402, pls. 10, 11; 1955:107, pls. 19, 20; 1983:105, pls. 19, 20.

*Procambarus hortonhobbsi*.—Villalobos, 1955:288 [erroneous spelling].

*Procambarus (Villalobosus) hortonhobbsi*.—Hobbs, 1972a:12; 1974b:67, fig. 290.

TYPES.—Holotype, allotype, and morphotype, IBM 21249(085) (male I, female, male II); paratypes, IBM, USNM.

TYPE LOCALITY.—El Coyular, 7 kilometers (4.4 mi) northeast of La Unión, Municipio de Zihuateutla, Puebla, Mexico.

RANGE.—Known only from the type locality.

HABITAT.—Streams.

*Procambarus (Villalobosus) riojai* (Villalobos)

FIGURE 354

*Procambarus riojai* Villalobos, 1944a:161, pl. 1.

*Procambarus riojai*.—Villalobos, 1950:401; 1955:96, pl. 17; 1983:95, pl. 17.

*Procambarus riojai*.—Hobbs, 1971d:3.

*Procambarus (Villalobosus) riojai*.—Hobbs, 1972a:12, figs. 2p, 3c, 19a–g; 1974b:67, fig. 286.

TYPES.—Holotype, allotype, and “morphotype,” IBM 50045(027) (male I, female, male II); paratypes, IBM, USNM.

TYPE LOCALITY.—“Huauchinango, Estado de Puebla, riachuelos tributarios del río Necaxa, [Mexico]” (Villalobos, 1944a:169).

RANGE.—Headwater tributaries of the Río Cazonos and Río Tecolutla in Hidalgo and Puebla, Mexico.

HABITAT.—Streams.

*Procambarus (Villalobosus) teziutlanensis* (Villalobos)

FIGURE 362

*Procambarus teziutlanensis* Villalobos, 1947a:240, pl. 2, pl. 3; figs. 5–9.

*Procambarus teziutlanensis*.—Villalobos, 1950:372; 1955:115, pls. 21, 22; 1983:112, pls. 21, 22.

*Procambarus teziutlanensi*.—Villalobos, 1953:357 [erroneous spelling].

*Procambarus iziutlanensis*.—Hobbs, 1971d:12 [erroneous spelling].

*Procambarus (Villalobosus) teziutlanensis*.—Hobbs, 1972a:12; 1974b:67, fig. 292.

TYPES.—Holotype, allotype, and morphotype, IBM 121245(029) (male I, female, male II); paratypes, IBM, USNM.

TYPE LOCALITY.—“Chignautla, 5 kilometers [3.1 mi] al Oriente de Teziutlán, Estado de Puebla, [Mexico]” (Villalobos, 1947a:247).

RANGE.—Headwater tributaries of the Río Nautla in Puebla and Veracruz, Mexico.

HABITAT.—Streams.

*Procambarus (Villalobosus) tlapacoyanensis* (Villalobos)

FIGURE 363

*Procambarus tlapacoyanensis* Villalobos, 1947b:537, pls. 1, 2.

*Procambarus tlapacoyanensis*.—Villalobos, 1950:372; 1955:123, pls. 23, 24; 1983:119, pls. 23, 24.

*Procambarus (Villalobosus) tlapacoyanensis*.—Hobbs, 1972a:12; 1974b:67, fig. 293.

TYPES.—Holotype, allotype, and morphotype, IBM 51947(031) (male I, female, male II); paratypes, IBM, USNM.

TYPE LOCALITY.—Cañada de Tomata, Tlapacoyan, Veracruz, Mexico.

RANGE.—Tributaries of the Río Nautla in the vicinity of Tlapacoyan, Veracruz, Mexico.

HABITAT.—Streams.

*Procambarus (Villalobosus) xochitlanae* Hobbs

FIGURE 361

*Procambarus (Villalobosus) xochitlanae* Hobbs, 1975:16, fig. 5.

TYPES.—Holotype, allotype, morphotype, USNM 145610, 145611, 145612 (male I, female, male II); paratypes USNM, IBM, TTM.

TYPE LOCALITY.—Cueva de Los Camarones (Río Tecolutla Basin), 3 kilometers (1.9 mi) northwest of Xochitlán, Puebla, Mexico.

RANGE.—Known only from the type locality.

HABITAT.—Subterranean stream.

*Procambarus (Villalobosus) zihuatlensis* Villalobos

FIGURE 360

*Procambarus zihuatlensis* Villalobos, 1950:394, pls. 8, 9; 1955:149, pls. 31, 32; 1983:144, pls. 31, 32.*Procambarus (Villalobosus) zihuatlensis*.—Hobbs, 1972a:12; 1974b:67, fig. 291.*Procambarus (Villalobosus) zihuatlensis*.—Villalobos, 1982:220 [erroneous spelling].

TYPES.—Holotype, allotype, and morphotype, IBM 21149(080) (male I, female, male II); paratypes, IBM.

TYPE LOCALITY.—Arroyo de Tlatentloyan, Los Estajos, Municipio de Zihuateutla, Puebla, Mexico.

RANGE.—Headwater tributaries of the Río Tecolutla in the vicinity of Zihuateutla, Puebla, Mexico.

HABITAT.—Streams.

**Genus *Troglocambarus* Hobbs***Troglocambarus* Hobbs, 1942a:345. [Type species, by original designation, *Troglocambarus maclanei* Hobbs, 1942a:345. Gender: masculine.]*Troglocambarus*.—Bouchard, 1978b:428 [erroneous spelling].*Troglocambarus maclanei* Hobbs

FIGURE 364

*Troglocambarus maclanei* Hobbs, 1942a:345, pis. 1, 2; 1971c:122, figs. 17a–g, 19a; 1974b:68, fig. 294.—Hobbs, Hobbs, and Daniel, 1977:138, figs. 4, 64, 65.—Hobbs and Franz, 1986:509, fig. 3e,f.*Troglocambarus maclanei*.—Bouchard, 1978b:428; 1980b:428 [erroneous spelling].

TYPES.—Holotype, allotype, and “morphotype,” USNM 79385, 79386, 79387 (male I, female, male II); paratypes, MCZ, USNM.

TYPE LOCALITY.—Squirrel Chimney, a small cave about 11 miles (17.6 km) northwest of Gainesville, Alachua County, Florida (Sec. 21, T. 9S, R. 18E).

RANGE.—Florida: Hernando and Marion counties to Alachua and Suwannee counties.

HABITAT.—Subterranean waters.

**Family PARASTACIDAE Huxley, 1879****Genus *Parastacus* Huxley***Astacus*.—Poeppig, 1835:314.*Parastacus* Huxley, 1879:771. [Type species, by subsequent designation (Faxon, 1898:683), *Astacus pilimanus* von Martens, 1869:15. Gender: masculine].*Parastacus brasiliensis* (von Martens)

FIGURE 365

*Astacus Brasiliensis* von Martens, 1869:16, pl. 2: fig. 2.*Astacus brasiliensis*.—Huxley, 1879:771.*Parastacus brasiliensis*.—Huxley, 1879:771 [by implication]; 1880a:250, fig. 64.—Riek, 1971:133.—Buckup and Rossi, 1980:667, figs. 5–7, 8, 21.*Parastacus brasiliensis*.—Moreira, 1901:80 [erroneous spelling].*Astacus brasiliensis*.—Moreira, 1901:80 [erroneous spelling].*Parastacus brasiliensis*.—Brodsky, 1981:120 [erroneous spelling].

TYPES.—Syntypes, ZBM 3322, 3348.

TYPE LOCALITY.—Porto Alegre, Rio Grande do Sul, Brazil.

RANGE.—Known only from the east-central part of the state of Rio Grande do Sul, Brazil.

HABITAT.—Lotic habitats (see Buckup and Rossi, 1980: 668–669).

REMARKS.—This taxon was considered to be a junior synonym of *Parastacus pilimanus* (von Martens) by Riek, 1971, but was recognized as being distinct by Buckup and Rossi, 1980.

*Parastacus defossus* Faxon

FIGURE 370

*Parastacus defossus* Faxon, 1898:686, pl. 67: figs. 3, 4.—Riek, 1971:134.—Buckup and Rossi, 1980:677, figs. 15–17, 21.

TYPES.—Syntypes, USNM 19647 (3 specimens); MCZ 4776 (1 specimen).

TYPE LOCALITY.—Montevideo, Uruguay.

RANGE.—From Montevideo, Uruguay, to east central Rio Grande do Sul, Brazil. (See Buckup and Rossi, 1980:677.)

HABITAT.—Burrows.

*Parastacus laevigatus* Buckup and Rossi

FIGURE 369

*Parastacus laevigatus* Buckup and Rossi, 1980:677, figs. 18–21.

TYPES.—Holotype, MN.UFRJ (male); paratypes, MN.UFRJ.

TYPE LOCALITY.—“Joinville, (Estrada da Cidra, Chácara dos Ipes), Santa Catarina, Brasil” (Buckup and Rossi, 1980:680).

RANGE.—Known from only two localities, in the extreme northeastern part of Santa Catarina, Brazil.

HABITAT.—Not reported.

***Parastacus nicoleti* (Philippi)**

FIGURE 372

- Astacus chilensis*.—Nicolet, 1849:211 [not H. Milne Edwards, 1837].  
*Astacus Nicoleti* Philippi, 1882:624.  
*Astacus Ricoleti*.—Philippi, 1882:626 [erroneous spelling].  
*Parastacus nicoletii* Faxon, 1898:689 [as a new species].  
*Parastacus nicoleti*.—Ortmann, 1902:293.—Porter, 1917:98, fig. 61.—  
 Bahamonde, 1958:183, figs. 1–17.—Riek, 1971:133.  
*Parastacus Nicoleti*.—Porter, 1904:255.  
*Astacus nicoleti*.—Faxon, 1914:354.  
*Parastacus nicoletti*.—Bahamonde, 1951:91 [erroneous spelling].

TYPE.—Not designated.

TYPE LOCALITY.—Valdivia, Chile.

RANGE.—Valdivia region of Chile.

HABITAT.—Burrows.

***Parastacus pilimanus* (von Martens)**

FIGURE 366

- Astacus pilimanus* von Martens, 1869:15, pl. 2: fig. 1.  
*Parastacus pilimanus*.—Huxley, 1879:771 [by implication].—Riek,  
 1971:133.—Buckup and Rossi, 1980:665, figs. 2–4, 8, 21.—Amestoy,  
 1983:2, fig. 3.  
*Astacus polmanus*.—Brodsky, 1981:120 [erroneous spelling].

TYPES.—Syntypes: ZBM 3323, 3447.

TYPE LOCALITY.—Porto Alegre, Rio Grande do Sul, Brazil.

RANGE.—Eastern Uruguay and southern Rio Grande do Sul, Brazil.

HABITAT.—Burrows; in open water seasonally (associated with the liberation of young). (See Buckup and Rossi, 1980:665, and Amestoy and Pin, 1984:2).

***Parastacus pugnax* (Poepig)**

FIGURE 371

- Astacus pugnax* Poepig, 1835:314.  
*Astacus chilensis* H. Milne Edwards, 1837:333 [Type: MHNP. Type locality: "cotes du Chile"].  
*Astacus chiliensis*.—Gray, 1845:411 [erroneous spelling].  
*Astacus (Cambarus) chilensis*.—Erichson, 1846:100.  
*Astacus (Astacus) Chilensis*.—Herklots, 1861:144.  
*Parastacus Chilensis*.—Von Ihéring, 1893:46.  
*Parastacus hassleri* Faxon, 1898:687, pl. 70: figs. 1–3. [Types: holotype, MCZ 3401; paratypes, USNM 19689. Type locality: Talcahuano, Chile.]  
*Parastacus Hassleri*.—Lönning, 1898:349, figs. 1–3.  
*Parastacus chilensis*.—Rathbun, 1910:602.—Holthuis, 1952:81.  
*Astacus chilensis* auct.—Bahamonde, 1951:92.  
*Parastacus pugnax*.—Holthuis, 1952:84.—Riek, 1971:133, fig. 1b.

TYPES.—Not extant. Neotype, here designated: MCZ 3401, holotype of *Parastacus hassleri* Faxon, 1898.

TYPE LOCALITY.—Talcahuano, Chile.

RANGE.—Assuming the identity of H. Milne Edwards' type to be conspecific with Poepig's species (as believed by Riek, 1971), this Chilean crayfish ranges from Valparaíso southward to the Taitao Peninsula.

HABITAT.—Burrows.

REMARKS.—The synonymy and taxonomic problems involved with the identities of *Astacus chilensis* Poepig and *Astacus chilensis* H. Milne Edwards are discussed by Holthuis (1952).***Parastacus saffordi* Faxon**

FIGURE 368

- Parastacus saffordi* Faxon, 1898:683, pl. 68.—Riek, 1971:134.—Buckup and Rossi, 1980:673, figs. 9–11, 21.

TYPES.—Syntypes, USNM 12581 (2 specimens), MCZ 4775 (1 specimen).

TYPE LOCALITY.—Montevideo, Uruguay.

RANGE.—Until the report of the occurrence of this crayfish in two widely separated localities in the eastern part of the state of Santa Catarina by Buckup and Rossi (1980:675), this crayfish was known only from the vicinity of Montevideo, Uruguay. It is surprising that it has not been found in the state of Rio Grande do Sul.

HABITAT.—Faxon reported its occurrence in burrows, and Buckup and Rossi found it swimming in a "cacimba" (= small, perhaps temporary, pool).

***Parastacus varicosus* Faxon**

FIGURE 367

- Parastacus varicosus* Faxon, 1898:685, pl. 69.—Riek, 1971:134, fig. 1a,d,e.—  
 Buckup and Rossi, 1980:675, figs. 12–14, 21.—Amestoy, 1983:2, fig. 2.

TYPE.—Holotype, USNM 4133.

TYPE LOCALITY.—Colima, Mexico. As pointed out by others, these are obviously erroneous locality data.

RANGE.—Eastern parts of Rio Grande do Sul, Brazil, and departments of Maldonado and Rocha, Uruguay.

HABITAT.—Lotic situations.

**Genus *Samastacus* Riek**

- Astacus*.—Philippi, 1882:627.  
*Parastacus*.—Faxon, 1898:690.  
*Samastacus* Riek, 1971:135. [Type species, by original designation, *Astacus spinifrons* Philippi, 1882:627. Gender: masculine.]

***Samastacus araucanus* (Faxon)**

FIGURE 374

- Parastacus araucanus* Faxon, 1914:353, plate 4.  
*Samastacus araucanus*.—Riek, 1971:135.

TYPE.—Holotype, MCZ 7355 (male).

TYPE LOCALITY.—Corral, Chile.

RANGE.—Known only from the type locality.

HABITAT.—Cascading stream, but according to Faxon, "it has a strongly compressed cephalothorax, indicating a burrow-dwelling species."



***Samastacus spinifrons* (Philippi)**

## FIGURE 373

- Astacus spinifrons* Philippi, 1882:627, fig. B.  
*Actacus bimaculatus* Philippi, 1894:378 [Types: unknown. Type locality: presumably Chile, but no locality cited. Erroneous spelling of generic name.]  
*Parastacus agassizii* Faxon, 1898:690, pl. 70: figs. 4, 5. [Syntypes: MCZ 3400, USNM 12045. Type locality: Talcahuano, Chile.].—Doflein, 1900:132.  
*Parastacus agassizi*.—Ortmann, 1902:293.  
*Parastacus Agassizi*.—Porter, 1904:258, pl. 9.  
*Astacus bimaculatus*.—Faxon, 1914:354.  
*Parastacus spinifrons*.—Faxon, 1914:354, pl. 9: fig. 1.—Bahamonde, 1951:85, 6 figs.—Holthuis, 1952:81.  
*Parastacus bimaculatus*.—Faxon, 1914:356.

- ?*Parastacus nicoleti*.—Porter, 1917:98, fig. 61.  
*Parastacus agassizii*.—Bahamonde, 1951:89 [erroneous spelling].  
*Parastacus efinifrons*.—Castro, 1966:11 [erroneous spelling].  
*Samastacus spinifrons*.—Riek, 1971:135, fig. 1c.f.g.—Hobbs, 1974a:26, fig. 26.

TYPES.—Unknown.

TYPE LOCALITY.—“Llico i de Valdivia,” Chile (Philippi, 1882:627).

RANGE.—Region of Talcahuano southward to the Taitao Peninsula and the Island of Chiloé, and questionably in the Pacific Basin of neighboring Argentina.

HABITAT.—Lotic (and possibly lentic?) situations.

# Appendix 1

## Alphabetical List of American Crayfishes with Their Distribution

Crayfishes in Astacidae, Cambaridae, and Parastacidae are listed along with the countries, states, and/or provinces in which they live. Parentheses enclosing political units denote known or suspected introductions; if the latter, a question mark follows the closing parenthesis. The number for each species/subspecies is referenced in Appendix 2 (it does not correspond to the figure number for that taxon). A dagger indicates the species is extinct.

### Family ASTACIDAE

#### *Pacifastacus*

##### (*Hobbsastacus*)

- †1. *chenoderma*.—USA: Idaho, Oregon (Miocene and Pliocene deposits; extinct)
2. *connectens*.—USA: Idaho, Oregon
3. *fortis*.—USA: California
4. *gambelii*.—USA: (California)?, Idaho, Montana, Nevada, Oregon, Utah, Washington, Wyoming
5. *nigrescens*.—USA: California (probably extinct)

##### (*Pacifastacus*)

6. *leniusculus klamathensis*.—CANADA: British Columbia.—USA: California, Idaho, Oregon, Washington
7. *leniusculus leniusculus*.—CANADA: British Columbia.—(JAPAN).—(SWEDEN).—USA: (California)?, Idaho, (Nevada), Oregon, (Utah)?, Washington
8. *leniusculus trowbridgii*.—CANADA: British Columbia.—(JAPAN).—USA: (California)?, Idaho, (Nevada), Oregon, Washington

### Family CAMBARIDAE

#### Subfamily CAMBARELLINAE

#### *Cambarellus*

##### (*Cambarellus*)

9. *alvarezi*.—MEXICO: Nuevo León
10. *areolatus*.—MEXICO: Coahuila
11. *chapalanus*.—MEXICO: Jalisco, Michoacán
12. *chihuahuae*.—MEXICO: Chihuahua
13. *montezumae*.—MEXICO: Distrito Federal, Guanajuato, Hidalgo, Jalisco, Mexico, Michoacán
14. *occidentalis*.—MEXICO: Michoacán, Sinaloa
15. *patzcuarensis*.—MEXICO: Michoacán
16. *prolixus*.—MEXICO: Jalisco

#### 17. *zempoalensis*.—MEXICO: Morelos (*Dirigicambarus*)

18. *shufeldtii*.—USA: Alabama, Arkansas, (Georgia?), Illinois, Kentucky, Louisiana, Mississippi, Missouri, Tennessee, Texas

#### (*Pandicambarus*)

19. *blacki*.—USA: Florida
20. *diminutus*.—USA: Alabama, Mississippi
21. *lesliei*.—USA: Alabama, Mississippi
22. *ninae*.—USA: Texas
23. *puer*.—USA: Arkansas, Illinois, Kentucky, Louisiana, Mississippi, Tennessee, Texas
24. *schmitti*.—USA: Florida
25. *texanus*.—USA: Texas

#### Subfamily CAMBARINAE

#### *Barbicambarus*

26. *cornutus*.—USA: Kentucky, Tennessee

#### *Bouchardina*

27. *robisoni*.—USA: Arkansas

#### *Cambarus*

##### (*Aviticambarus*)

28. *hamulatus*.—USA: Alabama, Tennessee
29. *jonesi*.—USA: Alabama

##### (*Cambarus*)

30. *bartonii bartonii*.—CANADA: New Brunswick, Ontario, Quebec.—USA: Alabama, Connecticut, Delaware, District of Columbia, Georgia, Kentucky, Maryland, Massachusetts, New Jersey, New York, North Carolina, Pennsylvania, Rhode Island, South Carolina, Tennessee, Vermont, Virginia, West Virginia.
31. *bartonii carinirostris*.—USA: Ohio, West Virginia
32. *bartonii cavatus*.—USA: Alabama, Georgia, Kentucky, North Carolina, Ohio, Tennessee, Virginia, West Virginia

33. *howardi*.—USA: Alabama, Georgia  
 34. *ortmanni*.—USA: Indiana, Kentucky, Ohio  
 35. *sciotensis*.—USA: Ohio, Virginia, West Virginia  
 (*Depressicambarus*)  
 36. *catagius*.—USA: North Carolina  
 37. *cymatilis*.—USA: Georgia, Tennessee  
 38. *deweeseae*.—USA: Tennessee  
 39. *englishi*.—USA: Alabama, Georgia  
 40. *graysoni*.—USA: Alabama, Kentucky, Tennessee  
 41. *halli*.—USA: Alabama, Georgia  
 42. *harti*.—USA: Georgia  
 43. *latimanus*.—USA: Alabama, Florida, Georgia, North Carolina, South Carolina, Tennessee  
 44. *obstipus*.—USA: Alabama  
 45. *pyronotus*.—USA: Florida  
 46. *reduncus*.—USA: North Carolina, South Carolina  
 47. *reflexus*.—USA: Georgia, South Carolina  
 48. *sphenoides*.—USA: Kentucky, Tennessee  
 49. *striatus*.—USA: Alabama, Florida, Georgia, Kentucky, Mississippi, South Carolina, Tennessee  
 50. *strigosus*.—USA: Georgia  
 51. *truncatus*.—USA: Georgia  
 (*Erebicambarus*)  
 52. *hubbsi*.—USA: Arkansas, Missouri  
 53. *hubrichti*.—USA: Missouri  
 54. *laevis*.—USA: Illinois?, Indiana, Kentucky?  
 55. *ornatus*.—USA: Kentucky  
 56. *rusticiformis*.—USA: Illinois, Kentucky, Tennessee  
 57. *tenebrosus*.—USA: Alabama, Illinois?, Kentucky, Tennessee  
 (*Exilicambarus*)  
 58. *cracens*.—USA: Alabama  
 (*Hiaticambarus*)  
 59. *chasmodactylus*.—USA: North Carolina, Virginia, West Virginia  
 60. *coosawattae*.—USA: Georgia  
 61. *fasciatus*.—USA: Georgia  
 62. *girardianus*.—USA: Alabama, Georgia, Mississippi?, Tennessee  
 63. *longirostris*.—USA: Georgia, North Carolina, (South Carolina), Tennessee, Virginia  
 64. *longulus*.—USA: North Carolina, Virginia, West Virginia  
 65. *manningi*.—USA: Alabama, Georgia, Tennessee  
 66. *speciosus*.—USA: Georgia  
 (*Jugicambarus*)  
 67. *asperimanus*.—USA: Georgia, North Carolina, South Carolina, Tennessee  
 68. *batchi*.—USA: Kentucky  
 69. *bouchardi*.—USA: Tennessee  
 70. *brachydactylus*.—USA: Tennessee  
 71. *carolinus*.—USA: North Carolina, South Carolina, Tennessee  
 72. *causeyi*.—USA: Arkansas  
 73. *conasaugaensis*.—USA: Georgia, Tennessee  
 74. *crinipes*.—USA: Kentucky, Tennessee  
 75. *cryptodytes*.—USA: Florida, Georgia  
 76. *distans*.—USA: Alabama, Georgia, Kentucky, Tennessee  
 77. *dubius*.—USA: Kentucky, Maryland, North Carolina, Pennsylvania, Tennessee, Virginia, West Virginia  
 78. *friaufi*.—USA: Tennessee  
 79. *gentryi*.—USA: Tennessee  
 80. *monongalensis*.—USA: Pennsylvania, Virginia, West Virginia  
 81. *nodosus*.—USA: Georgia, North Carolina, South Carolina, Tennessee  
 82. *obeyensis*.—USA: Tennessee  
 83. *parvoculus*.—USA: Georgia, Kentucky, Tennessee, Virginia  
 84. *setosus*.—USA: Missouri, Oklahoma?  
 85. *tartarus*.—USA: Oklahoma  
 86. *unestami*.—USA: Alabama, Georgia  
 87. *zophonastes*.—USA: Arkansas  
 (*Lacunicambarus*)  
 88. *acanthura*.—USA: Alabama, Georgia, Tennessee  
 89. *diogenes*.—CANADA: Ontario.—USA: Alabama, Arkansas, Colorado, Delaware, District of Columbia, Florida, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maryland, Michigan, Minnesota, Mississippi, Missouri, Nebraska, New Jersey, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Virginia, West Virginia, Wisconsin  
 90. *ludovicianus*.—USA: Arkansas, Louisiana, Mississippi, Tennessee, Texas  
 91. *miltus*.—USA: Alabama  
 (*Puncticambarus*)  
 92. *acuminatus*.—USA: Maryland, North Carolina, South Carolina, Virginia  
 93. *buntingi*.—USA: Kentucky, Tennessee  
 94. *chaugaensis*.—USA: Georgia, South Carolina  
 95. *coosae*.—USA: Alabama, Georgia, Tennessee  
 96. *cumberlandensis*.—USA: Kentucky, Tennessee  
 97. *extraneus*.—USA: Georgia, Tennessee  
 98. *georgiae*.—USA: Georgia, North Carolina  
 99. *hiwasseensis*.—USA: Georgia, North Carolina  
 100. *nerterius*.—USA: West Virginia  
 101. *parrishi*.—USA: Georgia, North Carolina  
 102. *reburus*.—USA: North Carolina  
 103. *robustus*.—CANADA: Ontario.—USA: Connecticut, Illinois, Indiana, Kentucky, Michigan, New York, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia  
 104. *scotti*.—USA: Alabama, Georgia



105. *spicatus*.—USA: South Carolina  
 106. *veteranus*.—USA: Kentucky, Virginia, West Virginia  
 (*Veticambarus*)  
 107. *pristinus*.—USA: Tennessee
- Distocambarus*  
 (*Distocambarus*)  
 108. *crockeri*.—USA: South Carolina  
 109. *devexus*.—USA: Georgia  
 (*Fitzcambarus*)  
 110. *carlsoni*.—USA: South Carolina  
 111. *youngineri*.—USA: South Carolina
- Fallicambarus*  
 (*Creaserinus*)  
 112. *byersi*.—USA: Alabama, Florida, Mississippi  
 113. *caesius*.—USA: Arkansas  
 114. *danielae*.—USA: Alabama, Mississippi  
 115. *fodiens*.—CANADA: Ontario.—USA: Alabama, Arkansas, Illinois, Indiana, Kentucky, Michigan, Mississippi?, Missouri, Ohio, Tennessee, Wisconsin?  
 116. *hedgpethi*.—USA: Alabama?, Arkansas, Florida?, Georgia?, Louisiana, Mississippi, Oklahoma, Tennessee?, Texas  
 117. *hortoni*.—USA: Tennessee  
 118. *oryktes*.—USA: Alabama, Louisiana, Mississippi  
 119. *uhleri*.—USA: Maryland, North Carolina, South Carolina, Virginia  
 (*Fallicambarus*)  
 120. *dissitus*.—USA: Arkansas, Louisiana  
 121. *harpi*.—USA: Arkansas  
 122. *jeanae*.—USA: Arkansas  
 123. *macneesei*.—USA: Louisiana, Texas  
 124. *strawni*.—USA: Arkansas
- Faxonella*  
 125. *beyeri*.—USA: Louisiana, Texas  
 126. *blairi*.—USA: Arkansas, Oklahoma  
 127. *clypeata*.—USA: Alabama, Arkansas?, Florida, Georgia, Louisiana, Mississippi, Oklahoma?, South Carolina, Texas  
 128. *creaseri*.—USA: Arkansas? Louisiana, Missouri?
- Hobbseus*  
 129. *attenuatus*.—USA: Mississippi  
 130. *cristatus*.—USA: Mississippi  
 131. *orconectoides*.—USA: Mississippi  
 132. *petilus*.—USA: Mississippi  
 133. *prominens*.—USA: Alabama, Mississippi  
 134. *valleculus*.—USA: Mississippi
- Orconectes*  
 (*Billecambarus*)  
 135. *harrisoni*.—USA: Missouri  
 (*Buannulifictus*)  
 136. *hobbsi*.—USA: Louisiana, Mississippi  
 137. *meeki brevis*.—USA: Arkansas, Oklahoma
138. *meeki meeki*.—USA: Arkansas  
 139. *palmeri creolanus*.—USA: Louisiana, Mississippi  
 140. *palmeri longimanus*.—USA: Arkansas, Kansas, Louisiana, Oklahoma, Texas  
 141. *palmeri palmeri*.—USA: Arkansas, Kentucky, Louisiana, Mississippi, Missouri, Tennessee  
 (*Crockerinus*)  
 142. *bisectus*.—USA: Kentucky  
 143. *erichsonianus*.—USA: Alabama, Georgia, Tennessee, Virginia  
 144. *eupunctus*.—USA: Arkansas, Missouri  
 145. *illinoensis*.—USA: Illinois  
 146. *jeffersoni*.—USA: Kentucky  
 147. *marchandi*.—USA: Arkansas, Missouri  
 148. *obscurus*.—CANADA: Ontario.—USA: Maryland, New York, Ohio, Pennsylvania, Virginia, West Virginia  
 149. *propinquus*.—CANADA: Ontario, Quebec.—USA: Illinois, Indiana, Iowa, Massachusetts, Michigan, Minnesota, New York, Ohio, Pennsylvania, Vermont, Wisconsin  
 150. *rafinesquei*.—USA: Kentucky  
 151. *sanbornii erismophorous*.—USA: West Virginia  
 152. *sanbornii sanbornii*.—USA: Kentucky, Ohio, West Virginia  
 153. *shoupi*.—USA: Tennessee  
 154. *stannardi*.—USA: Illinois  
 155. *tricuspis*.—USA: Kentucky  
 156. *virginiensis*.—USA: North Carolina, Virginia  
 (*Faxonius*)  
 157. *indianensis*.—USA: Illinois, Indiana  
 158. *limosus*.—USA: Connecticut, Delaware, District of Columbia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, Virginia, West Virginia.—(EUROPE, widespread in western part)  
 159. *wrighti*.—USA: Tennessee
- (*Gremicambarus*)  
 160. *alabamensis*.—USA: Alabama, Mississippi, Tennessee  
 160a. *causeyi*.—USA: Arkansas? Colorado, Kansas, Missouri? (New Mexico), Oklahoma, Texas  
 161. *chickasawae*.—USA: Mississippi  
 162. *compressus*.—USA: Alabama, Kentucky, Mississippi, Tennessee  
 163. *cooperi*.—USA: Alabama, Tennessee  
 164. *etnieri*.—USA: Mississippi, Tennessee  
 165. *holtii*.—USA: Alabama  
 166. *immunis*.—CANADA: Manitoba, Ontario, Quebec.—USA: Alabama, Arkansas, Colorado, (Connecticut)?, Illinois, Indiana, Iowa, Kansas, Kentucky, (Maine)?, (Massachusetts)?, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, (New Hampshire)?, New York, North

- Dakota, Ohio, (Rhode Island)?, South Dakota, Tennessee, (Vermont)?, Wisconsin, Wyoming
167. *mississippiensis*.—USA: Mississippi
168. *nais*.—USA: Kansas, Oklahoma, Texas?
169. *rhoadesi*.—USA: Tennessee
170. *validus*.—USA: Alabama, Tennessee
171. *virilis*.—CANADA: Alberta, Manitoba, Ontario, Quebec, Saskatchewan.—(MEXICO: Baja California Norte, Chihuahua).—USA: (Alabama), (Arizona), Arkansas, (California), Colorado, (Connecticut)?, (District of Columbia), Illinois, Indiana, Iowa, Kansas, Kentucky, (Maine)?, (Maryland), (Massachusetts)?, Michigan, Minnesota, (Mississippi), Missouri, Montana, Nebraska, (New Hampshire)?, (New Jersey), (New Mexico)?, New York, North Dakota, Ohio, Oklahoma, (Pennsylvania), (Rhode Island)?, South Dakota, (Tennessee), Texas?, Utah, (Vermont)?, (Virginia), (West Virginia), Wisconsin, Wyoming
- (*Hespericambarus*)
172. *blacki*.—USA: Louisiana
173. *deanae*.—USA: New Mexico
174. *difficilis*.—USA: Arkansas, Louisiana, Oklahoma, Texas
175. *hathawayi*.—USA: Louisiana
176. *maletae*.—USA: Louisiana, Texas
177. *perfectus*.—USA: Alabama, Mississippi
- (*Orconectes*)
178. *australis australis*.—USA: Alabama, Tennessee
179. *australis packardi*.—USA: Kentucky
180. *incomptus*.—USA: Tennessee
181. *inermis inermis*.—USA: Indiana, Kentucky
182. *inermis testii*.—USA: Indiana
183. *pellucidus*.—USA: Kentucky, Tennessee
- (*Procericambarus*)
184. *acares*.—USA: Arkansas
185. *barrenensis*.—USA: Kentucky, Tennessee
186. *forceps*.—USA: Alabama, Georgia, Tennessee, Virginia
187. *hylas*.—USA: Missouri
188. *leptogonopodus*.—USA: Arkansas, Oklahoma
189. *longidigitus*.—USA: Arkansas, Missouri
190. *luteus*.—USA: Arkansas, Kansas, Missouri
191. *macrus*.—USA: Arkansas, Missouri
192. *medius*.—USA: Missouri
193. *menae*.—USA: Arkansas, Oklahoma
194. *mirus*.—USA: Alabama, Tennessee
195. *nana*.—USA: Arkansas, Oklahoma
196. *neglectus chaenodactylus*.—USA: Arkansas, Missouri
197. *neglectus neglectus*.—USA: Arkansas, Colorado, Kansas, Missouri, Nebraska, Oklahoma, (Oregon)
198. *ozarkae*.—USA: Arkansas, Missouri
199. *peruncus*.—USA: Missouri
200. *placidus*.—USA: Alabama, Illinois, Kentucky, Tennessee
201. *punctimanus*.—USA: Arkansas, Missouri
202. *putnami*.—USA: Indiana, Kentucky, Tennessee
203. *quadruncus*.—USA: Missouri
204. *rusticus*.—CANADA: Ontario.—USA: (Connecticut)?, Illinois, Indiana, Iowa, Kentucky, (Maine)?, (Massachusetts)?, Michigan, Minnesota, (New Hampshire)?, (New Jersey), (New Mexico), (New York), Ohio, (Pennsylvania)?, (Tennessee)?, (Vermont)?, (West Virginia)?, Wisconsin
205. *saxatilis*.—USA: Oklahoma
206. *spinus*.—USA: Alabama, Georgia, Tennessee, Virginia?, West Virginia?
207. *williamsi*.—USA: Arkansas, Missouri
- (*Rhoadesius*)
208. *kentuckiensis*.—USA: Kentucky, Illinois
209. *sloanii*.—USA: Indiana, Ohio
- (*Tragulicambarus*)
210. *lancifer*.—USA: Arkansas, Illinois, Kentucky, Louisiana, Mississippi, Missouri, Tennessee, Texas
- Procambarus*
- (*Acucauda*)
211. *fitzpatricki*.—USA: Mississippi
- (*Austrocambarus*)
212. *acanthophorus*.—MEXICO: Chiapas, Oaxaca, Veracruz
213. *atkinsoni*.—CUBA: Isla de Pinos
214. *cubensis cubensis*.—CUBA: Camagüey, Isla de Pinos, La Habana, Las Villas, Matanzas, Oriente, Pinar del Río
215. *cubensis rivalis*.—CUBA: Pinar del Río
216. *llamasi*.—GUATEMALA.—MEXICO: Campeche, Chiapas, Tabasco, Veracruz, Yucatán
217. *mexicanus*.—MEXICO: Veracruz
218. *mirandai*.—MEXICO: Chiapas
219. *niveus*.—CUBA: Pinar del Río
220. *oaxacae oaxacae*.—MEXICO: Oaxaca
221. *oaxacae reddelli*.—MEXICO: Oaxaca, Veracruz
222. *pilosimanus*.—BELIZE.—GUATEMALA.—MEXICO: Chiapas, Quintana Roo
- †223. *primaevus*.—USA: Wyoming (Eocene fossils—extinct)
224. *rodriguezi*.—MEXICO: Veracruz
225. *ruthveni*.—MEXICO: Veracruz
226. *sbordonii*.—MEXICO: Chiapas
227. *vazquezae*.—MEXICO: Veracruz
228. *veracruzanus*.—MEXICO: Veracruz
229. *williamsoni*.—GUATEMALA.—HONDURAS
230. *zapoapensis*.—MEXICO: Veracruz
- (*Capillicambarus*)
231. *brazoriensis*.—USA: Texas
232. *hinei*.—USA: Louisiana, Texas
233. *incilis*.—USA: Texas
- (*Girardiella*)
234. *barbiger*.—USA: Mississippi

235. *cometes*.—USA: Mississippi  
 236. *connus*.—USA: Mississippi  
 237. *curdi*.—USA: Arkansas, Oklahoma, Texas  
 238. *gracilis*.—USA: Illinois, Indiana, Iowa, Kansas?, Missouri, Oklahoma?, Texas?, Wisconsin  
 239. *hagenianus hagenianus*.—USA: Alabama, Mississippi  
 240. *hagenianus vesticeps*.—USA: Mississippi  
 241. *liberorum*.—USA: Arkansas  
 242. *parasimulans*.—USA: Arkansas  
 243. *pogum*.—USA: Mississippi  
 244. *regiomontanus*.—MEXICO: Nuevo León, Tamaulipas  
 245. *reimeri*.—USA: Arkansas  
 246. *simulans*.—USA: Arkansas, Colorado, Kansas?, Louisiana, New Mexico, Oklahoma, Texas  
 247. *tulanei*.—USA: Arkansas, Louisiana  
 (*Hagenides*)  
 248. *advena*.—USA: Georgia  
 249. *caritus*.—USA: Georgia  
 250. *geodytes*.—USA: Florida  
 251. *pygmaeus*.—USA: Florida, Georgia  
 252. *rogersi campestris*.—USA: Florida  
 253. *rogersi expletus*.—USA: Florida  
 254. *rogersi ochlocknensis*.—USA: Florida  
 255. *rogersi rogersi*.—USA: Florida  
 256. *talpoides*.—USA: Florida, Georgia  
 257. *truculentus*.—USA: Georgia  
 (*Leconticambarus*)  
 258. *alleni*.—USA: Florida  
 259. *apalachicola*.—USA: Florida  
 260. *barbatus*.—USA: Georgia, South Carolina  
 261. *capillatus*.—USA: Alabama, Florida  
 262. *econfinae*.—USA: Florida  
 263. *escambiensis*.—USA: Alabama, Florida  
 264. *hubbelli*.—USA: Alabama, Florida  
 265. *kilbyi*.—USA: Florida  
 266. *latipleurum*.—USA: Florida  
 267. *mülleri*.—USA: Florida  
 268. *pubischelae deficiens*.—USA: Georgia  
 269. *pubischelae pubischelae*.—USA: Florida, Georgia  
 270. *rathbunae*.—USA: Florida  
 271. *shermani*.—USA: Alabama, Florida, Louisiana, Mississippi  
 (*Lonnbergius*)  
 272. *acherontis*.—USA: Florida  
 (*Mexicambarus*)  
 273. *bouvieri*.—MEXICO: Michoacán  
 (*Ortmanicus*)  
 274. *acutissimus*.—USA: Alabama, Georgia, Mississippi  
 275. *acutus acutus*.—USA: Alabama, Arkansas, (California), (Connecticut), Delaware, Florida, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, (Maine), Maryland, (Massachusetts), Michigan, Minnesota, Mississippi, Missouri, New Jersey, New York, North Carolina, Ohio, Oklahoma, Pennsylvania, (Rhode Island), South Carolina, Tennessee, Texas, Virginia, Wisconsin  
 276. *acutus cuevachicae*.—MEXICO: Hidalgo, Puebla, San Luis Potosí, Tamaulipas, Veracruz  
 277. *ancylus*.—USA: North Carolina, South Carolina  
 278. *angustatus*.—USA: Georgia (probably extinct)  
 279. *bivittatus*.—USA: Alabama?, Florida, Louisiana, Mississippi  
 280. *blandingii*.—USA: North Carolina, South Carolina  
 281. *caballeroi*.—MEXICO: Puebla  
*chacei*.—See *enoplosternum*  
 282. *delicatus*.—USA: Florida  
 283. *enoplosternum* (including *P.(O.) chacei*).—USA: Georgia, South Carolina  
 284. *epicyrtus*.—USA: Georgia  
 285. *erythropros*.—USA: Florida  
 286. *evermanni*.—USA: Alabama, Florida, Mississippi  
 287. *fallax*.—USA: Florida, Georgia  
 288. *franzi*.—USA: Florida  
 289. *geminus*.—USA: Arkansas, Louisiana  
 290. *gonopodocristatus*.—MEXICO: Veracruz  
 291. *hayi*.—USA: Alabama, Mississippi, Tennessee  
 292. *hirsutus*.—USA: South Carolina  
 293. *horsti*.—USA: Florida  
 294. *hybus*.—USA: Alabama, Mississippi  
 295. *jaculus*.—USA: Louisiana, Mississippi  
 296. *lecontei*.—USA: Alabama, Mississippi  
 297. *leitheuseri*.—USA: Florida  
 298. *leonensis*.—USA: Florida  
 299. *lepidodactylus*.—USA: North Carolina, South Carolina  
 300. *lewisi*.—USA: Alabama  
 301. *litosternum*.—USA: Georgia  
 302. *lophotus*.—USA: Alabama, Georgia, Tennessee  
 303. *lucifugusalachua*.—USA: Florida  
 304. *lucifugus lucifugus*.—USA: Florida  
 305. *lunzi*.—USA: Georgia, South Carolina  
 306. *mancus*.—USA: Mississippi  
 307. *marthae*.—USA: Alabama  
 308. *medialis*.—USA: North Carolina  
 309. *orcinus*.—USA: Florida  
 310. *pallidus*.—USA: Florida  
 311. *pearsei*.—USA: North Carolina, South Carolina  
 312. *pictus*.—USA: Florida  
 313. *planirostris*.—USA: Louisiana, Mississippi  
 314. *plumimanus*.—USA: North Carolina  
 315. *pubescens*.—USA: Georgia, South Carolina  
 316. *pycnogonopodus*.—USA: Florida  
 317. *seminolae*.—USA: Florida, Georgia  
 318. *texanus*.—USA: Texas  
 319. *tolteca*.—MEXICO: Hidalgo, San Luis Potosí, Tamaulipas  
 320. *verrucosus*.—USA: Alabama



321. *viaeiridis*.—USA: Alabama, Arkansas, Illinois, Kentucky, Louisiana, Mississippi, Missouri, Tennessee
322. *villalobosi*.—MEXICO: San Luis Potosí
323. *xilitlae*.—MEXICO: San Luis Potosí
324. *youngi*.—USA: Florida
- (*Paracambarus*)
325. *ortmanni*.—MEXICO: Puebla
326. *paradoxus*.—MEXICO: Puebla
- (*Pennides*)
327. *ablusus*.—USA: Mississippi, Tennessee
328. *clemmeri*.—USA: Alabama, Mississippi
329. *dupratzi*.—USA: Arkansas, Louisiana, Texas
330. *echinatus*.—USA: South Carolina
331. *elegans*.—USA: Arkansas, Louisiana, Mississippi
332. *gibbus*.—USA: Georgia
333. *lagniappe*.—USA: Mississippi
334. *lylei*.—USA: Mississippi
335. *natchitochae*.—USA: Arkansas, Louisiana, Texas
336. *ouachitae*.—USA: Arkansas, Mississippi
337. *penni*.—USA: Louisiana, Mississippi
338. *petersi*.—USA: Georgia
339. *raneyi*.—USA: Georgia, South Carolina
340. *roberti*.—MEXICO: San Luis Potosí
341. *spiculifer*.—USA: Alabama, Florida, Georgia, Mississippi, South Carolina
342. *suttkusi*.—USA: Alabama, Florida
343. *versutus*.—USA: Alabama, Florida, Georgia
344. *vioscai*.—USA: Alabama, Arkansas, Louisiana, Mississippi
- (*Procambarus*)
345. *digueti*.—MEXICO: Jalisco, Michoacán
- (*Remoticambarus*)
346. *pecki*.—USA: Alabama
- (*Scapulicambarus*)
347. *clarkii*.—(BELIZE).—(BRAZIL).—(COSTA RICA).—(DOMINICAN REPUBLIC).—(ECUADOR).—(EL SALVADOR).—(GUATEMALA).—(HONDURAS).—(JAPAN).—MEXICO: (Baja California Norte), (Chihuahua), (Coahuila), (Nuevo León), (Sonora).—(NICARAGUA).—USA: Alabama, (Arizona)?, Arkansas, (California), Florida, (Georgia), (Hawaii), (Idaho), Illinois, Indiana, Kentucky, Louisiana, (Maryland), Mississippi, Missouri, (Nevada), (New Mexico), (North Carolina), (Ohio), Oklahoma, (Oregon), (South Carolina), Tennessee, Texas, (Utah), (Virginia).—(VENEZUELA). (See also *P. (S.) clarkii* in checklist for introductions on other continents and islands.)
348. *howellae*.—USA: Georgia
349. *okaloosae*.—USA: Alabama, Florida
350. *paeninsulanus*.—USA: Florida, Georgia
351. *strenthi*.—MEXICO: San Luis Potosí
352. *troglydites*.—USA: Georgia, South Carolina
- (*Tenuicambarus*)
353. *tenuis*.—Arkansas, Oklahoma
- (*Villalobosus*)
354. *contrerasi*.—MEXICO: Puebla
355. *cuetzalananae*.—MEXICO: Puebla
356. *erichsoni*.—MEXICO: Hidalgo
357. *hoffmanni*.—MEXICO: Puebla, Veracruz
358. *hortonhobbsi*.—MEXICO: Puebla
359. *riojai*.—MEXICO: Hidalgo, Puebla
360. *teziutlanensis*.—MEXICO: Puebla, Veracruz
361. *tlapacoyanensis*.—MEXICO: Veracruz
362. *xochitlananae*.—MEXICO: Puebla
363. *zihuatlensis*.—MEXICO: Puebla
- Troglocambarus*
364. *maclanei*.—USA: Florida
- Family PARASTACIDAE
- Parastacus*
365. *brasilensis*.—BRAZIL: Rio Grande do Sul
366. *defossus*.—BRAZIL: Rio Grande do Sul.—URUGUAY: Montevideo
367. *laevigatus*.—BRAZIL: Santa Catarina
368. *nicoleti*.—CHILE: Aysen, Valdivia
369. *pilimanus*.—BRAZIL: Rio Grande do Sul.—URUGUAY: Canelones
370. *pugnax*.—CHILE: Aysen, Concepción, Malleco, Nuble
371. *saffordi*.—URUGUAY: Montevideo
372. *varicosus*.—BRAZIL: Rio Grande do Sul.—URUGUAY: Maldonado, Rocha
- Samastacus*
373. *araucanius*.—CHILE: Valdivia
374. *spinifrons*.—CHILE: Arauco, Concepción, Llanquihue, Nuble, Valparaíso.—ARGENTINA?: Neuquen
- Additional Species Described in 1987 and 1988
375. *Cambarus (Jugicambarus) aculabrum*.—USA: Arkansas
376. *Fallicambarus (Creaserinus) burrisi*.—USA: Alabama, Mississippi
377. *Fallicambarus (Creaserinus) gordonii*.—USA: Mississippi
378. *Fallicambarus (Fallicambarus) devastator*.—USA: Texas
379. *Procambarus (Austrocambarus) olmecorum*.—MEXICO: Veracruz
380. *Cambarus (Erebicambarus) maculatus*.—USA: Missouri
381. *Procambarus (Girardiella) ferrugineus*.—USA: Arkansas
382. *Procambarus (Girardiella) regalis*.—USA: Arkansas

## Appendix 2

### Alphabetical List of American Countries and States, or Provinces, and Their Crayfish Faunas

Only those political units in which crayfishes are known to occur are included. The bibliographic citations are to regional summary works listed in the "Literature Cited" that should be helpful in studying the crayfishes of the various areas. The numbers refer to the list of species in Appendix 1 (not to those identifying the illustrations). A question mark immediately following a number signifies that the record is believed to be in need of confirmation. Areas occupied as a result of known, virtually certain, or suspected (if followed by a question mark) introductions are noted by parentheses. The total number of species reported or known to occur in each political unit is noted in brackets following the species list.

- ARGENTINA (Riek, 1971).—374? [1]  
BELIZE (Villalobos, 1955, 1983).—222, (347) [2]  
BRAZIL (Buckup and Rossi, 1980; Riek, 1971)  
Rio Grande do Sul.—(347), 365, 366, 369, 372 [4]  
Santa Catarina.—367 [1]  
CANADA (Crocker and Barr, 1968; Riegel, 1959)  
Alberta.—171 [1]  
British Columbia.—6, 7, 8 [3]  
Manitoba.—166, 171 [2]  
New Brunswick.—30, [1]  
Ontario.—30, 89, 103, 115, 148, 149, 166, 171, 204 [9]  
Quebec.—30, 149, 166, 171 [4]  
Saskatchewan.—171 [1]  
CHILE (Bahamonde, 1951; Holthuis, 1952; Riek, 1971).—  
368, 370, 373, 374 [4]  
COSTA RICA.—(347) [1]  
CUBA (Hobbs and Villalobos, 1964)  
Camagüey.—214 [1]  
Isla de Pinos.—213, 214 [2]  
La Habana.—214 [1]  
Las Villas.—214 [1]  
Matanzas.—214 [1]  
Oriente.—214 [1]  
Pinar del Río.—214, 215, 219 [3]  
DOMINICAN REPUBLIC.—(347) [1]  
ECUADOR.—(347) [1]  
EL SALVADOR.—(347) [1]  
GUATEMALA (Villalobos, 1955, 1983).—216, 222, 229,  
(347) [4]  
HONDURAS (Villalobos, 1955, 1983).—229, (347) [2]  
MEXICO (Villalobos, 1955, 1983)  
Baja California Norte.—(171), (347) [2]  
Campeche.—216 [1]  
Chiapas.—212, 216, 218, 222, 226 [5]  
Chihuahua.—12, (171), (347) [3]  
Coahuila.—10, (347) [2]  
Distrito Federal.—13 [1]  
Guanojuato.—13 [1]  
Hidalgo.—13, 276, 319, 356, 359 [5]  
Jalisco.—11, 13, 16, 345 [4]  
Mexico.—13 [1]  
Michoacán.—11, 13, 14, 15, 273, 345 [6]  
Morelos.—17 [1]  
Nuevo León.—9, 244, 347 [3]  
Oaxaca.—212, 220, 221 [3]  
Puebla.—276, 281, 325, 326, 354, 355, 357, 358, 359, 360,  
362, 363 [12]  
Quintana Roo.—222 [1]  
San Luis Potosí.—276, 319, 322, 323, 340, 351 [6]  
Sinaloa.—14 [1]  
Sonora.—(347) [1]  
Tabasco.—216 [1]  
Tamaulipas.—244, 276, 319 [3]  
Veracruz.—212, 216, 217, 221, 224, 225, 227, 228, 230,  
276, 290, 357, 360, 361, 379 [15]  
Yucatán.—216 [1]  
NICARAGUA.—(347) [1]  
VENEZUELA.—(347) [1]  
UNITED STATES  
Alabama (Hobbs, 1942b, 1968b, 1969b, 1981).—18, 20, 21,  
28, 29, 30, 32, 33, 39, 40, 41, 43, 44, 49, 57, 58, 62, 65,  
76, 86, 88, 89, 91, 95, 104, 112, 114, 115, 116?, 118, 127,  
133, 143, 160, 162, 163, 165, 166, 170, (171), 177, 178,  
186, 194, 200, 206, 239, 261, 263, 264, 271, 274, 275,  
279?, 286, 291, 294, 296, 300, 302, 307, 320, 321, 328,  
341, 342, 343, 344, 346, 347, 349, 376 [72]  
Arizona (Penn and Hobbs, 1958; Reimer, 1969).—(160a),  
(171?), (347) [3]

- Arkansas (Penn, 1959, Reimer, 1969; Williams, 1954; Bouchard and Robison, 1981).—18, 23, 27, 52, 72, 87, 89, 90, 113, 115, 116, 120, 121, 122, 124, 126, 127?, 128?, 137, 138, 140, 141, 144, 147, (160a?), 166, 171, 174, 184, 188, 189, 190, 191, 193, 195, 196, 197, 198, 201, 207, 210, 237, 241, 242, 245, 246, 247, 275, 289, 321, 329, 331, 335, 336, 344, 347, 353, 375, 381, 382 [60]
- California (Bouchard, 1980a; Eng and Daniels, 1982; Riegel, 1959).—3, 4?, 5, 6, (7), (8)?, (171), (275), (347) [9]
- Colorado (Engle, 1926; Unger, 1978).—89, 160a, 166, 171, 197, 246 [6]
- Connecticut (Crocker, 1979; D.G. Smith, 1979).—30, 103, 158, (166)?, (171)?, (204)?, (275) [7]
- Delaware (Bouchard, 1982; Francois, 1959; Meredith and Schwartz, 1960).—30, 89, 158, 275 [4]
- District of Columbia (Meredith and Schwartz, 1960).—30, 89, 158, (171) [4]
- Florida (Hobbs, 1942b, 1981).—19, 24, 43, 45, 49, 75, 89, 112, 116?, 127, 250, 251, 252, 253, 254, 255, 256, 258, 259, 261, 262, 263, 264, 265, 266, 267, 269, 270, 271, 272, 275, 279, 282, 285, 286, 287, 288, 293, 297, 298, 303, 304, 309, 310, 312, 316, 317, 324, 341, 342, 343, 347, 349, 350, 364 [55]
- Georgia (Hobbs, 1981).—(18)?, 30, 32, 33, 37, 39, 41, 42, 43, 47, 49, 50, 51, 60, 61, 62, 63, 65, 66, 67, 73, 75, 76, 81, 83, 86, 88, 89, 94, 95, 97, 98, 99, 101, 104, 109, 116?, 127, 143, 186, 206, 248, 249, 251, 256, 257, 260, 268, 269, 274, 275, 278, 283, 284, 287, 301, 302, 305, 315, 317, 332, 338, 339, 341, 343, (347), 348, 350, 352 [69]
- Hawaii.—(347), [1]
- Idaho (Riegel, 1959).—1, 2, 3, 4, 6, 7, 8, (347) [8]
- Illinois (Page, 1985b).—18, 23, 54?, 56, 57?, 89, 103, 115, 145, 149, 154, 157, 166, 171, 200, 204, 208, 210, 238, 275, 321, 347 [22]
- Indiana (Page, 1985b; Hobbs III and Jass, 1988).—34, 54, 89, 103, 115, 149, 157, 166, 171, 181, 182, 202, 204, 209, 238, 275, 347 [17]
- Iowa (Phillips, 1980, 1981).—89, 149, 166, 171, 204, 238, 275 [7]
- Kansas (Williams and Leonard, 1952).—89, 140, 160a, 166, 168, 171, 190, 197, 238?, 246?, 275 [11]
- Kentucky (Burr and Hobbs, 1984; Ortmann, 1931; Rhoades, 1944a).—18, 23, 26, 30, 32, 34, 40, 48, 49, 54?, 55, 56, 57, 68, 74, 76, 77, 83, 89, 93, 96, 103, 106, 115, 141, 142, 146, 150, 152, 155, 162, 166, 171, 179, 181, 183, 185, 200, 202, 204, 208, 210, 275, 321, 347 [45]
- Louisiana (Penn, 1952a, 1956b, 1959; Penn and Marlow, 1959).—18, 23, 89, 90, 116, 118, 120, 123, 125, 127, 128, 136, 139, 140, 141, 172, 174, 175, 176, 210, 232, 246, 247, 271, 275, 279, 289, 295, 313, 321, 329, 331, 335, 337, 344, 347 [36]
- Maine (Crocker, 1979; D.G. Smith, 1979).—158, (166)?, (171)?, (204)?, (275) [5]
- Maryland (Meredith and Schwartz, 1960).—30, 77, 89, 92, 119, 148, 158, (171), 275, (347) [10]
- Massachusetts (Crocker, 1979; D.G. Smith, 1979, 1988).—30, 149, 158, (166)?, (171)?, (204)?, (275) [7]
- Michigan (Creaser, 1931b).—89, 103, 115, 149, 166, 171, 204, 275 [8]
- Minnesota (Creaser, 1932, Page, 1985b; Hobbs III and Jass, 1988).—89, 149, 166, 171, 204, 275 [6]
- Mississippi (Hobbs, 1942b, 1981; see also references for Louisiana).—18, 20, 21, 23, 49, 62?, 89, 90, 112, 114, 115?, 116, 118, 127, 129, 130, 131, 132, 133, 134, 136, 139, 141, 160, 161, 162, 164, 166, 167, (171), 177, 210, 211, 234, 235, 236, 239, 240, 243, 271, 274, 275, 279, 286, 291, 294, 295, 296, 306, 313, 321, 327, 328, 331, 333, 334, 336, 337, 341, 344, 347, 376, 377 [63]
- Missouri (Gardner, 1986; Page, 1985b; Pflieger, 1987a, b; Williams, 1954).—18, 52, 53, 84, 89, 115, 128?, 135, 141, 144, 147, 160a?, 166, 171, 187, 189, 190, 191, 192, 196, 197, 198, 199, 201, 203, 207, 210, 238, 275, 321, 347, 380 [32]
- Montana (Riegel, 1959).—4, 166, 171 [3]
- Nebraska (Reimer, 1969; Unger, 1978; Williams, 1954).—89, 166, 171, 197 [4]
- Nevada (Engle, 1926; Reimer, 1969; Riegel, 1959).—4, (7), (8), (347) [4]
- New Hampshire (Aiken, 1965; Crocker, 1979; D.G. Smith, 1979).—158, (166)?, (171)?, (204)? [4]
- New Jersey (Bouchard, 1982; Francois, 1959).—30, 89, 158, (171), (204), 275 [6]
- New Mexico (Penn and Hobbs, 1958; Reimer, 1969).—(160a), (171)?, 173, (204), 246, (347) [6]
- New York (Crocker, 1957).—30, 103, 148, 149, 158, 166, 171, (204), 275 [9]
- North Carolina (Bouchard, 1976a, 1976b; Hobbs, 1968b, 1969b, 1981; Ortmann, 1931).—30, 32, 36, 43, 46, 59, 63, 64, 67, 71, 77, 81, 89, 92, 98, 99, 101, 102, 103, 119, 156, 275, 277, 280, 299, 308, 311, 314, (347) [29]
- North Dakota (Phillips, 1980; Hobbs III and Jass, 1988).—89, 166, 171 [3]
- Ohio (Jezerinac and Thoma, 1984; Rhoades, 1944a, 1944b; Turner, 1926).—31, 32, 34, 35, 89, 103, 115, 148, 149, 152, 166, 171, 204, 209, 275, (347) [16]
- Oklahoma (Creaser and Ortenberger, 1933; Dunlap, 1951; Reimer, 1969).—84?, 85, 89, 116, 126, 127?, 137, 140, 160a, 168, 171, 174, 188, 193, 195, 197, 205, 237, 238?, 246, 275, 347, 353 [23]
- Oregon (G.C. Miller, 1960; Riegel, 1959).—1, 2, 4, 6, 7, 8, (197), (347) [8]
- Pennsylvania (Ortmann, 1906b).—30, 77, 80, 89, 103, 148, 149, 158, (171), (204)?, 275 [11]
- Rhode Island (Crocker, 1979; D.G. Smith, 1979).—30, 158, (166)?, (171)?, (275) [5]
- South Carolina (Hobbs, 1968b, 1969b, 1981; Ortmann, 1931).—30, 43, 46, 47, 49, (63), 67, 71, 81, 89, 92, 94,



- 105, 108, 110, 111, 119, 127, 260, 275, 277, 280, 283, 292, 299, 305, 311, 315, 330, 339, 341, (347), 352 [33]
- South Dakota (Phillips, 1980; Page, 1985b).—89, 166, 171 [3]
- Tennessee (Bouchard, 1972b, 1976a, 1976b, 1978a; Hobbs, 1969b, 1981; Ortmann, 1931).—18, 23, 26, 28, 30, 32, 37, 38, 40, 43, 48, 49, 56, 57, 62, 63, 65, 67, 69, 70, 71, 73, 74, 76, 77, 78, 79, 81, 82, 83, 88, 89, 90, 93, 95, 96, 97, 103, 107, 115, 116?, 117, 141, 143, 153, 159, 160, 162, 163, 164, 166, 169, 170, (171), 178, 180, 183, 185, 186, 194, 200, 202, (204)?, 206, 210, 275, 291, 302, 321, 327, 347 [71]
- Texas (Penn and Hobbs, 1958).—18, 22, 23, 25, 89, 90, 116, 123, 125, 127, 140, 160a, 168?, 171?, 174, 176, 197, 210, 231, 232, 233, 237, 238?, 246, 275, 318, 329, 335, 347, 378 [30]
- Utah (Riegel, 1959; Johnson, 1986).—4, (7)?, (171), (347) [4] Vermont (Crocker, 1979; D.G. Smith, 1979).—30, 149, 158, (166)?, (171)?, (204)? [6]
- Virginia (Hobbs, 1968b, 1969b; Meredith and Schwartz, 1960; Ortmann, 1931).—30, 32, 35, 59, 63, 64, 77, 80, 83, 89, 92, 103, 106, 119, 143, 148, 156, 158, (171), 186, 206?, 275, (347) [23]
- Washington (G.C. Miller, 1960; Riegel, 1959).—4, 6, 7, 8, (152) [5]
- West Virginia (Lawton, 1979; Ortmann, 1931).—30, 31, 32, 35, 59, 64, 77, 88, 80, 89, 100, 103, 106, 115, 148, 151, 152, 158, (171), (204)?, 206? [20]
- Wisconsin (Hobbs III and Jass, 1988; Creaser, 1932).—89, 115?, 149, 166, 171, 204, 238, 275 [8]
- Wyoming (Creaser, 1932; Feldmann et al., 1981; Packard, 1880; Riegel, 1959).—4, 166, 171, 223 [4]
- URUGUAY (Amestoy, 1983; Buckup and Rossi, 1980; Riek, 1971)
- Canelones.—369 [1]
- Maldonada.—372 [1]
- Montevideo.—366 371 [2]

## Appendix 3

### Alphabetical List of American Crayfishes Described during 1987 and 1988

Descriptions of the species listed here appeared after the manuscript had been completed. Moreover, arrangements of the illustrations of the previously described crayfishes had already been accomplished, and new ones could not be properly inserted among them.

#### *Cambarus (Jugicambarus) aculabrum* Hobbs and Brown

FIGURE 375

*Cambarus (Jugicambarus) aculabrum* Hobbs and Brown, 1987:1040, figs. 1, 2a-c, e, j, n.

TYPES.—Holotype, allotype, and morphotype, USNM 219149, 219150, 219151 (male I, female, male II); paratypes, USNM.

TYPE LOCALITY.—Logan Cave, about 11 km east of Siloam Springs, Benton County, Arkansas (Gallatin Quadrangle, T. 18N, R. 32W, Sec. 33; 36°11'50"N, 94°22'50"W).

RANGE.—Known from only two localities in Benton County, Arkansas.

HABITAT.—Subterranean waters.

#### *Fallicambarus (Creaserinus) burrisi* Fitzpatrick

FIGURE 376

*Fallicambarus (Creaserinus) burrisi* Fitzpatrick, 1987b:433, figs. 1, 2a-d.

TYPES.—Holotype, allotype, and morphotype, USNM 206881, 206882, 206883 (male I, female, male II); paratypes, USNM, MMNH.

TYPE LOCALITY.—Hillside *Sarracenia* bog, Greene County, Mississippi (E 1/2, Sec. 21, T. 4N, R. 5W).

RANGE.—Chickasawhay and Escatawpa river basins in Alabama and Mississippi.

HABITAT.—Burrows in *Sarracenia* bogs (primary burrower).

#### *Fallicambarus (Creaserinus) gordonii* Fitzpatrick

FIGURE 377

*Fallicambarus (Creaserinus) gordonii* Fitzpatrick, 1987b:439, figs. 2e-i, 3.

TYPES.—Holotype, allotype, USNM 206877, 206878 (male I, female); paratypes, USNM, MMNH.

TYPE LOCALITY.—DeSoto National Forest, Camp Shelby Military Reservation, Perry County, Mississippi (SE 1/4, NE 1/4, SE 1/4, Sec. 5, T. 2N, R. 10W).

RANGE.—Known only from the Pascagoula River basin in the DeSoto National Forest, Perry County, Mississippi.

HABITAT.—Burrows (primary burrower).

#### *Fallicambarus (Fallicambarus) devastator* Hobbs and Whiteman

FIGURE 378

*Fallicambarus (Fallicambarus) devastator* Hobbs and Whiteman, 1987:403, figs. 1, 2.

TYPES.—Holotype, allotype, and morphotype, USNM 218546, 218547, 218548 (male I, female, male II); paratypes, USNM.

TYPE LOCALITY.—Angelina County Airport in Burke Community, about 5 miles (8 km) south of Lufkin, Angelina County, Texas.

RANGE.—Neches River basin in eastern Texas.

HABITAT.—Burrows (primary burrower).

#### *Procambarus (Austrocambarus) olmecorum* Hobbs

FIGURE 379

*Procambarus (Austrocambarus) olmecorum* Hobbs, 1987:208, fig. 3.

TYPES.—Holotype, allotype, morphotype, USNM 217626, 217627, 217628 (male I, female, male II); paratypes, USNM.

TYPE LOCALITY.—Arroyo to Río Metlac near "edge" of Fortín de Las Flores, Veracruz, Mexico.

RANGE.—Basins of the Atoyac and Jamapa rivers at elevations of 800 to 1600 meters, Veracruz, Mexico.

HABITAT.—Lentic and lotic situations.

#### *Cambarus (Erebicambarus) maculatus* Hobbs and Pflieger

*Cambarus (Erebicambarus) maculatus* Hobbs and Pflieger, 1988:644, figs. 1-3.

TYPES.—Holotype, allotype, morphotype, USNM 219292, 219293, 219280 (male I, female, male II); paratypes, Ronald D. Oesch, USNM.

TYPE LOCALITY.—Hazel Creek at Route C, 8 miles (12.8 km) northeast of Courtois, Washington County, Missouri (T. 36N, R. 1W, SE  $\frac{1}{4}$ , Sec. 24).

RANGE.—Meramec River basin in eastern Missouri.

HABITAT.—Streams.

***Procambarus (Girardiella) ferrugineus* Hobbs and Robison**

*Procambarus (Girardiella) ferrugineus* Hobbs and Robison, 1988:391, figs. 1, 2, 12, 15.

TYPES.—Holotype and allotype, USNM 218841, 218842 (male I, female); paratypes, USNM.

TYPE LOCALITY.—Roadside ditch 10 miles (16 km) south of Lonoke on State Route 31, Lonoke County, Arkansas (T. 1S, R. 8W, Sec. 6).

RANGE.—Known from only two localities in Lonoke County, Arkansas.

HABITAT.—Has been taken only from simple burrows.

***Procambarus (Girardiella) regalis* Hobbs and Robison**

*Procambarus (Girardiella) regalis* Hobbs and Robison, 1988:398, figs. 3, 4, 14, 15.

TYPES.—Holotype, allotype, and morphotype, USNM 219244, 219245, 219246 (male I, female, male II); paratypes, USNM.

TYPE LOCALITY.—DeAnn Cemetery, about 1 mile (1.6 km) west of the junction of State Routes 19 and 24, on latter, at western city limit of Prescott, Nevada County, Arkansas (T. 11S, R. 22W, Sec. 8).

RANGE.—Ouachita and Red River basins of Nevada, Howard, and Sevier counties, Arkansas.

HABITAT.—Simple burrows and temporary pools.



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## Figures 1-379

### Explanation of Illustrations

All of the illustrations except Figure 14*d*, which was redrawn from Villalobos (1952:527), and Figures 365 and 369, which were modified from Buckup and Rossi (1980), were made from camera lucida drawings sketched during the preparation of this manuscript or its predecessor (Hobbs, 1974b). The lettering used in Figure 1 applies to Figures 2 through 7; that in Figure 8, to Figures 9 through 123, 128 through 210, and 375 through 378; that in Figure 124, to Figures 125 through 127; that in Figure 211, to Figures 212 through 364, and Figure 379; and that in Figure 365, to Figures 366-374.

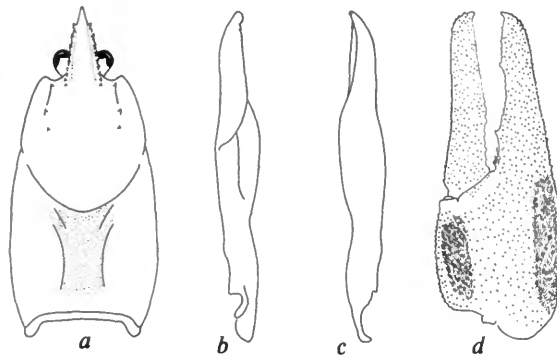
FIGURES 1-7.—*a*, dorsal view of carapace of male; *b*, mesial view of first pleopod of male; *c*, lateral view of first pleopod of male; *d*, dorsal view of chela of male.

FIGURES 8-123, 128-210, 375-378.—*a*, dorsal view of carapace of male, form I; *b*, mesial view of first pleopod of male, form I; *c*, lateral view of first pleopod of male, form I; *d*, lateral view of first pleopod of male, form II; *e*, annulus ventralis and postannular sclerite; *f*, dorsal view of right chela of male, form I. (Figure 14*d* after Villalobos, 1952.)

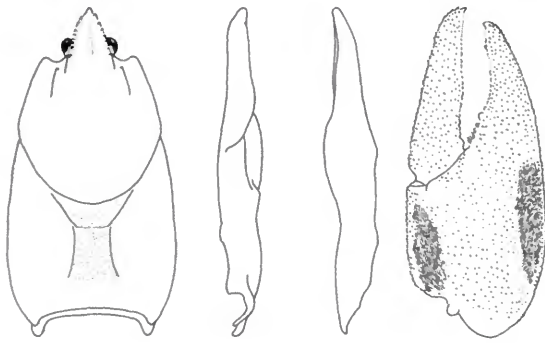
FIGURES 124-127.—*a*, dorsal view of carapace of male, form I; *b*, mesial view of first pleopod of male, form I; *c*, caudal view of first pleopod of male, form I; *d*, caudal view of first pleopod of male, form II; *e*, annulus ventralis and postannular sclerites; *f*, dorsal view of right chela of male, form I.

FIGURES 211-364, 379.—*a*, dorsal view of carapace of male, form I; *b*, lateral view of first pleopod of male, form I; *c*, lateral view of distal part of first pleopod of male, form I; *d*, mesial view of distal part of first pleopod of male, form I; *e*, lateral view of first pleopod of male, form II; *f*, annulus ventralis and postannular sclerite; *g*, dorsal view of right chela of male, form I.

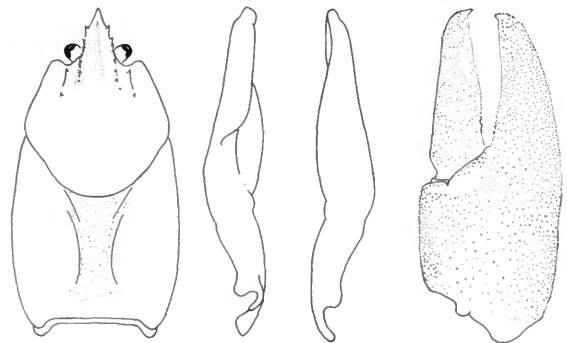
FIGURES 365-374.—*a*, dorsal view of carapace; *b*, epistome and basal podomere of antennae; *c*, caudal view of basal podomeres of fifth pereopods; *d*, dorsal view of carpus of right cheliped; *e*, lateral view of carpus of right cheliped; *f*, dorsal view of chela. (Figures 365 and 369 after Buckup and Rossi, 1980.)



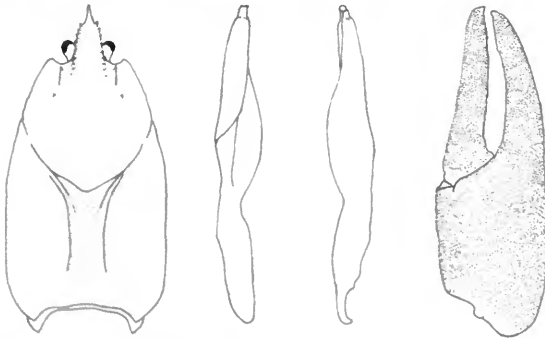
1. *Pacifastacus (Hobbsastacus) connectens*



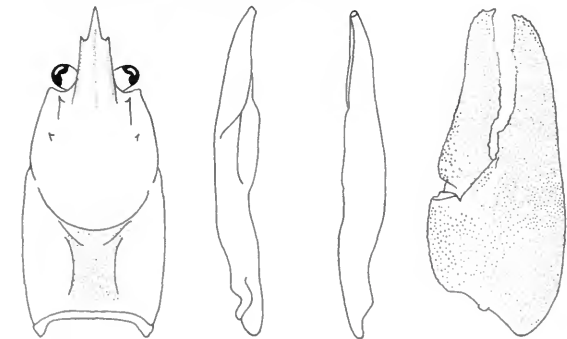
2. *Pacifastacus (Hobbsastacus) gambelii*



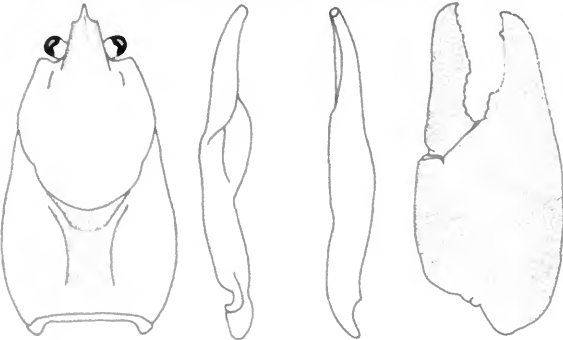
3. *Pacifastacus (Hobbsastacus) fortis*



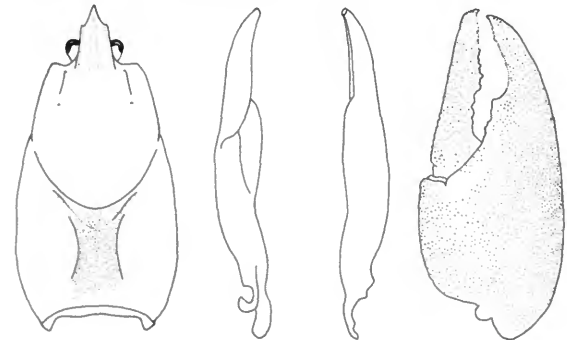
4. *Pacifastacus (Hobbsastacus) nigrescens*



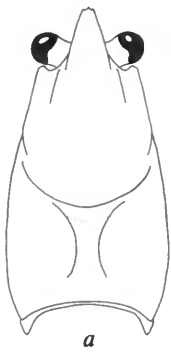
5. *Pacifastacus (Pacifastacus) leniusculus leniusculus*



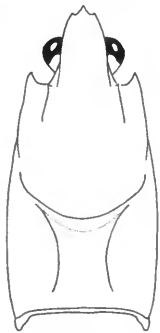
6. *Pacifastacus (Pacifastacus) leniusculus klamathensis*



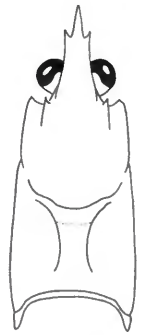
7. *Pacifastacus (Pacifastacus) leniusculus trowbridgii*



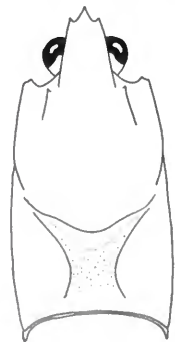
8. *Cambarellus (Cambarellus) occidentalis*



9. *Cambarellus (Cambarellus) alvarezii*

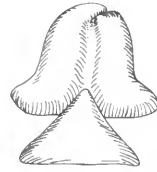
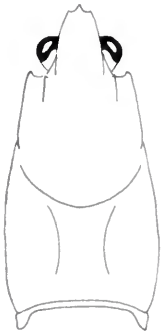


10. *Cambarellus (Cambarellus) chapalanus*

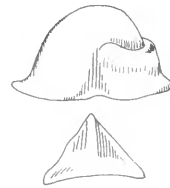


11. *Cambarellus (Cambarellus) chihuahuae*

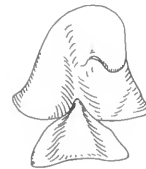
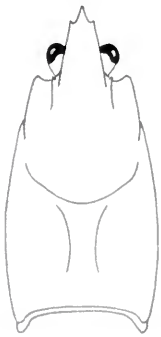




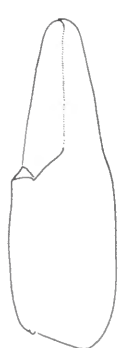
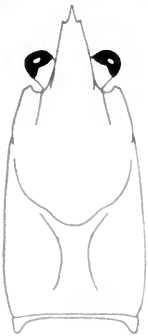
12. *Cambarellus (Cambarellus) areolatus*



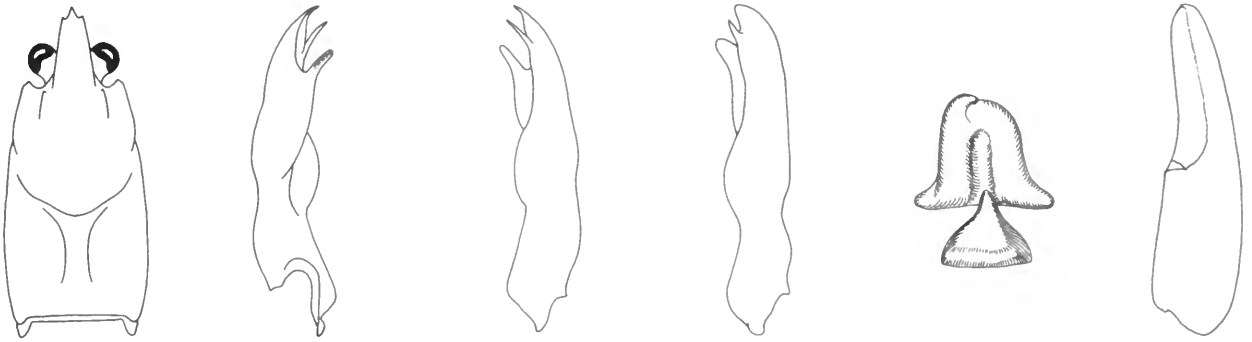
13. *Cambarellus (Cambarellus) proluxus*



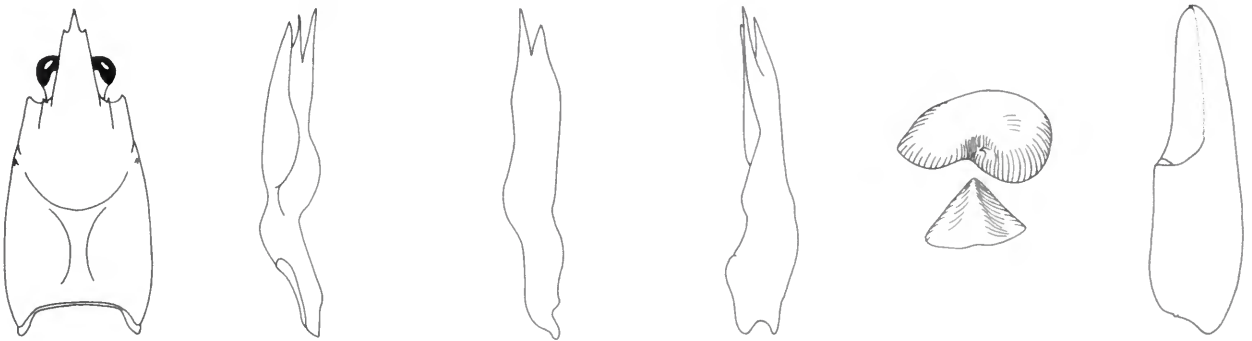
14. *Cambarellus (Cambarellus) montezumae*



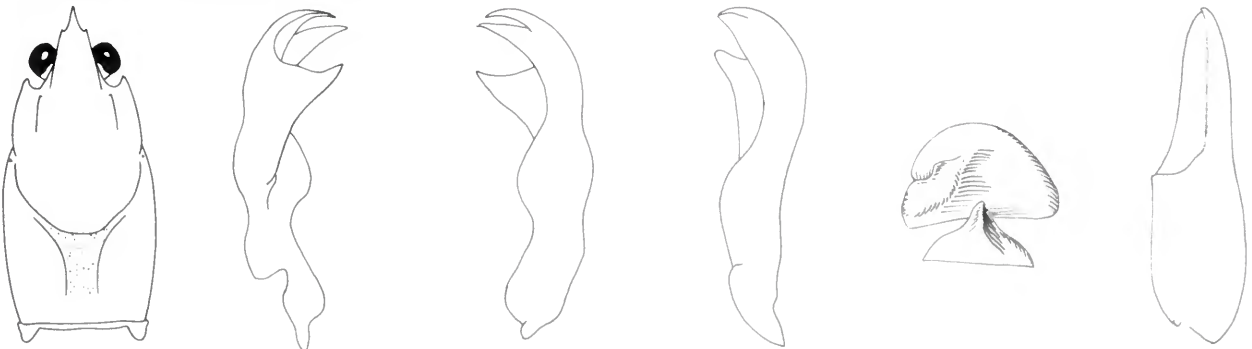
15. *Cambarellus (Cambarellus) patzcuarensis*



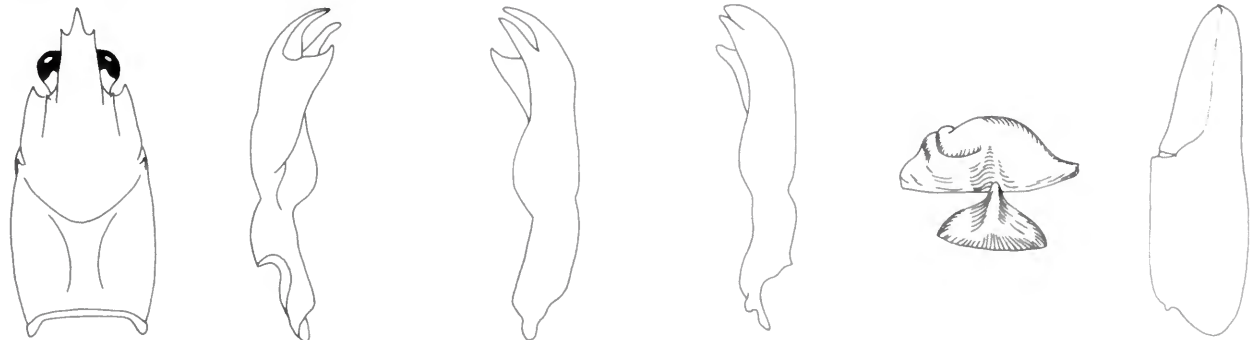
16. *Cambarellus (Cambarellus) zempoalensis*



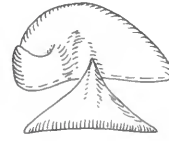
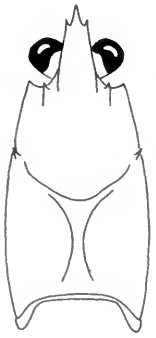
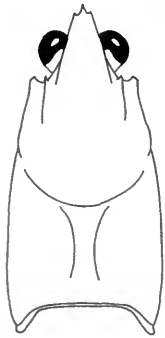
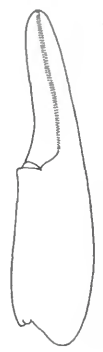
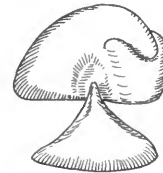
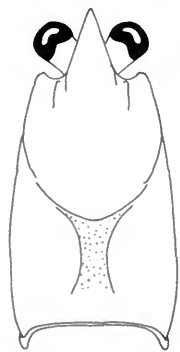
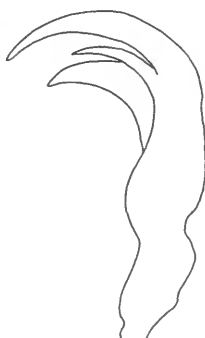
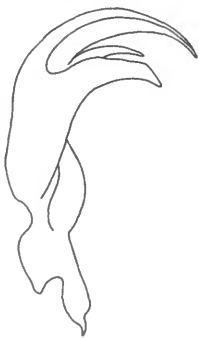
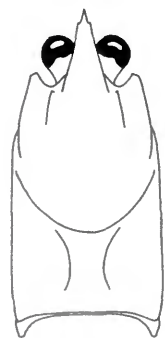
17. *Cambarellus (Dirigicambarus) shufeldtii*



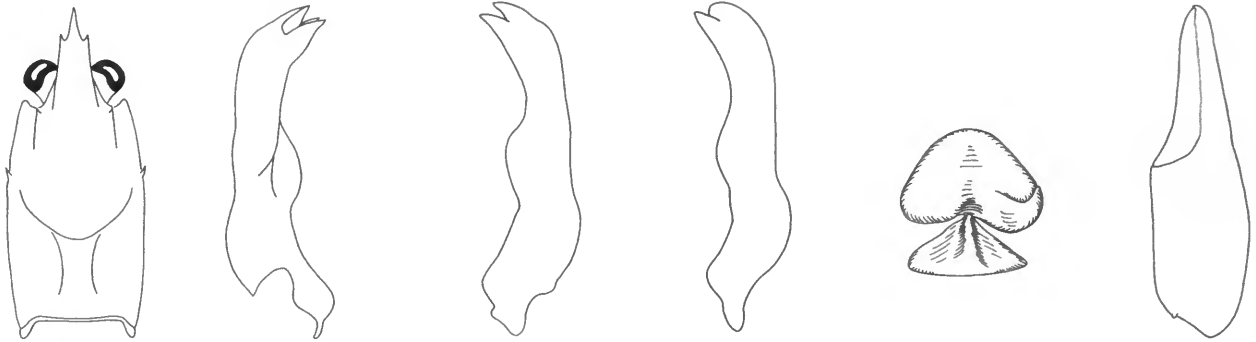
18. *Cambarellus (Pandicambarus) blacki*



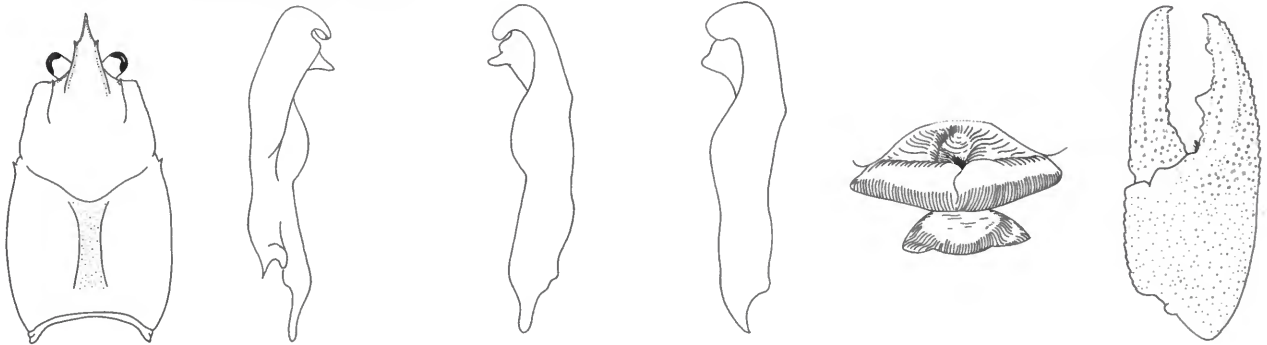
19. *Cambarellus (Pandicambarus) schmitti*

20. *Cambarellus (Pandicambarus) lesliei*21. *Cambarellus (Pandicambarus) puer*22. *Cambarellus (Pandicambarus) texanus*23. *Cambarellus (Pandicambarus) ninae*

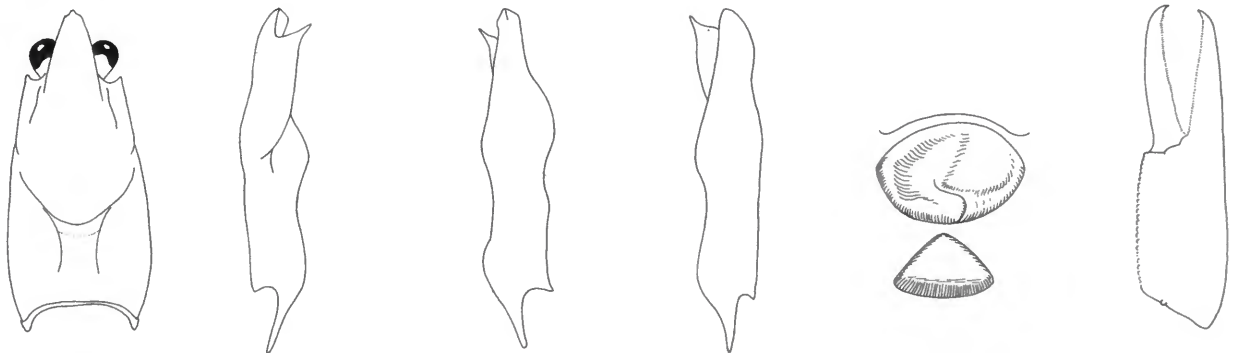




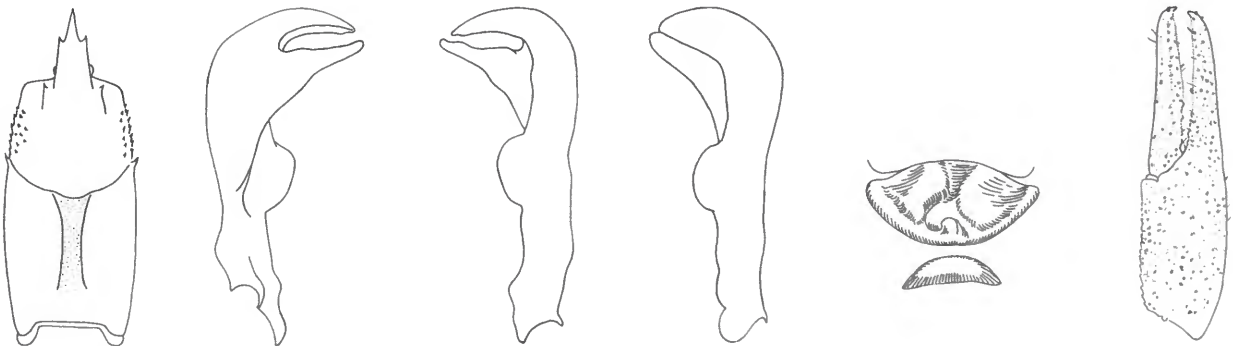
24. *Cambarellus (Pandicambarus) diminutus*



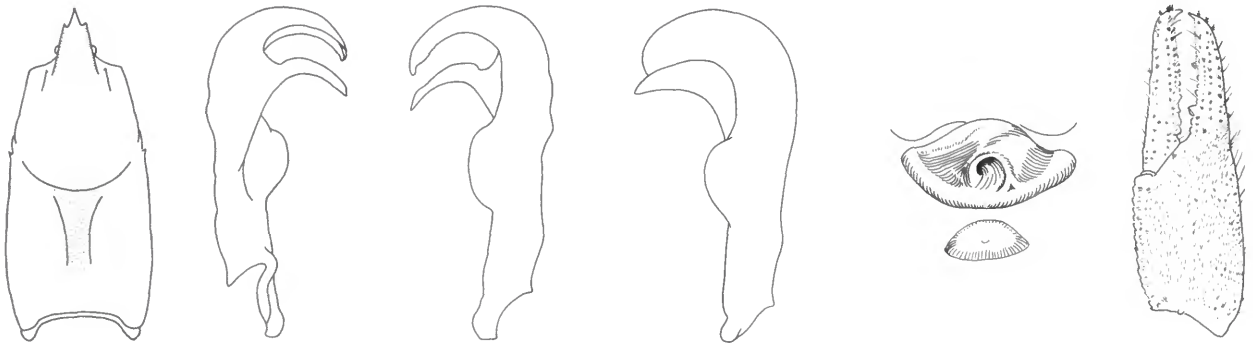
25. *Barbicambarus cornutus*



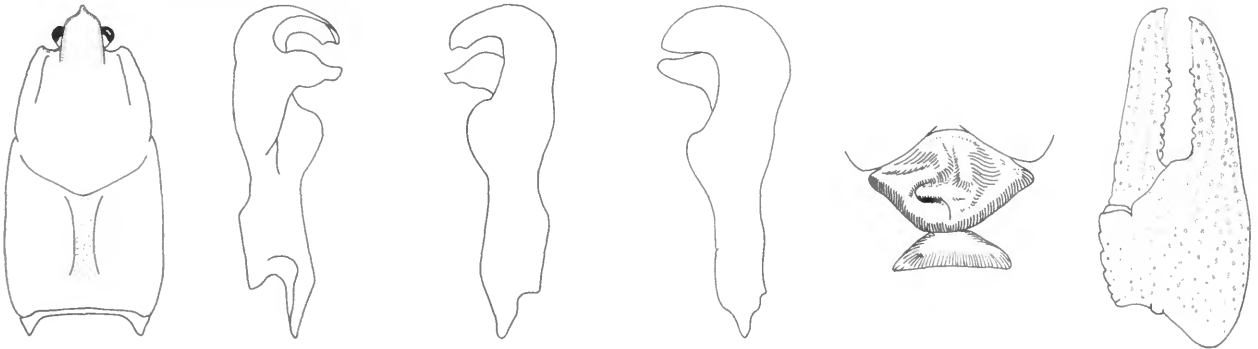
26. *Bouchardina robisoni*



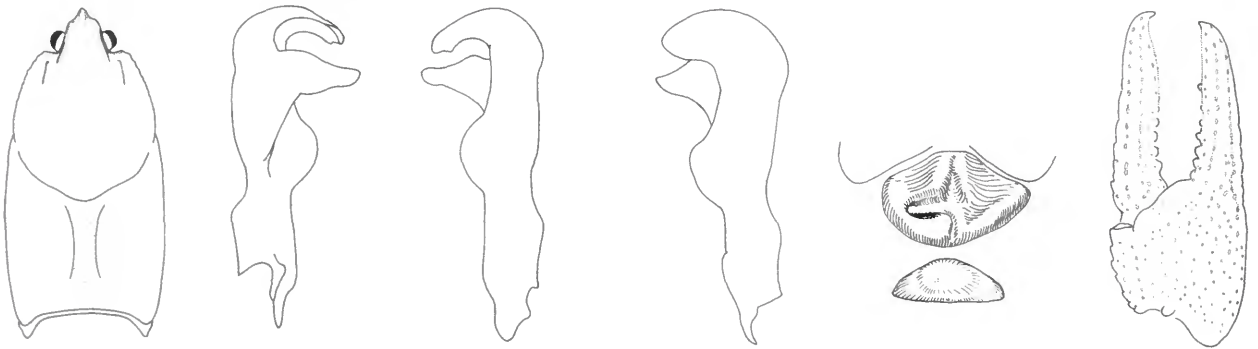
27. *Cambarus (Aviticambarus) hamulatus*



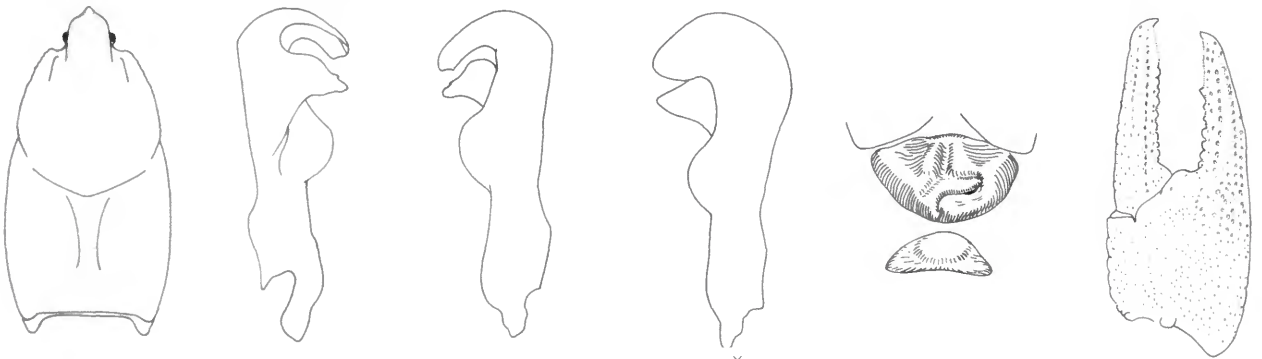
28. *Cambarus (Aviticambarus) jonesi*



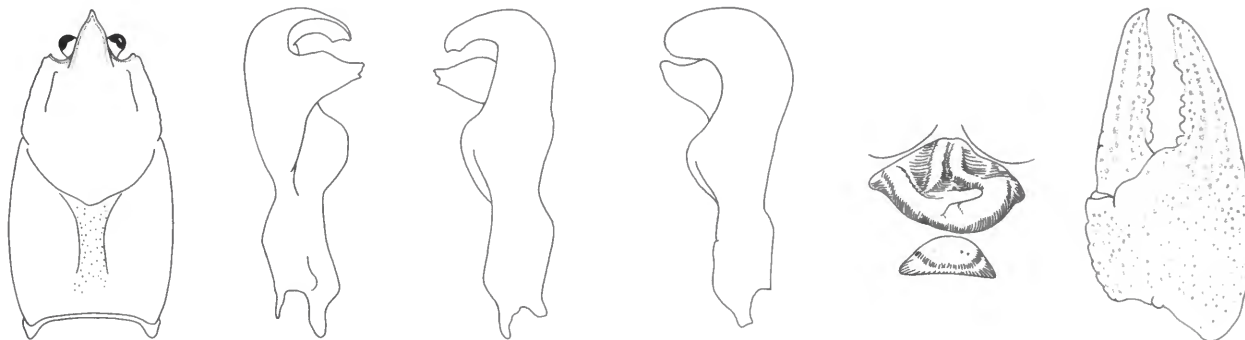
29. *Cambarus (Cambarus) bartonii bartonii*



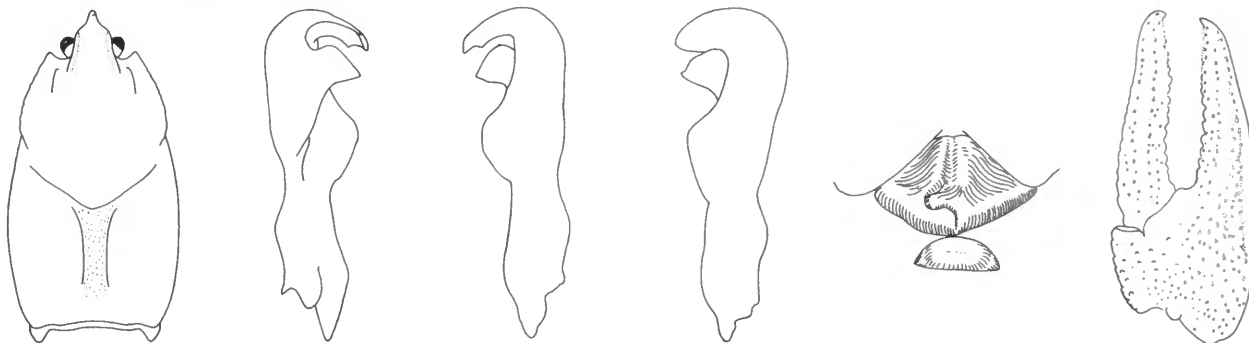
30. *Cambarus (Cambarus) bartonii carinirostris*



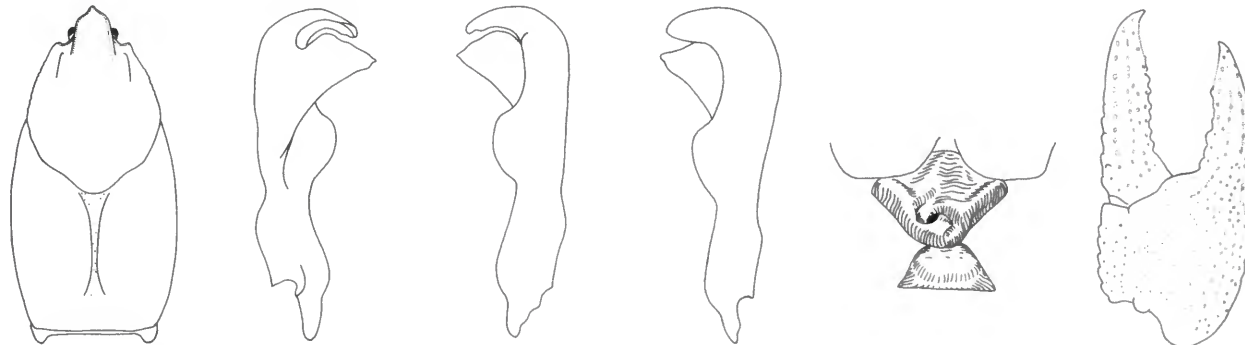
31. *Cambarus (Cambarus) bartonii cavatus*



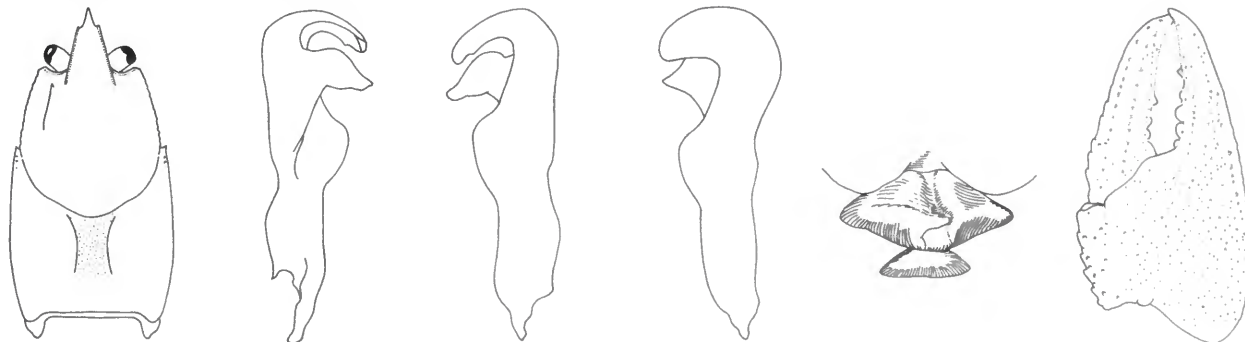
32. *Cambarus (Cambarus) howardi*



33. *Cambarus (Cambarus) sciotensis*

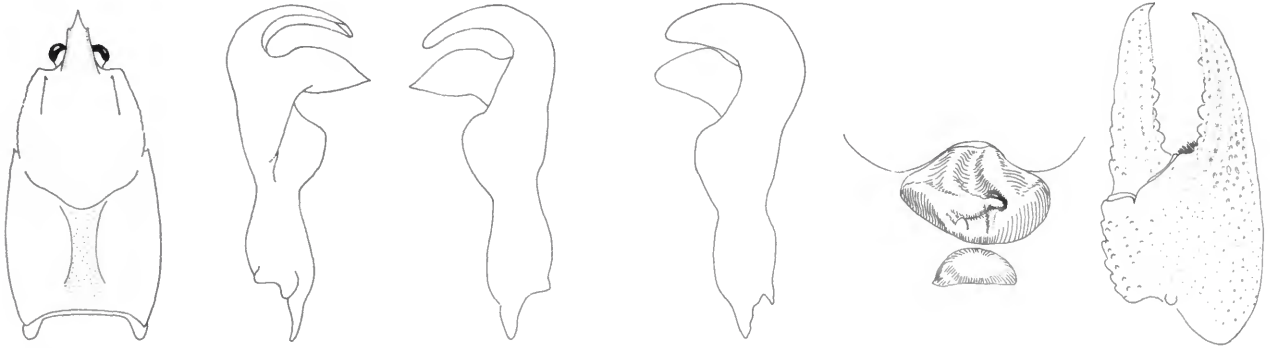
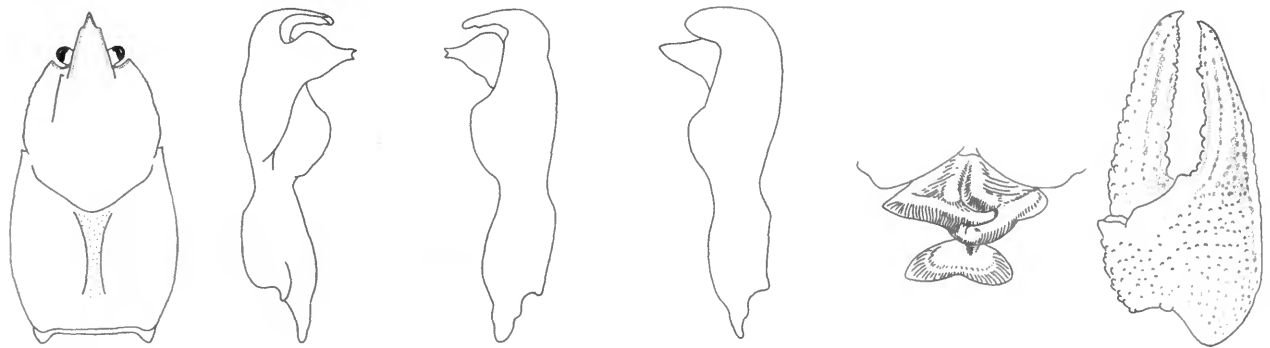
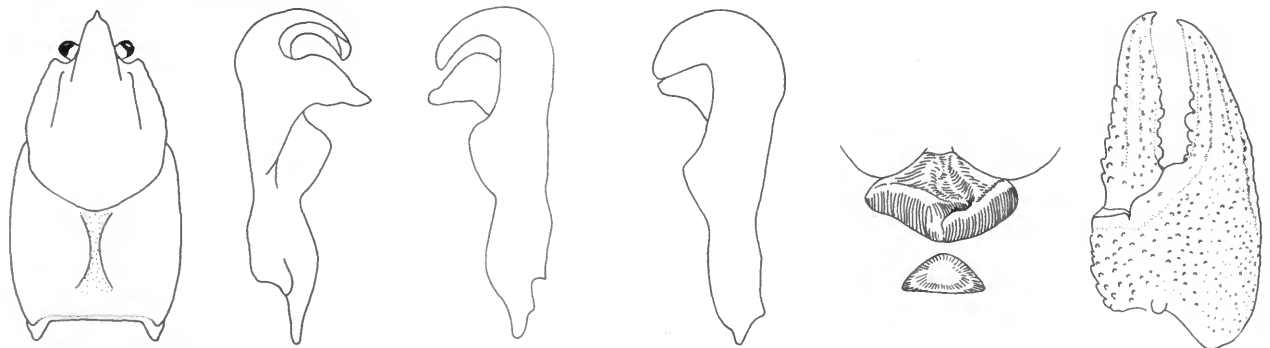
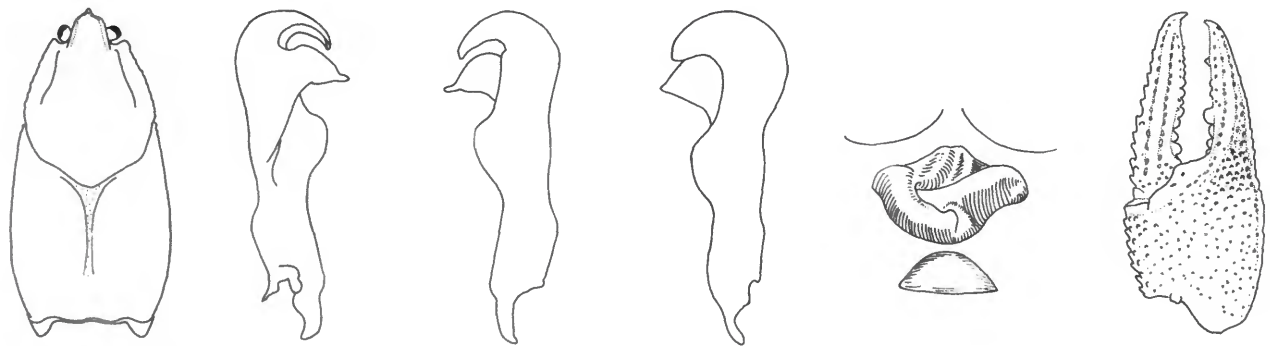


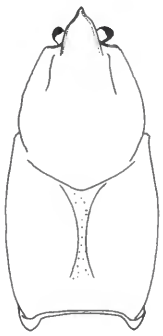
34. *Cambarus (Cambarus) ortmanni*



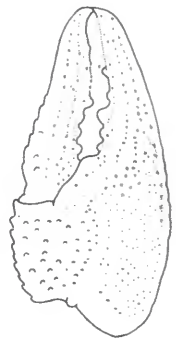
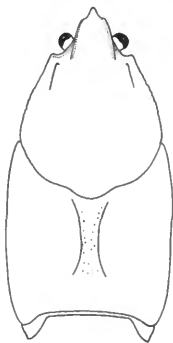
35. *Cambarus (Depressicambarus) halli*



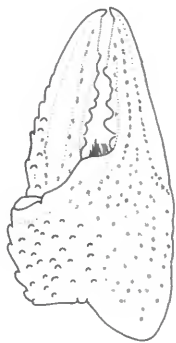
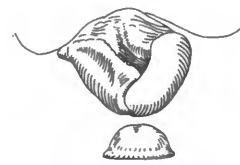
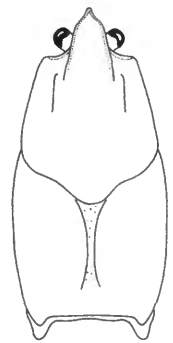
36. *Cambarus (Depressicambarus) englishi*37. *Cambarus (Depressicambarus) obstipus*38. *Cambarus (Depressicambarus) latimanus*39. *Cambarus (Depressicambarus) reflexus*



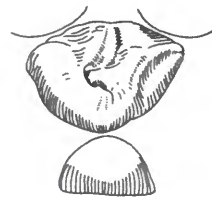
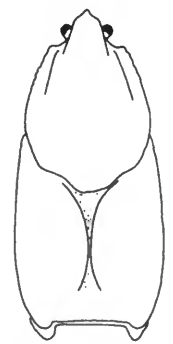
40. *Cambarus (Depressicambarus) pyronotus*



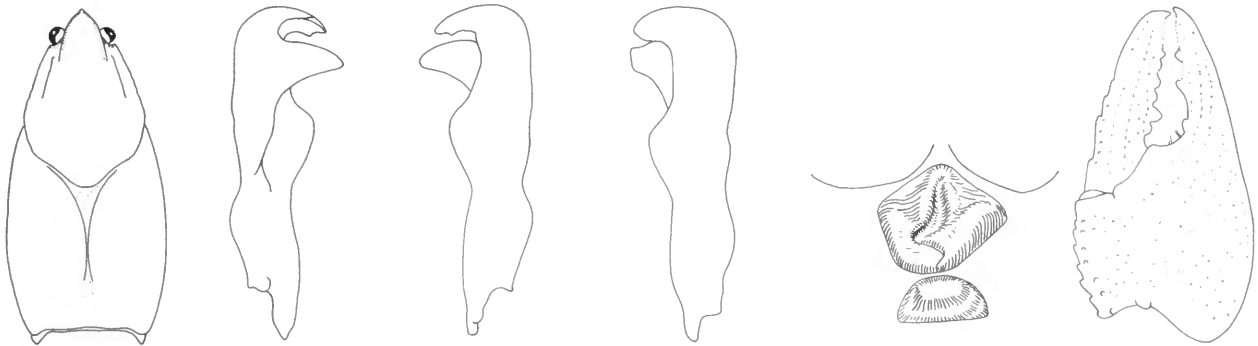
41. *Cambarus (Depressicambarus) sphenoides*



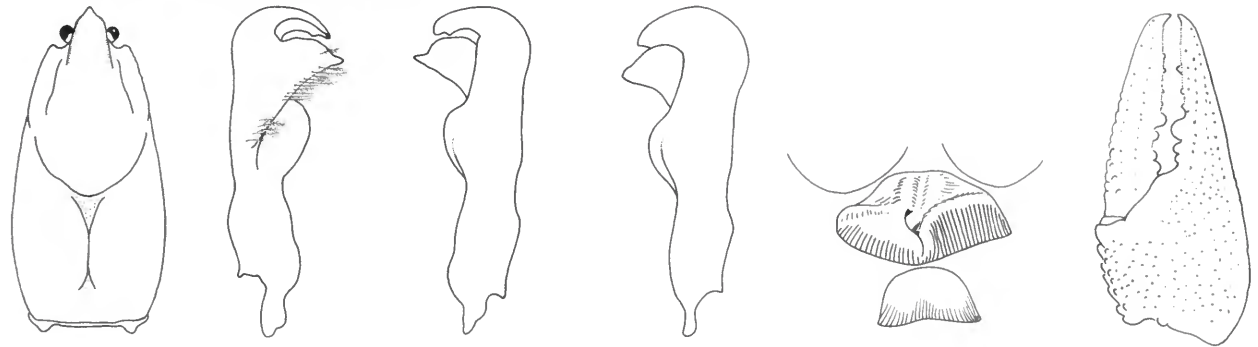
42. *Cambarus (Depressicambarus) catagius*



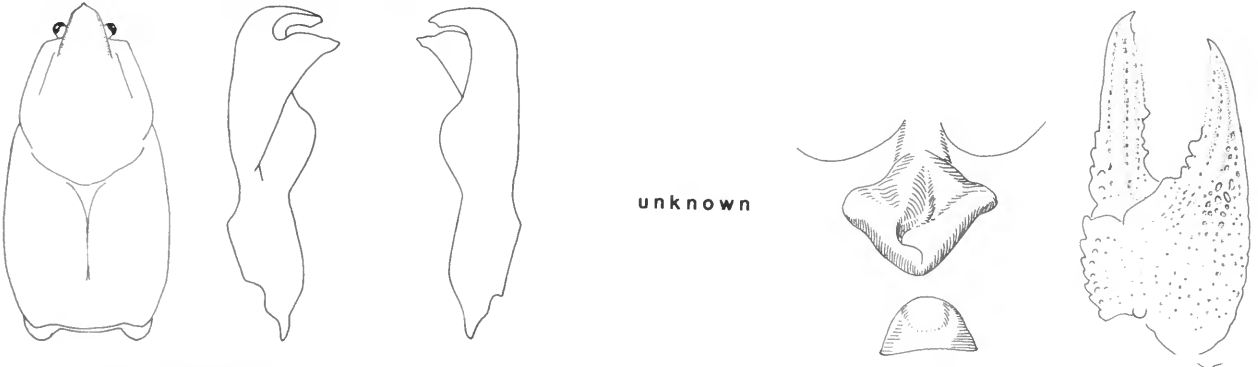
43. *Cambarus (Depressicambarus) truncatus*



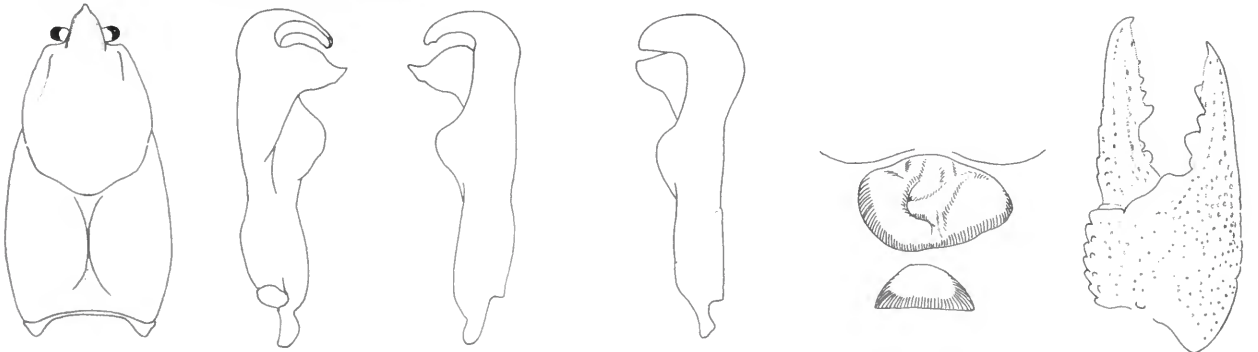
44. *Cambarus (Depressicambarus) cymatilis*



45. *Cambarus (Depressicambarus) strigosus*

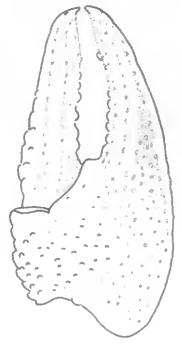
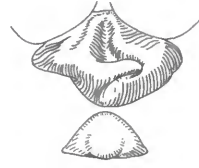
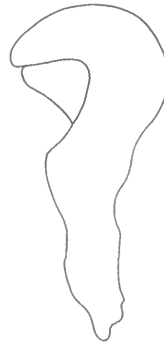
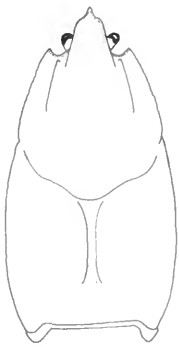


46. *Cambarus (Depressicambarus) deweesae*

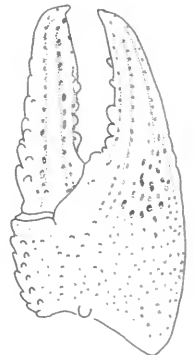
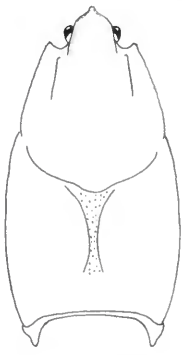


47. *Cambarus (Depressicambarus) harti*

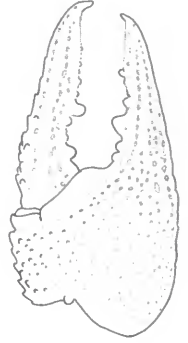
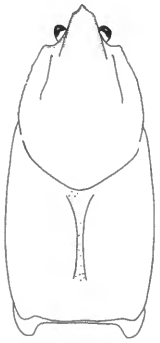




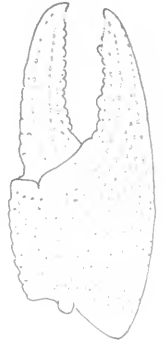
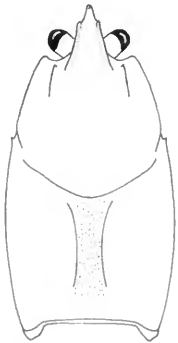
48. *Cambarus (Depressicambarus) striatus*



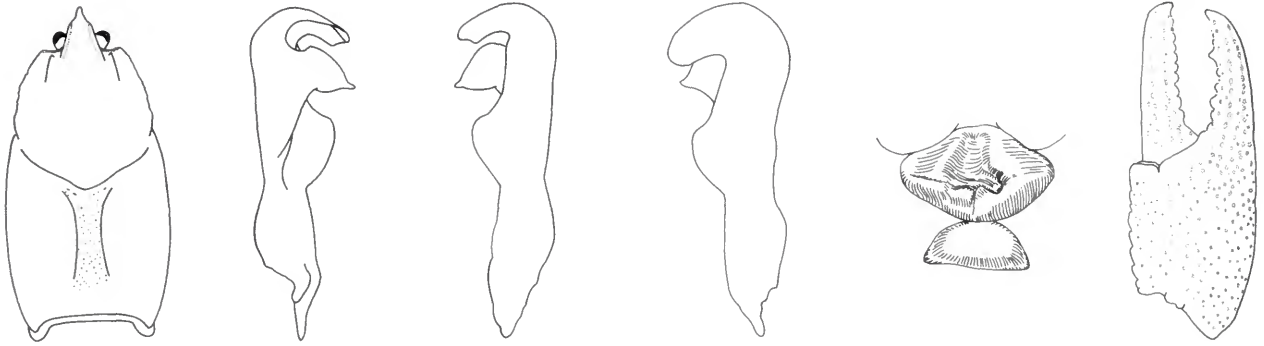
49. *Cambarus (Depressicambarus) graysoni*



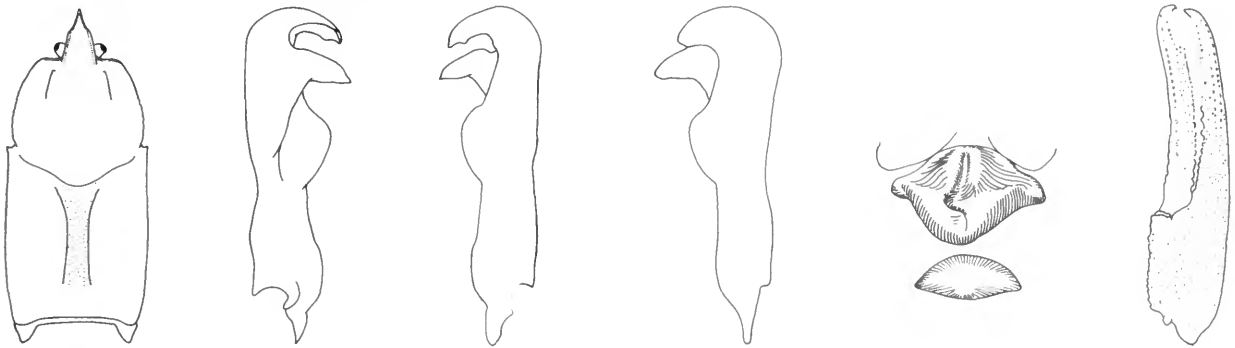
50. *Cambarus (Depressicambarus) reduncus*



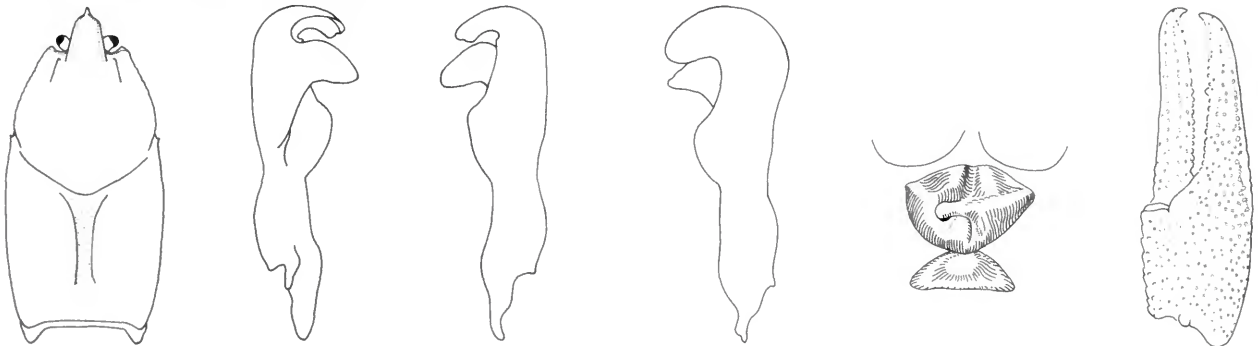
51. *Cambarus (Erebicambarus) hubbsi*



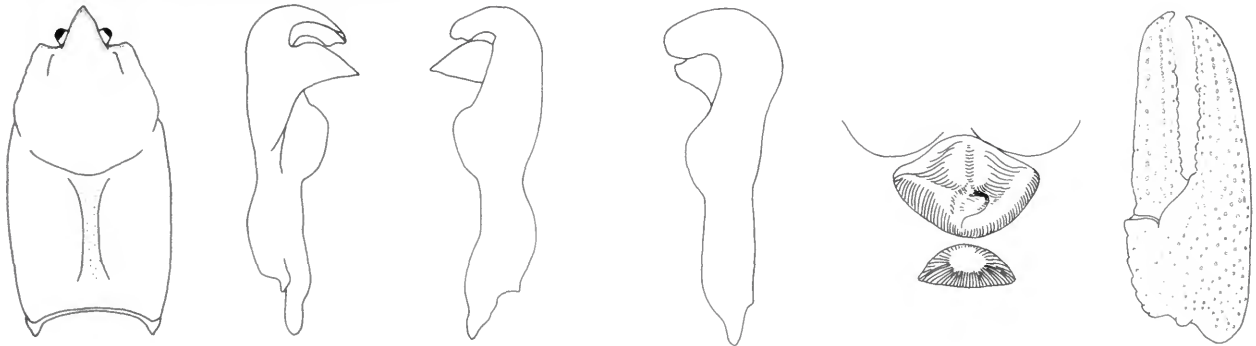
52. *Cambarus (Erebicambarus) rusticiformis*



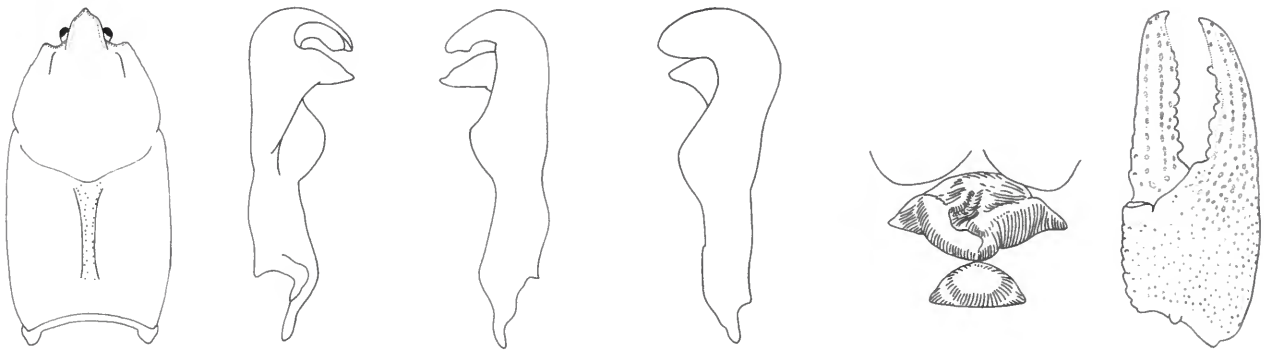
53. *Cambarus (Erebicambarus) hubrichti*



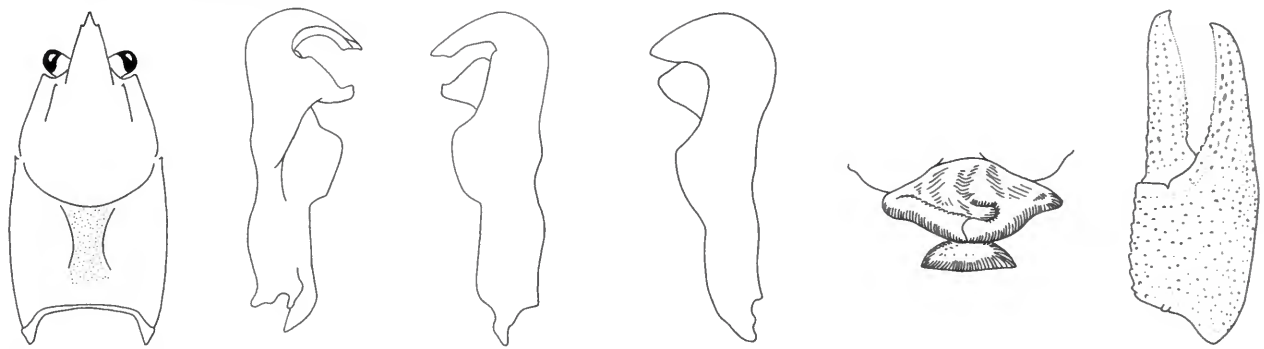
54. *Cambarus (Erebicambarus) tenebrosus*



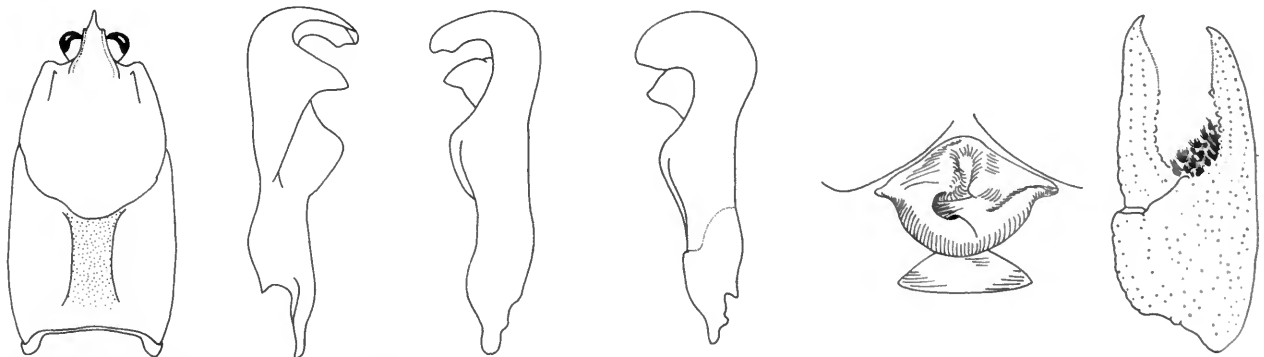
55. *Cambarus (Erebicambarus) ornatus*



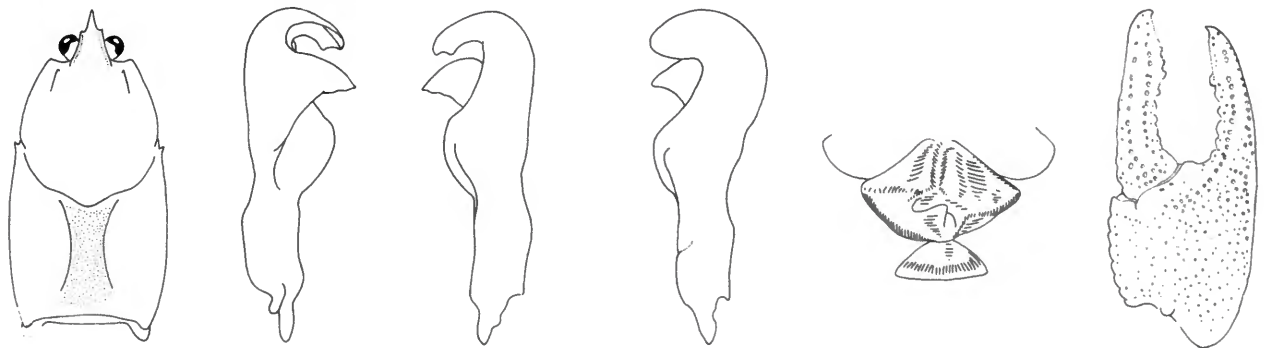
56. *Cambarus (Erebicambarus) laevis*



57. *Cambarus (Exilicambarus) cracens*

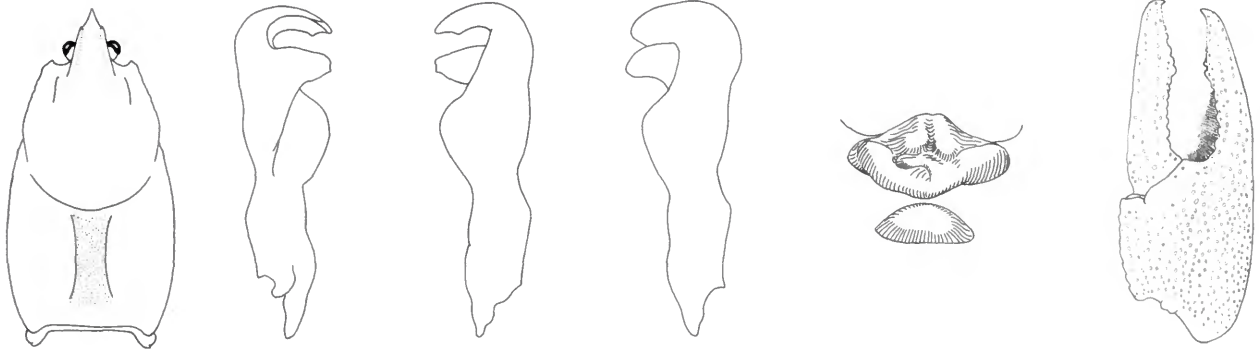
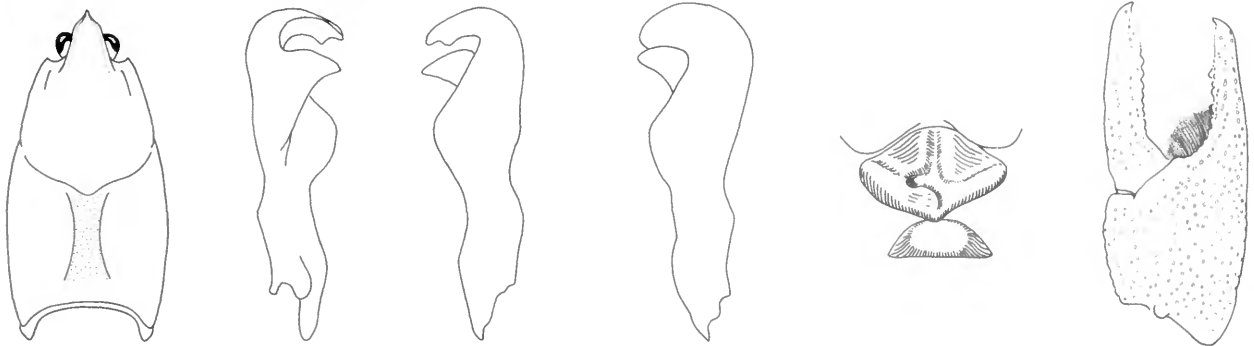
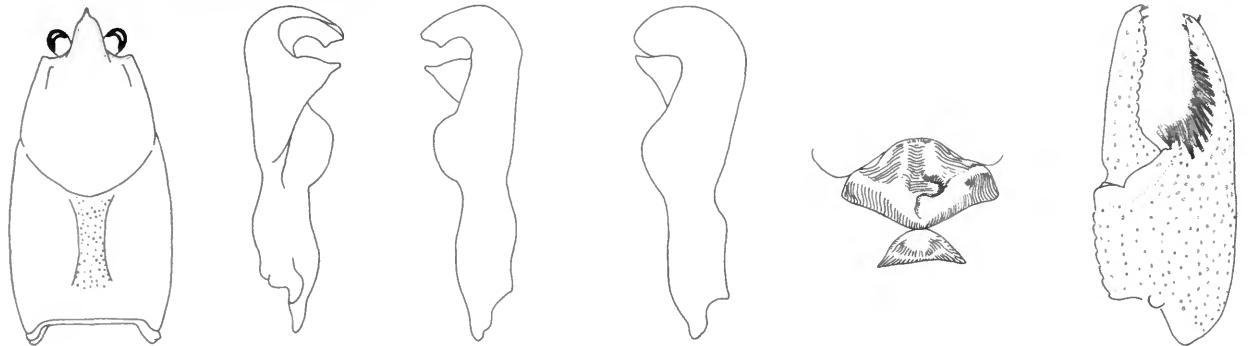
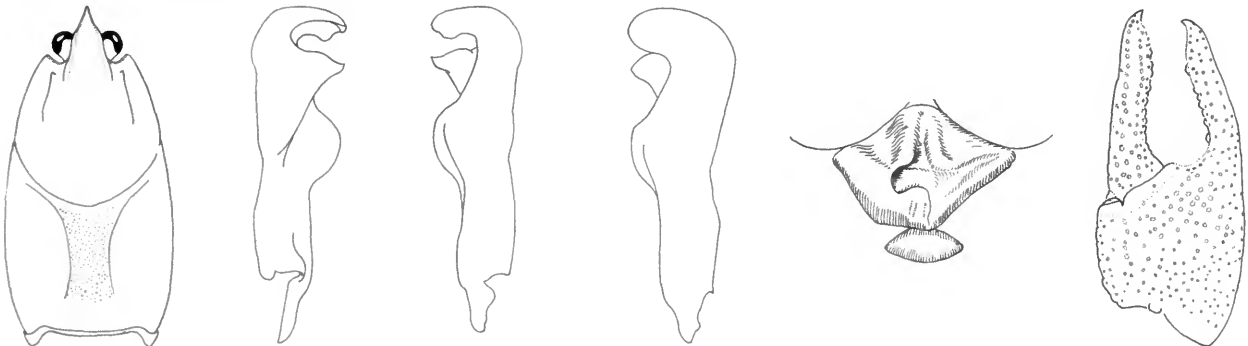


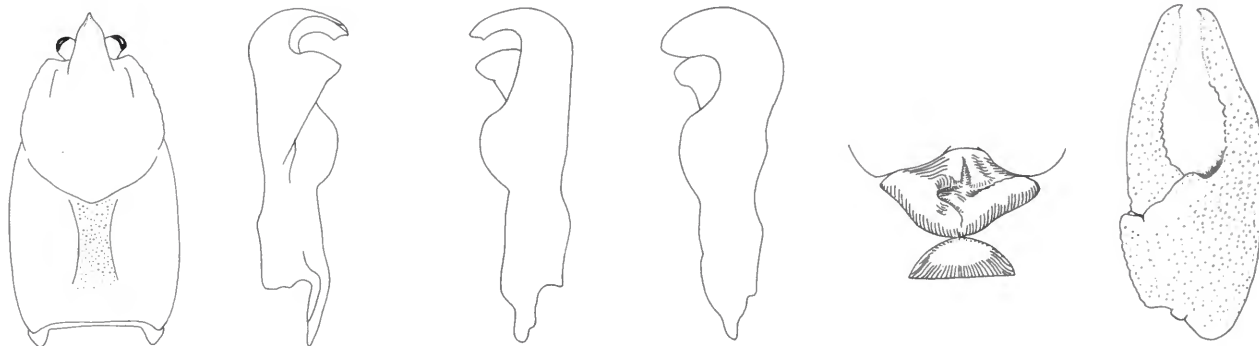
58. *Cambarus (Hiaticambarus) coosawattae*



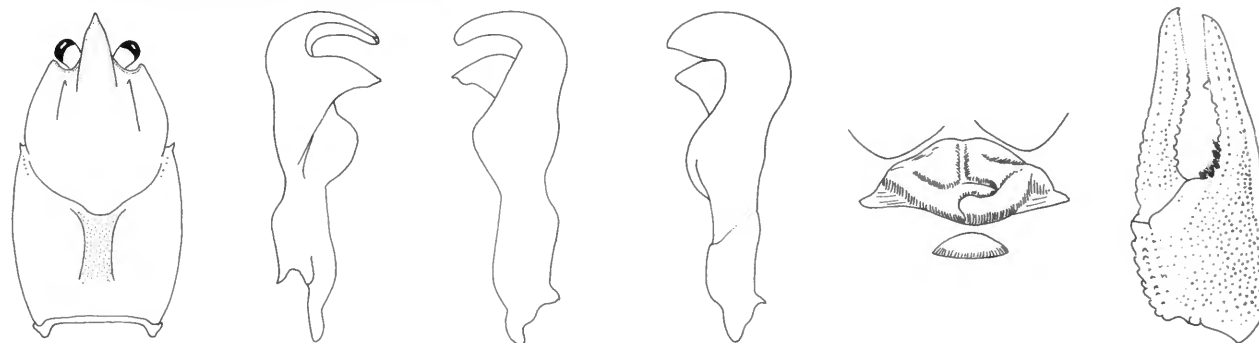
59. *Cambarus (Hiaticambarus) fasciatus*



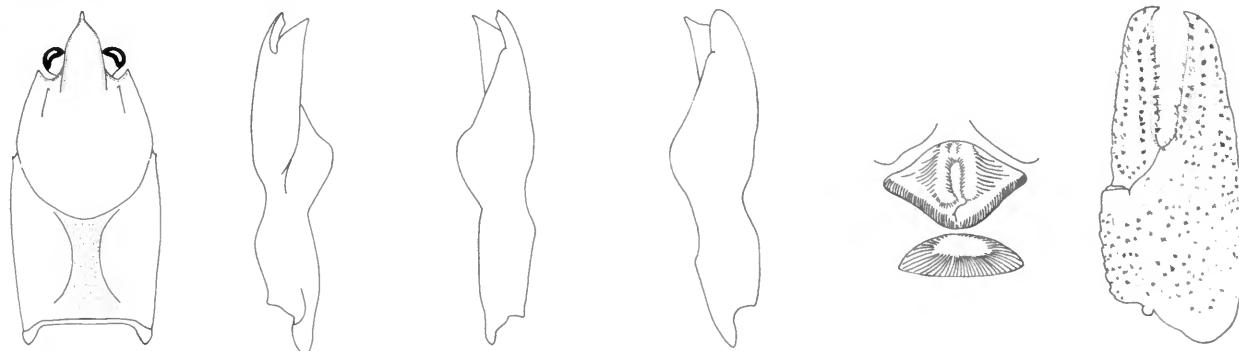
60. *Cambarus (Hiaticambarus) girardianus*61. *Cambarus (Hiaticambarus) longirostris*62. *Cambarus (Hiaticambarus) lonoeulus*63. *Cambarus (Hiaticambarus) manningi*



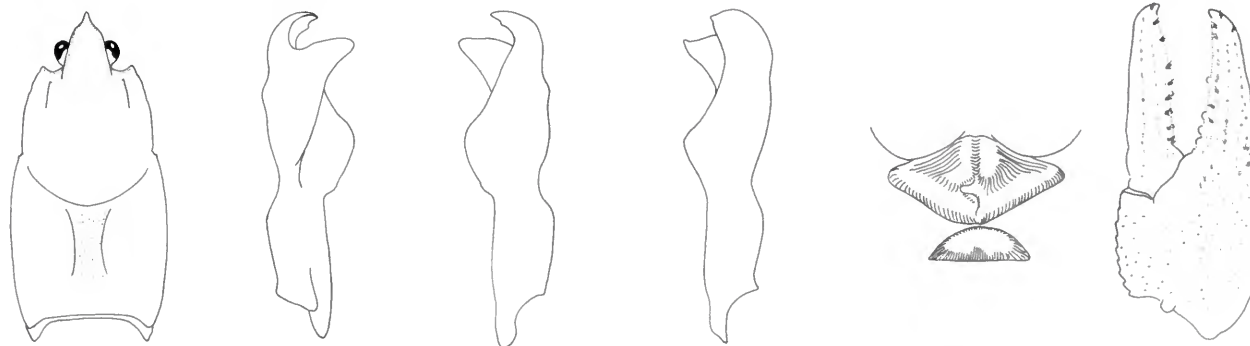
64. *Cambarus (Hiaticambarus) chasmodactylus*



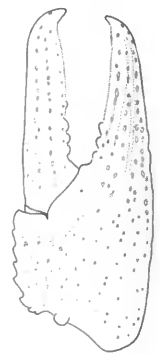
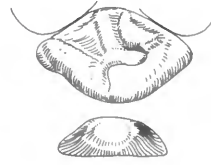
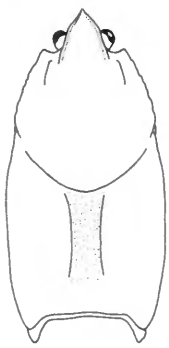
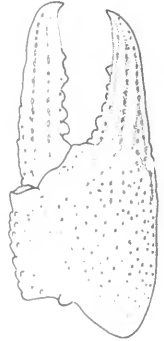
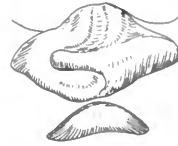
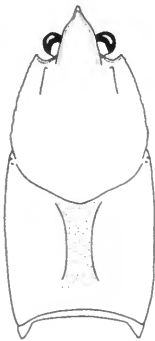
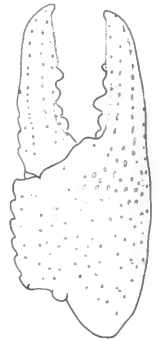
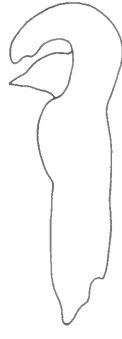
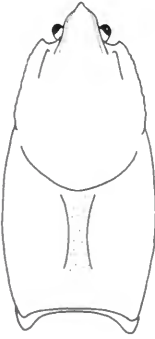
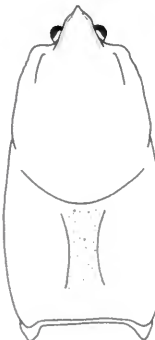
65. *Cambarus (Hiaticambarus) speciosus*



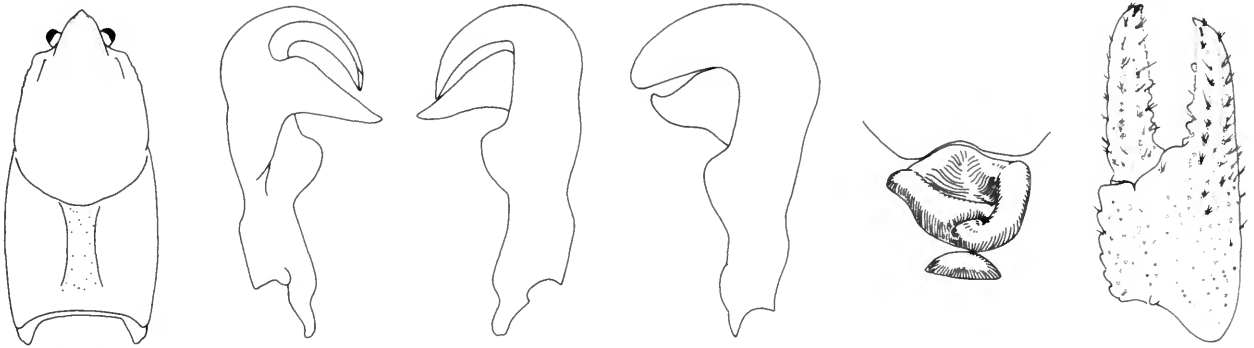
66. *Cambarus (Jugicambarus) bouchardi*



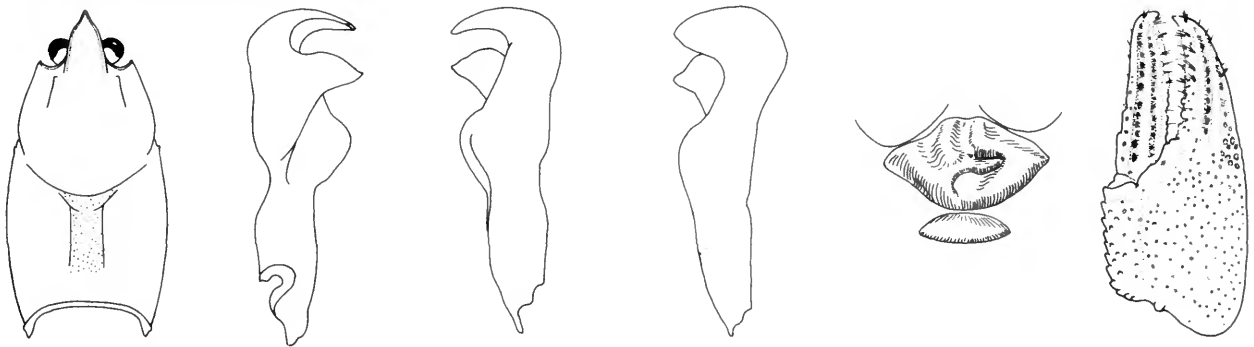
67. *Cambarus (Jugicambarus) obeyensis*

68. *Cambarus (Jugicambarus) distans*69. *Cambarus (Jugicambarus) unestami*70. *Cambarus (Jugicambarus) narvicolus*71. *Cambarus (Jugicambarus) conasaugaensis*

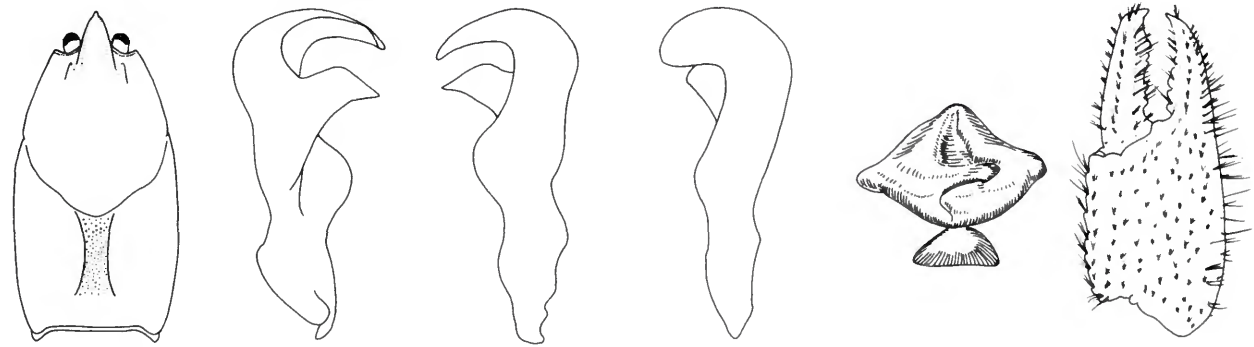




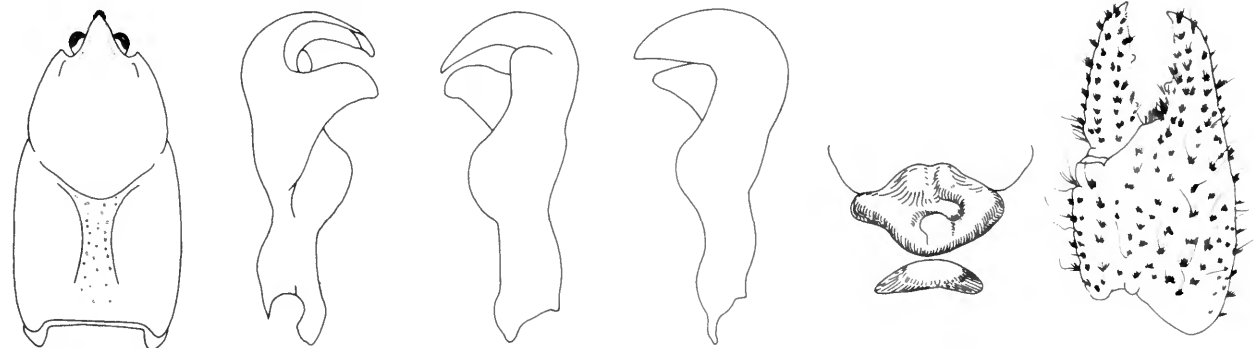
72. *Cambarus (Jugicambarus) asperimanus*



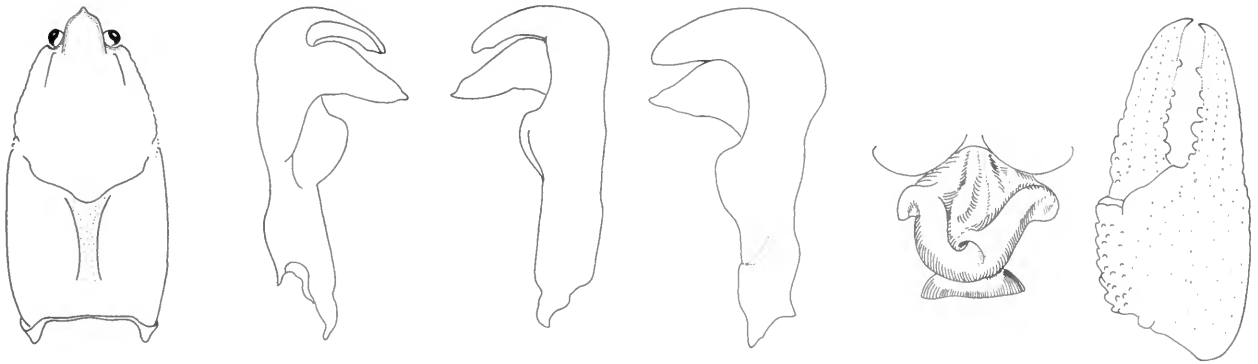
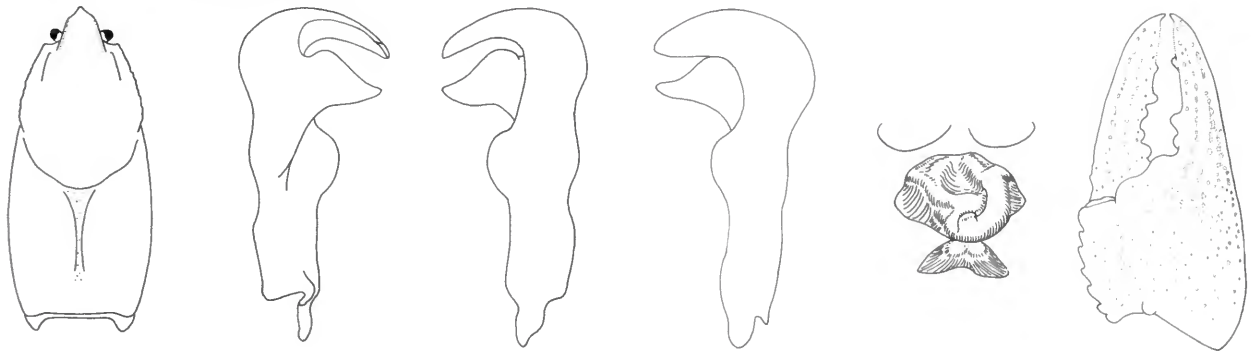
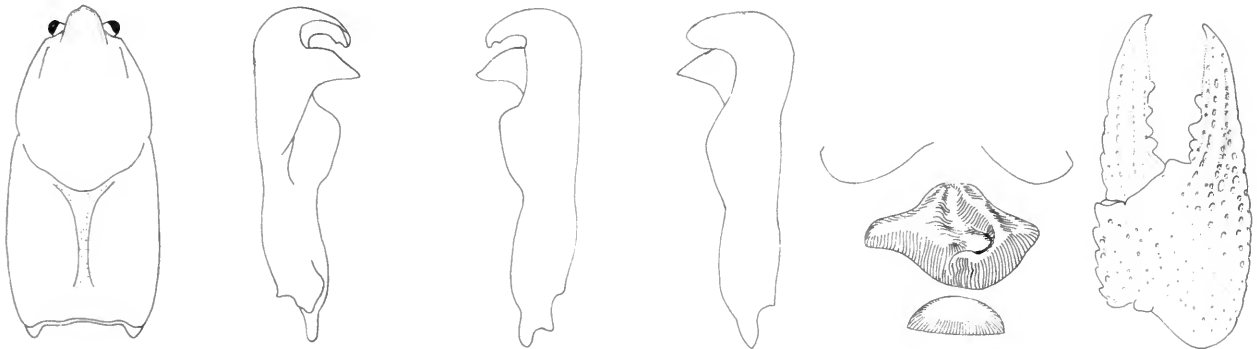
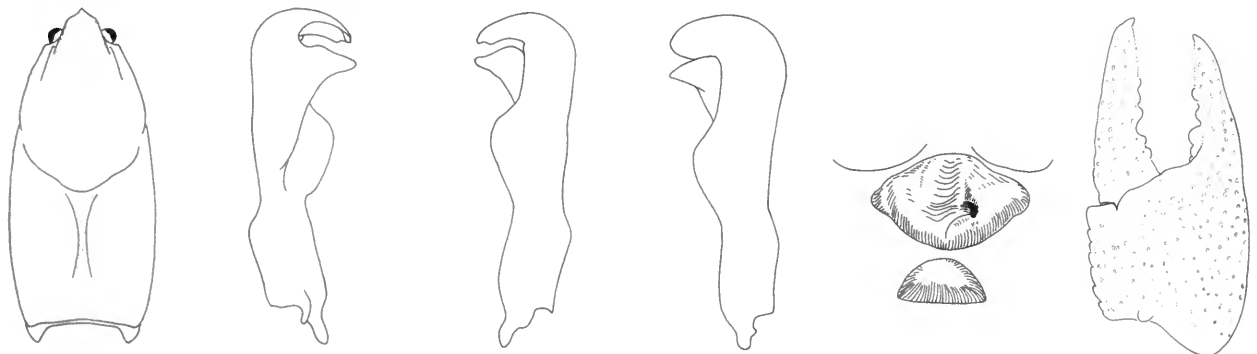
73. *Cambarus (Jugicambarus) crinipes*

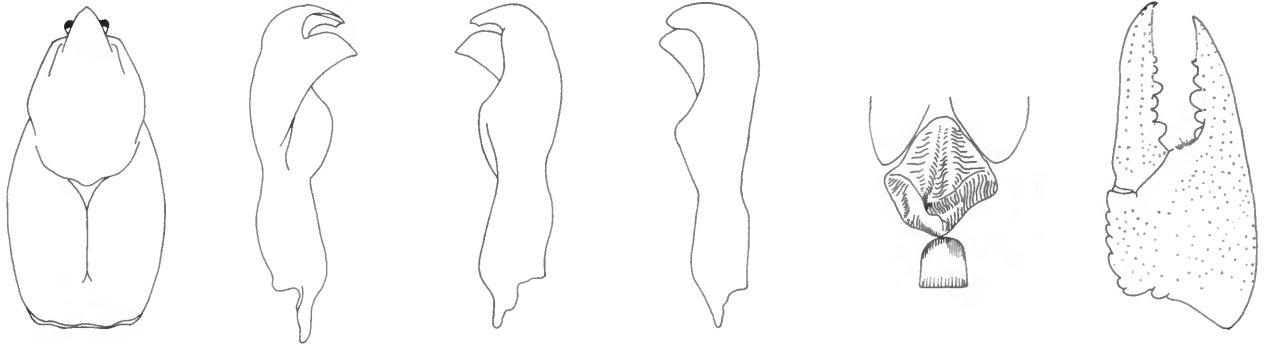


74. *Cambarus (Jugicambarus) brachydactylus*

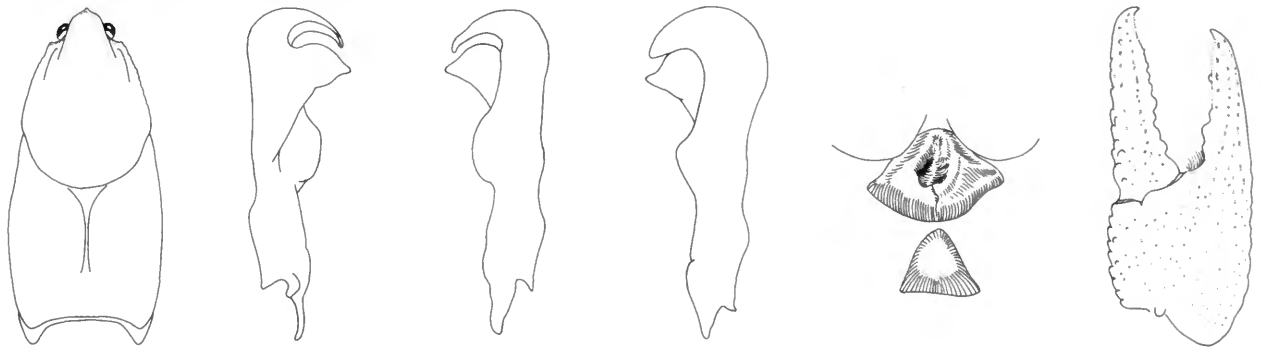


75. *Cambarus (Jugicambarus) friaufi*

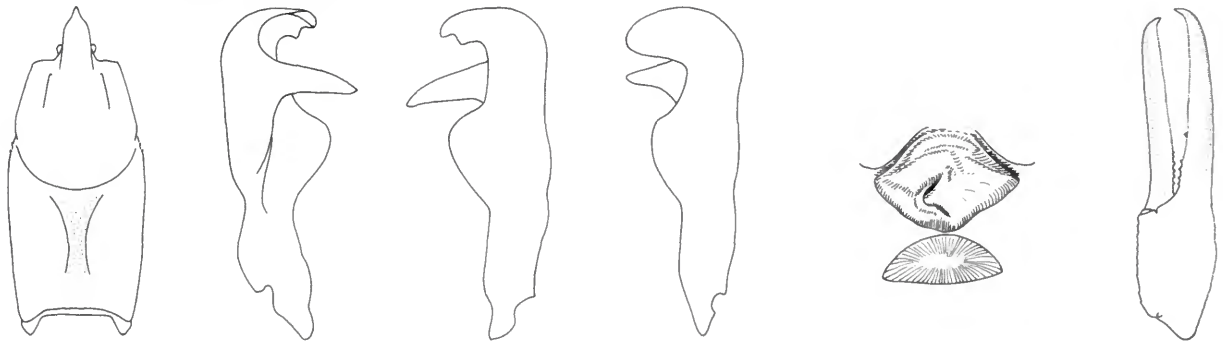
76. *Cambarus (Jugicambarus) nodosus*77. *Cambarus (Jugicambarus) carolinus*78. *Cambarus (Jugicambarus) dubius*79. *Cambarus (Jugicambarus) monongalensis*



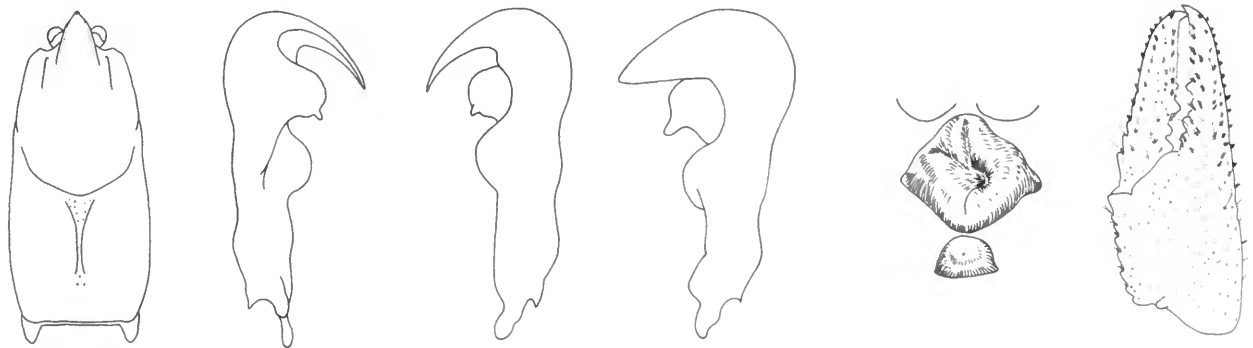
80. *Cambarus (Jugicambarus) batchi*



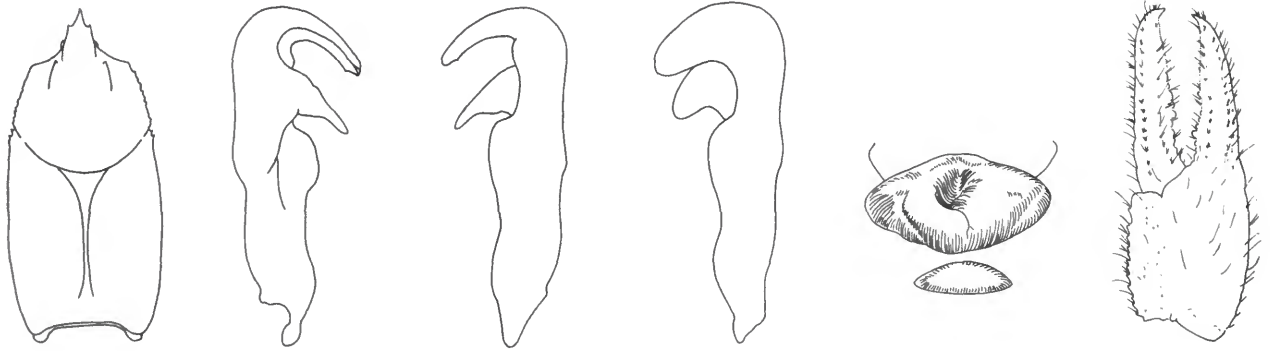
81. *Cambarus (Jugicambarus) gentryi*



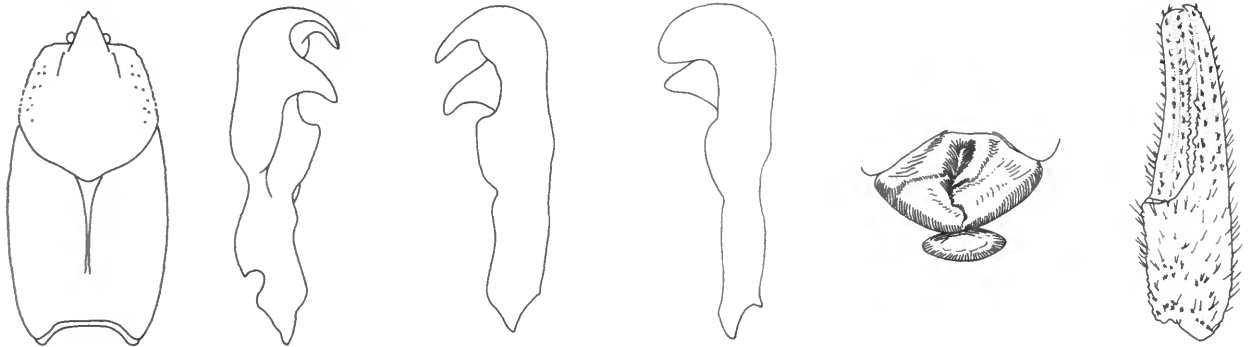
82. *Cambarus (Jugicambarus) cryptodytes*



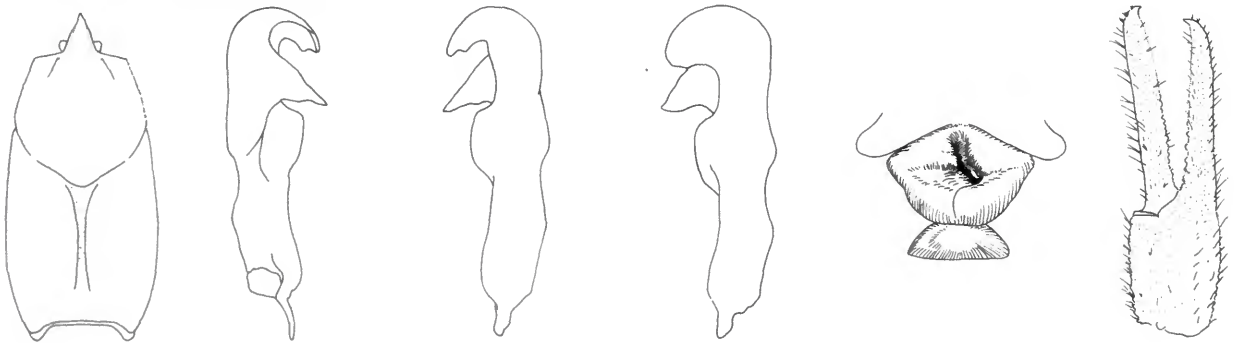
83. *Cambarus (Jugicambarus) causeyi*



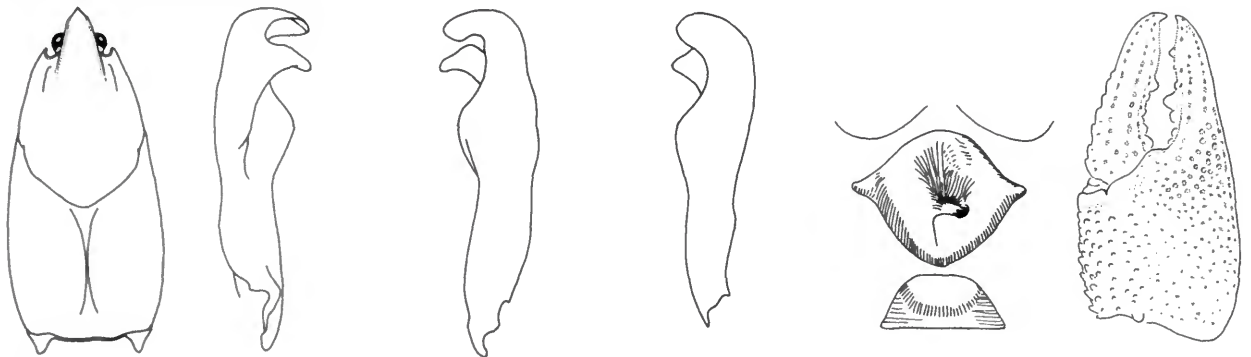
84. *Cambarus (Jugicambarus) setosus*



85. *Cambarus (Jugicambarus) zophonastes*

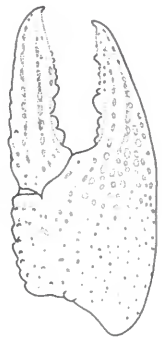
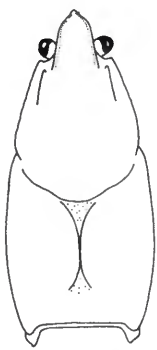


86. *Cambarus (Jugicambarus) tartarus*

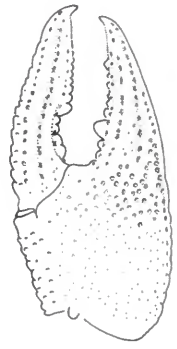
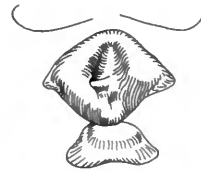
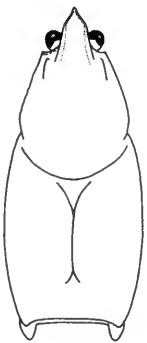


87. *Cambarus (Lacunicambarus) acanthura*

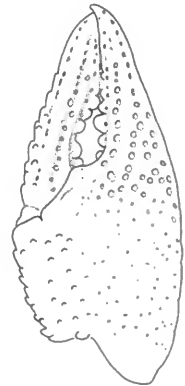
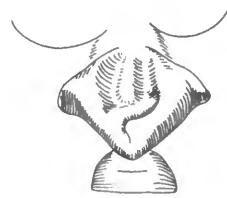
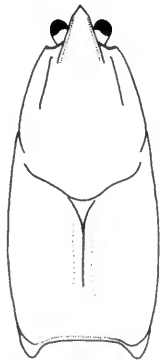




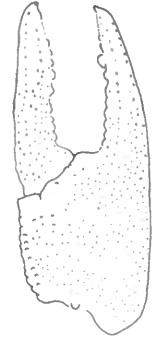
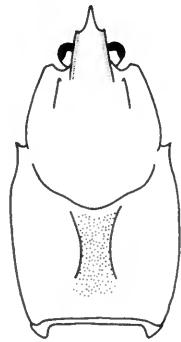
88. *Cambarus (Lacunicambarus) diogenes*



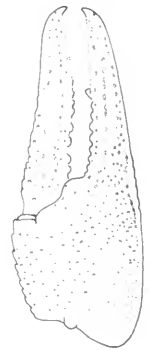
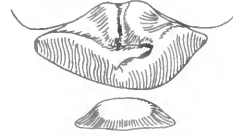
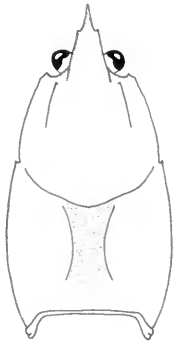
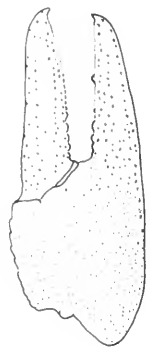
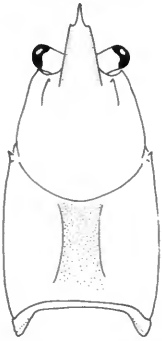
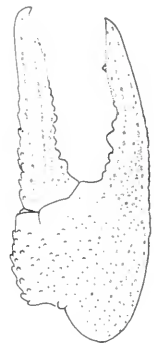
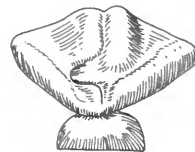
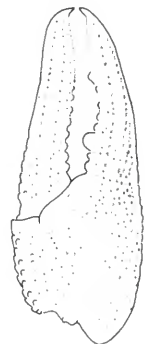
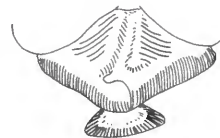
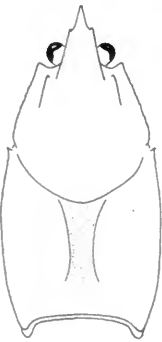
89. *Cambarus (Lacunicambarus) ludovicianus*

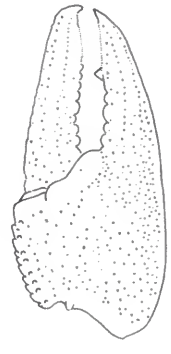
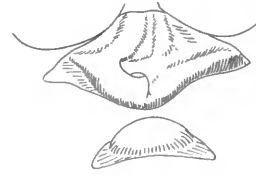
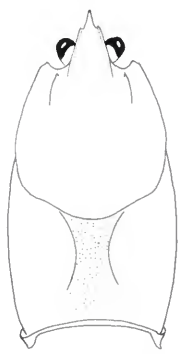


90. *Cambarus (Lacunicambarus) miltus*

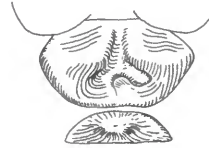
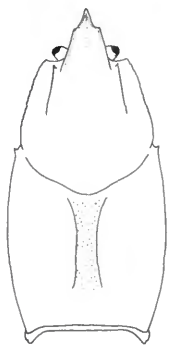


91. *Cambarus (Puncticambarus) coosae*

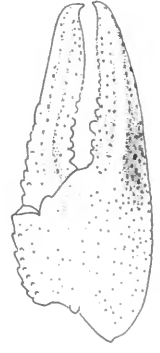
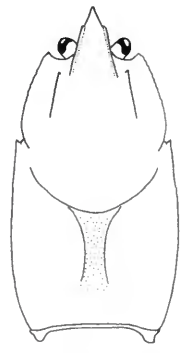
92. *Cambarus (Puncticambarus) extraneus*93. *Cambarus (Puncticambarus) scorpion*94. *Cambarus (Puncticambarus) spinatus*95. *Cambarus (Puncticambarus) cumberlandensis*



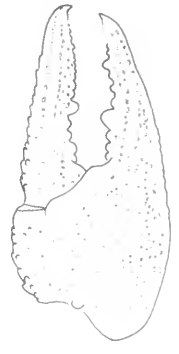
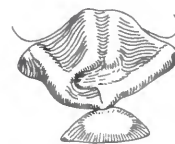
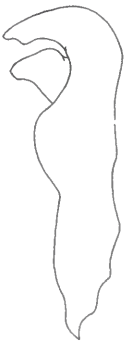
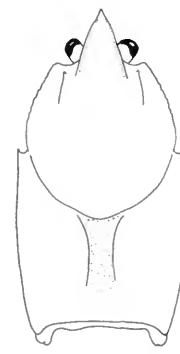
96. *Cambarus (Puncticambarus) parrishi*



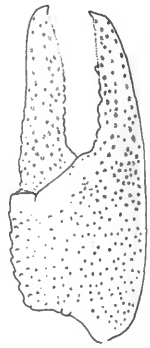
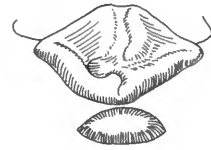
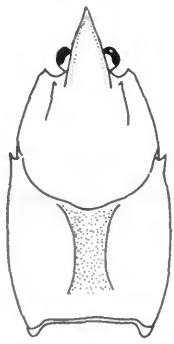
97. *Cambarus (Puncticambarus) nerterius*



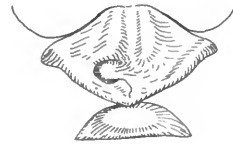
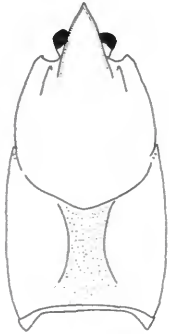
98. *Cambarus (Puncticambarus) buntingi*



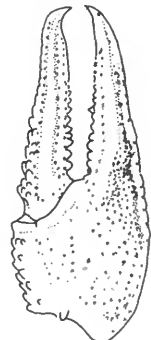
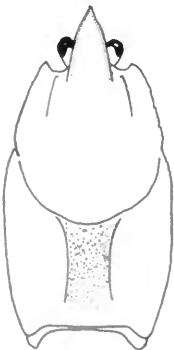
99. *Cambarus (Puncticambarus) acuminatus*



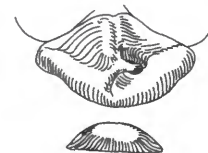
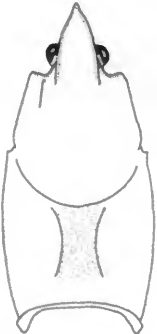
100. *Cambarus (Puncticambarus) scotti*



101. *Cambarus (Puncticambarus) chaugaensis*

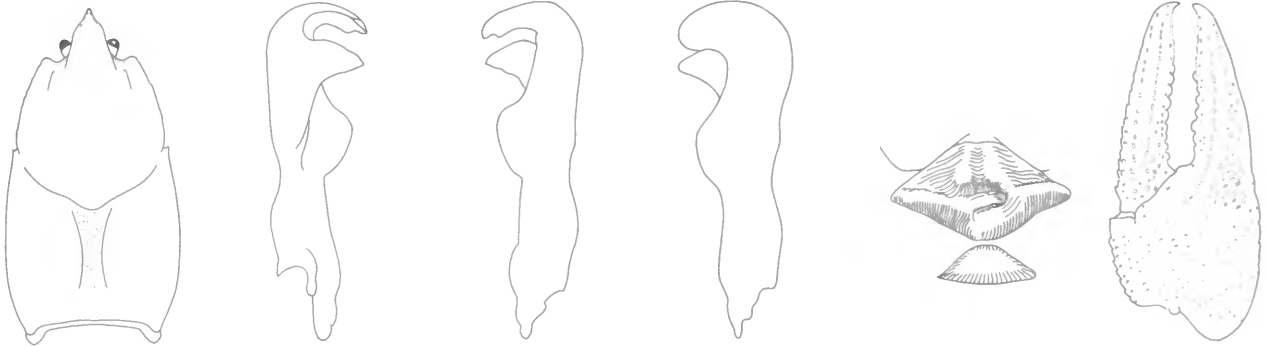


102. *Cambarus (Puncticambarus) hiwasseensis*

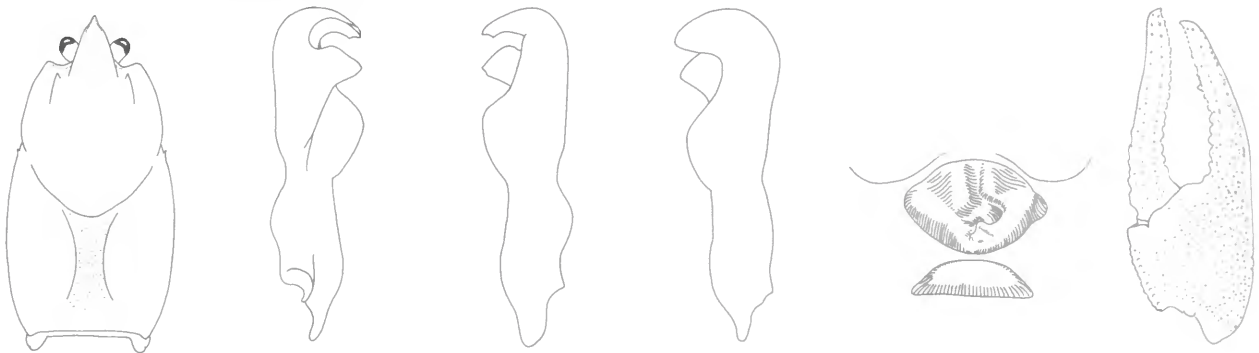


103. *Cambarus (Puncticambarus) reburrus*

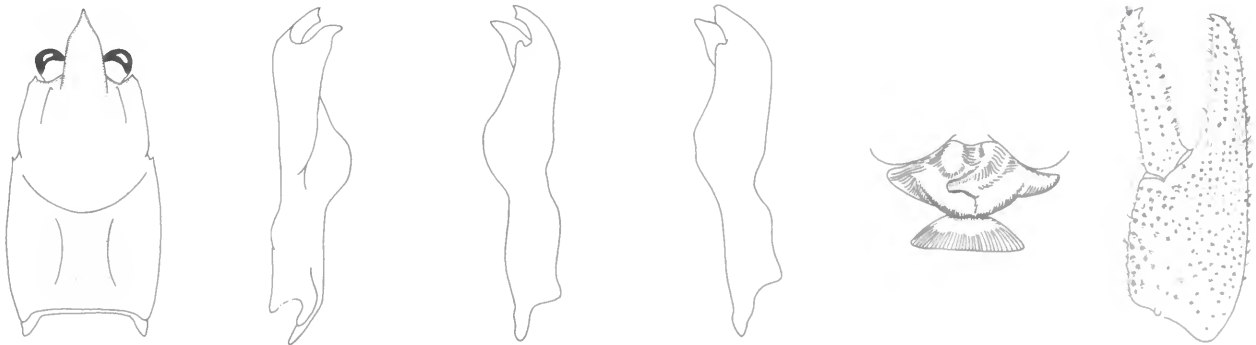




104. *Cambarus (Puncticambarus) robustus*



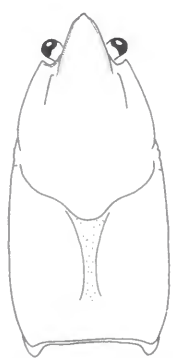
105. *Cambarus (Puncticambarus) veteranus*



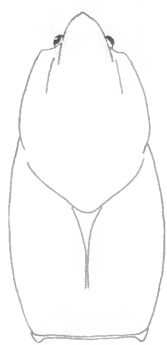
106. *Cambarus (Veticambarus) pristinus*



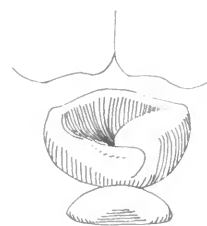
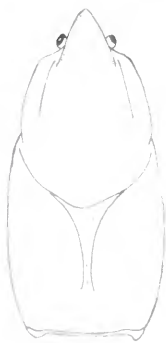
107. *Distocambarus (Distocambarus) crockeri*



108. *Distocambarus (Distocambarus) devexus*



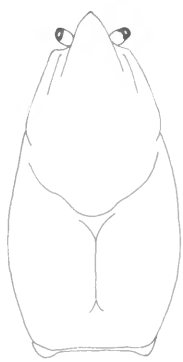
109. *Distocambarus (Fitzcambarus) carlsoni*



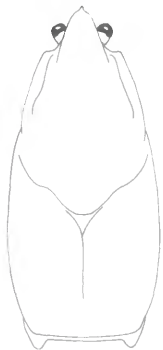
110. *Distocambarus (Fitzcambarus) youngineri*



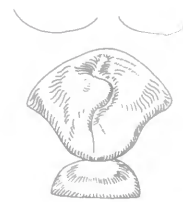
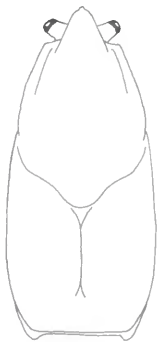
111. *Fallicambarus (Fallicambarus) macneesei*



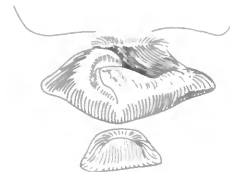
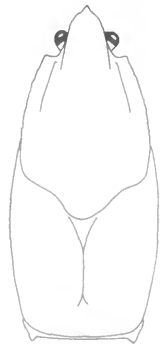
112. *Fallicambarus (Fallicambarus) harpi*



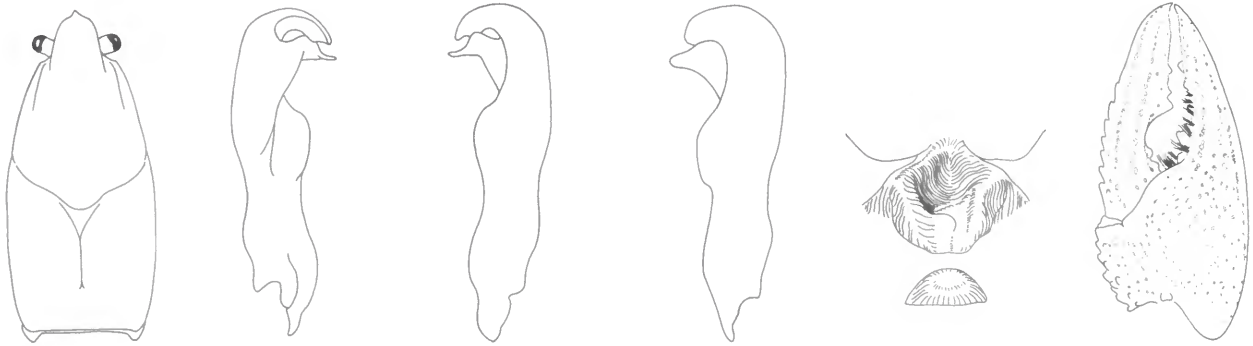
113. *Fallicambarus (Fallicambarus) jeanae*



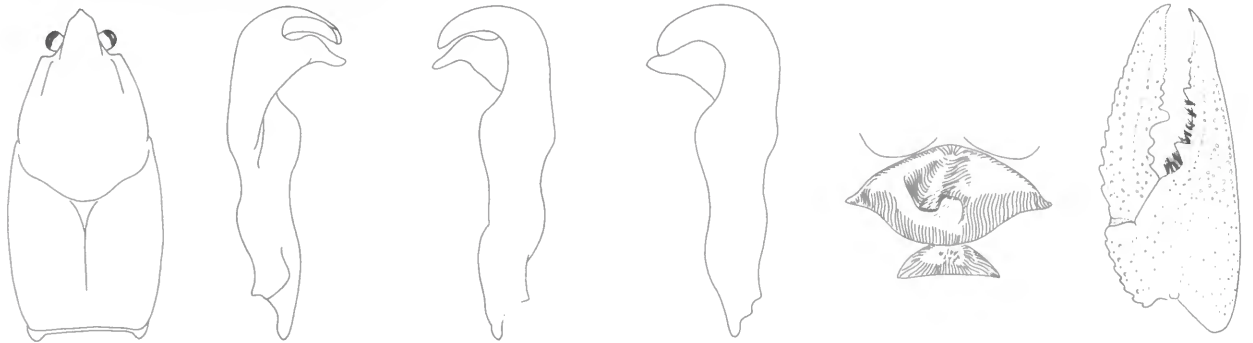
114. *Fallicambarus (Fallicambarus) strawni*



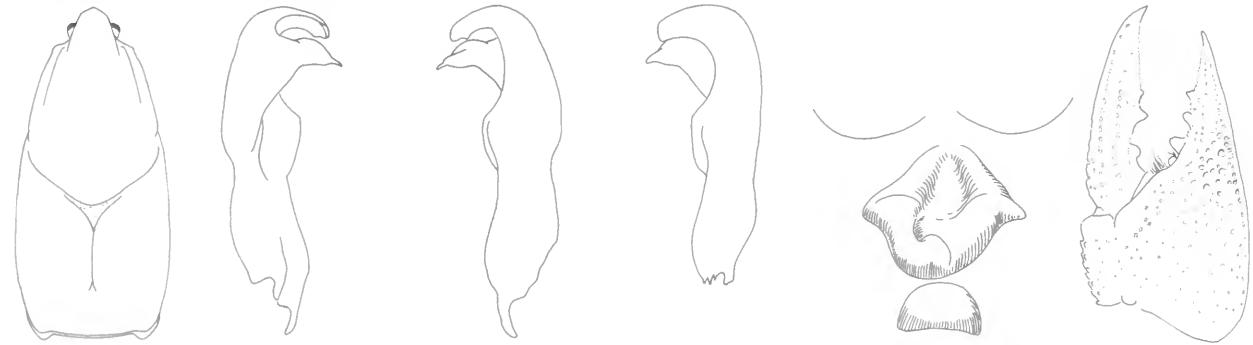
115. *Fallicambarus (Fallicambarus) dissitus*



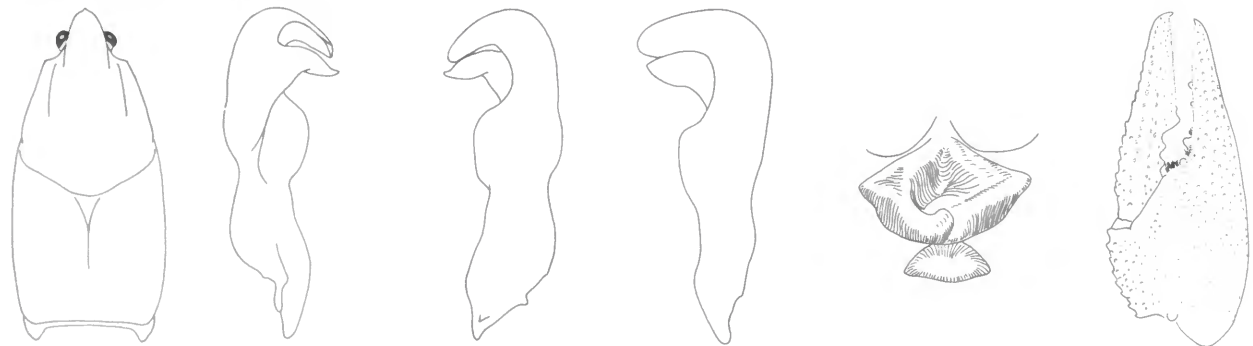
116. *Fallicambarus (Creaserinus) fodiens*



117. *Fallicambarus (Creaserinus) hedgpethi*

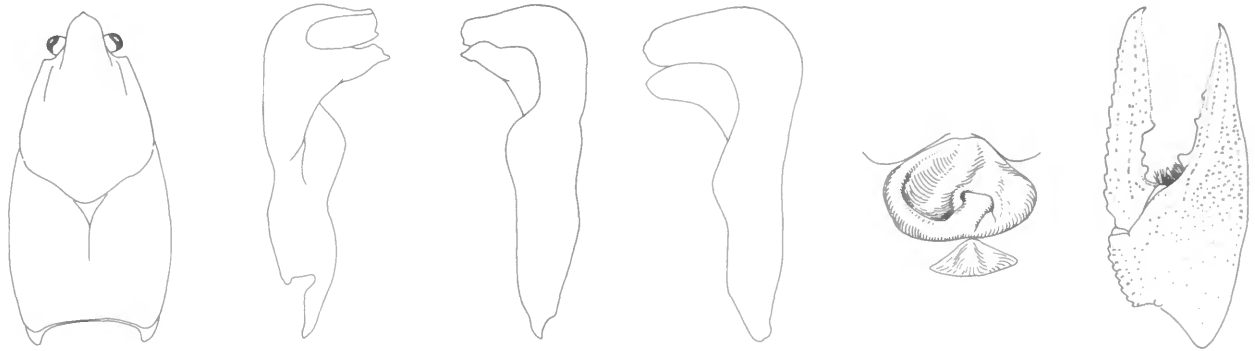


118. *Fallicambarus (Creaserinus) caesius*

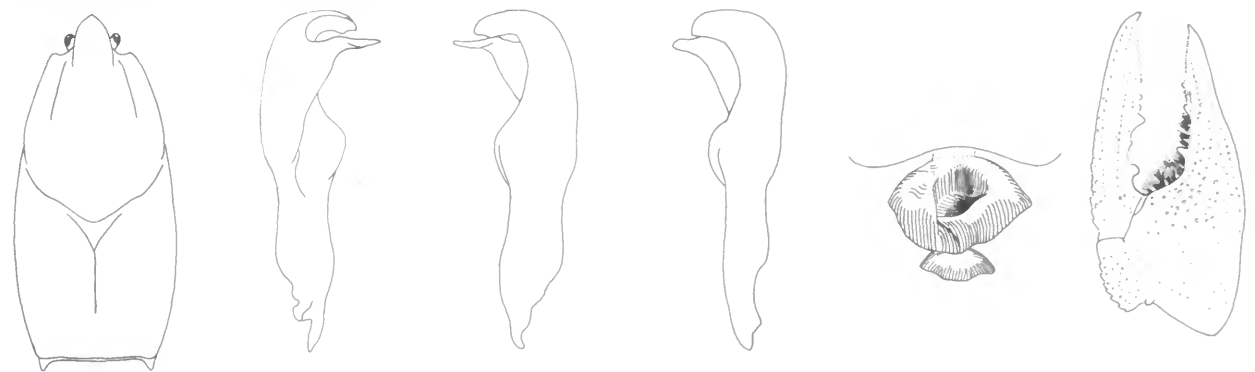


119. *Fallicambarus (Creaserinus) uhleri*

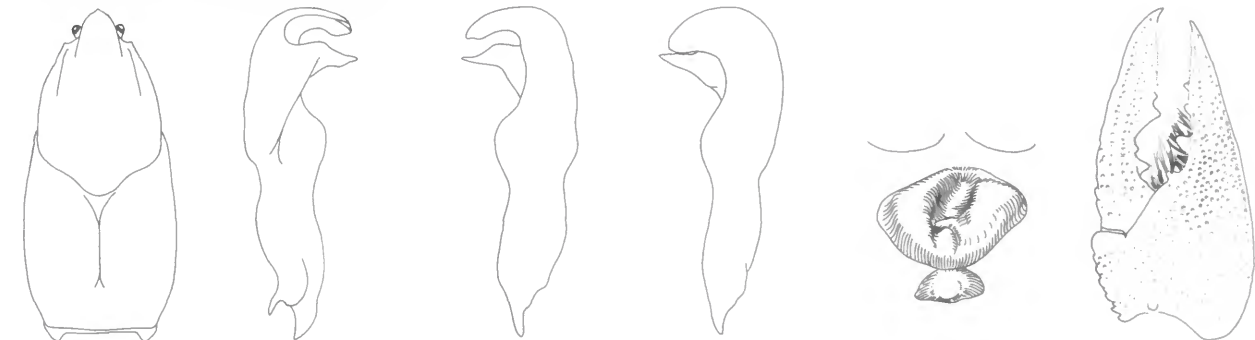




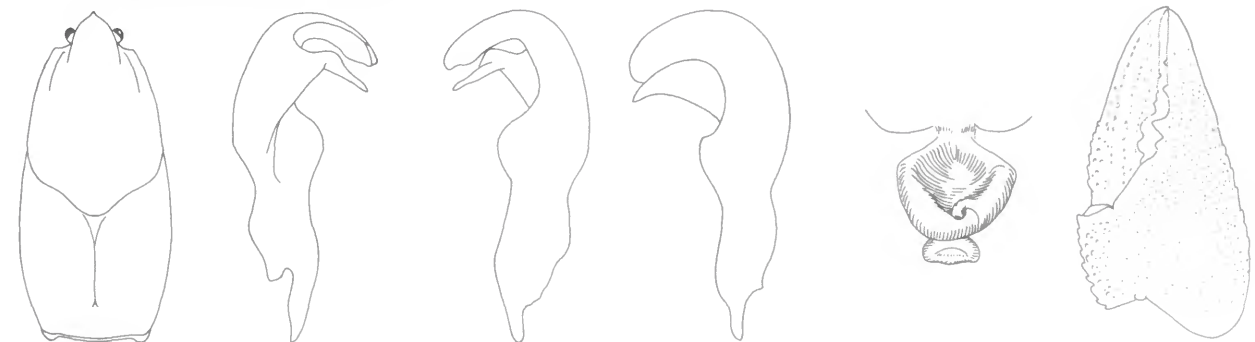
120. *Fallicambarus (Creaserinus) hortonii*



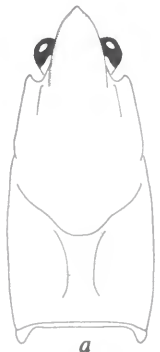
121. *Fallicambarus (Creaserinus) danielae*



122. *Fallicambarus (Creaserinus) oryktes*



123. *Fallicambarus (Creaserinus) byersi*



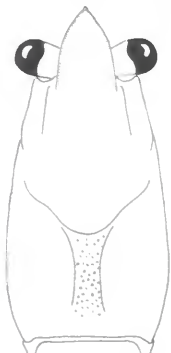
124. *Faxonella clypeata*



e



f



125. *Faxonella blairi*

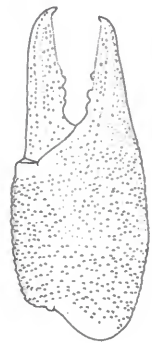
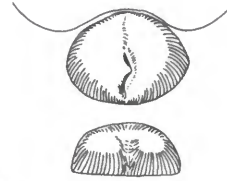
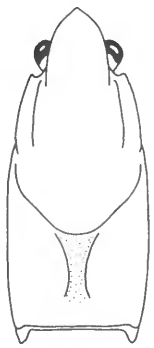


126. *Faxonella creaseri*

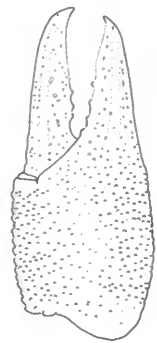
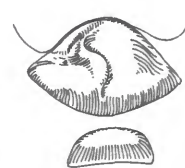
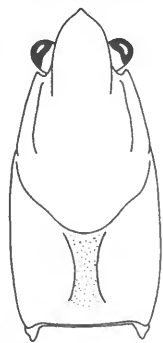


127. *Faxonella beyeri*

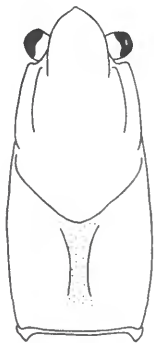




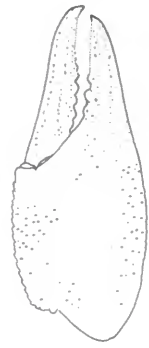
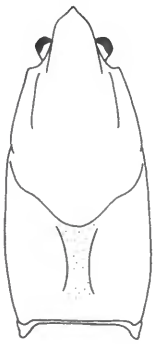
128. *Hobbseus orconectoides*



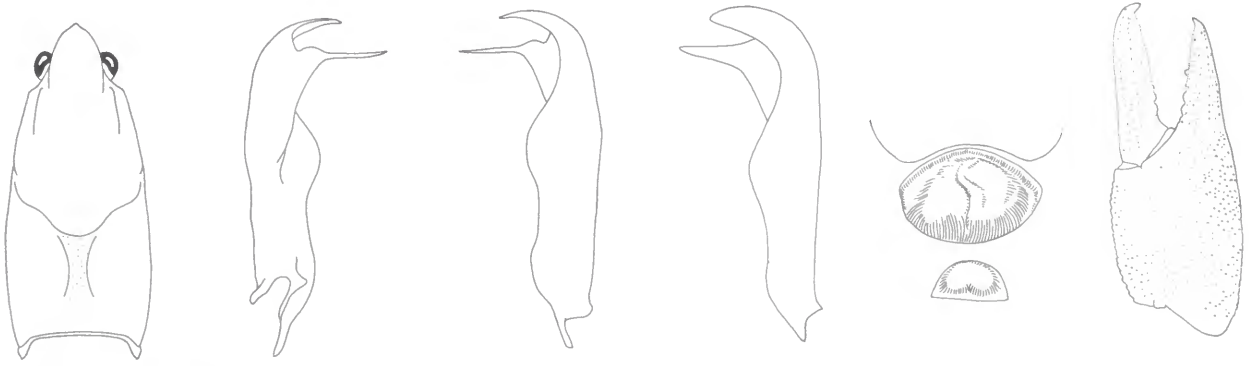
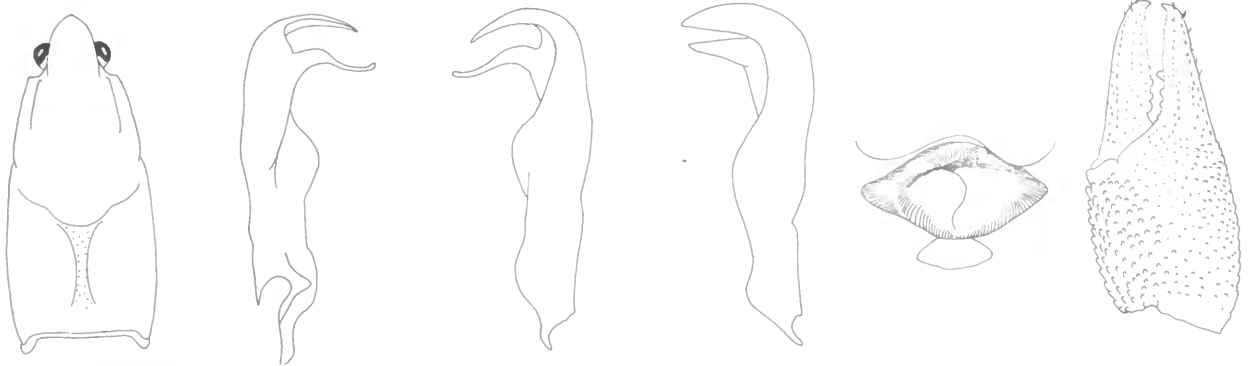
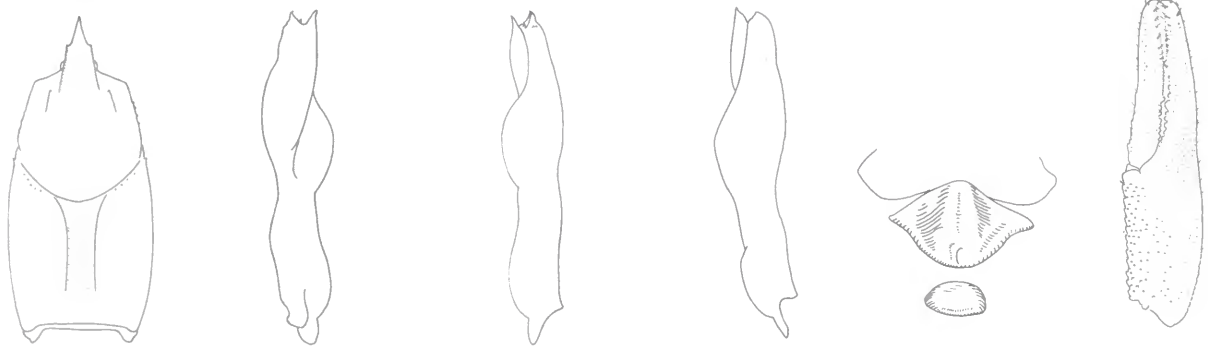
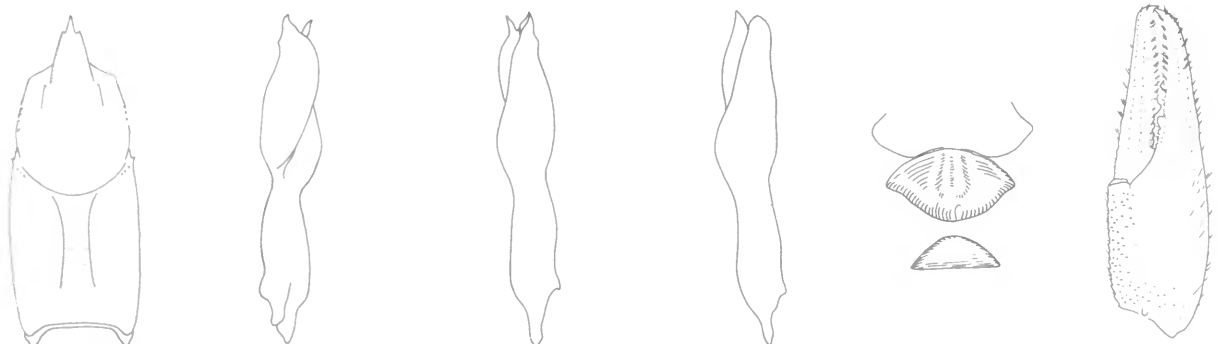
129. *Hobbseus cristatus*



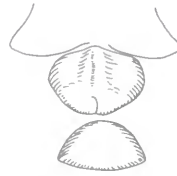
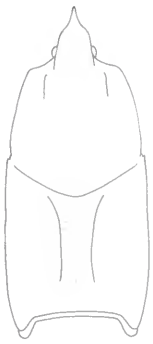
130. *Hobbseus prominens*



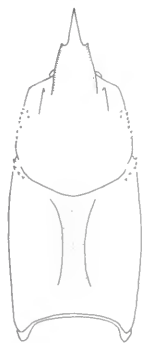
131. *Hobbseus valleculeus*

132. *Hobbseus attenuatus*133. *Hobbseus petilus*134. *Orconectes (Orconectes) australis australis*135. *Orconectes (Orconectes) australis packardi*

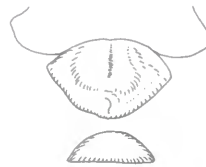
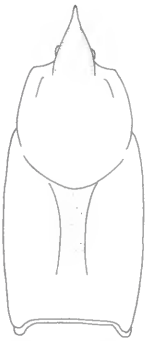




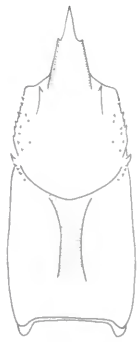
136. *Orconectes (Orconectes) incomptus*



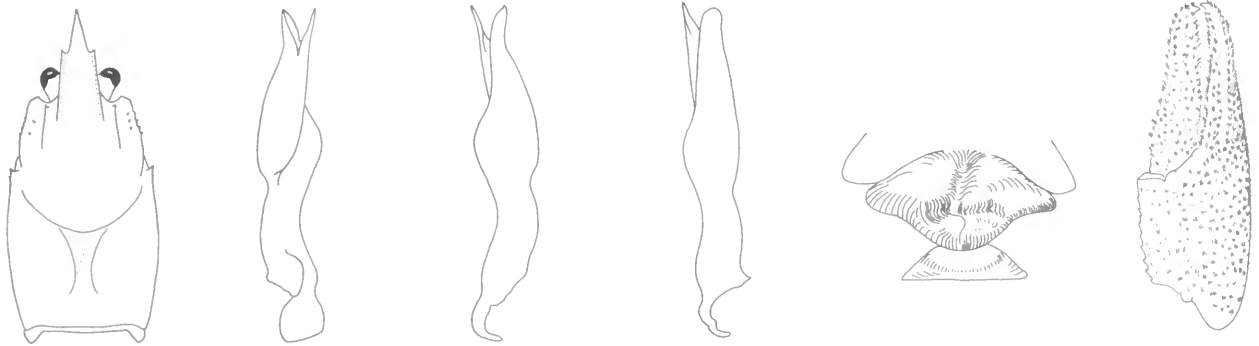
137. *Orconectes (Orconectes) inermis inermis*



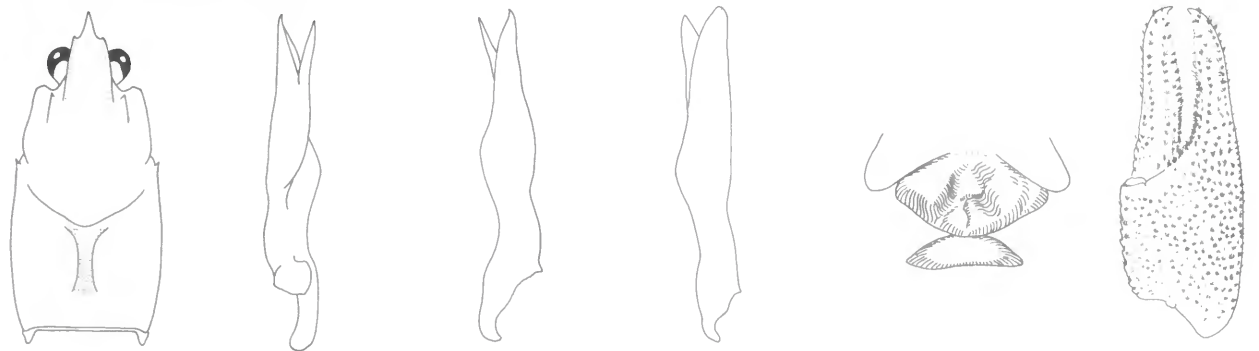
138. *Orconectes (Orconectes) inermis testii*



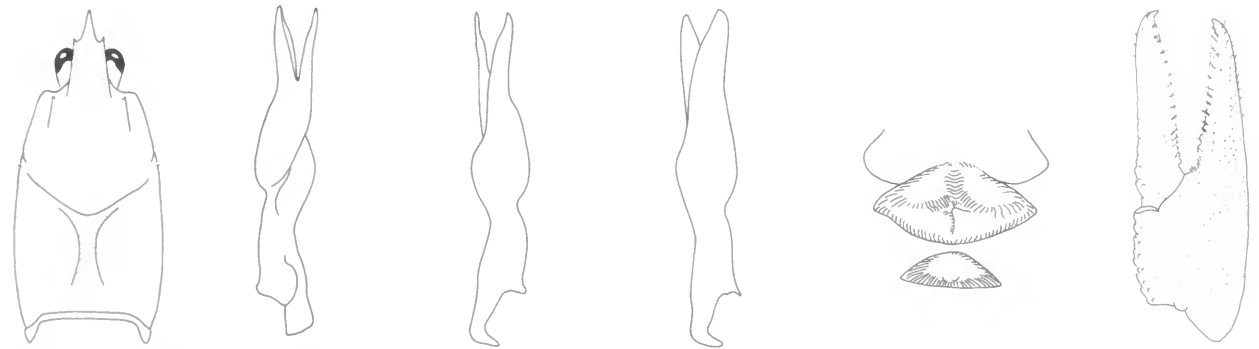
139. *Orconectes (Orconectes) pellucidus*



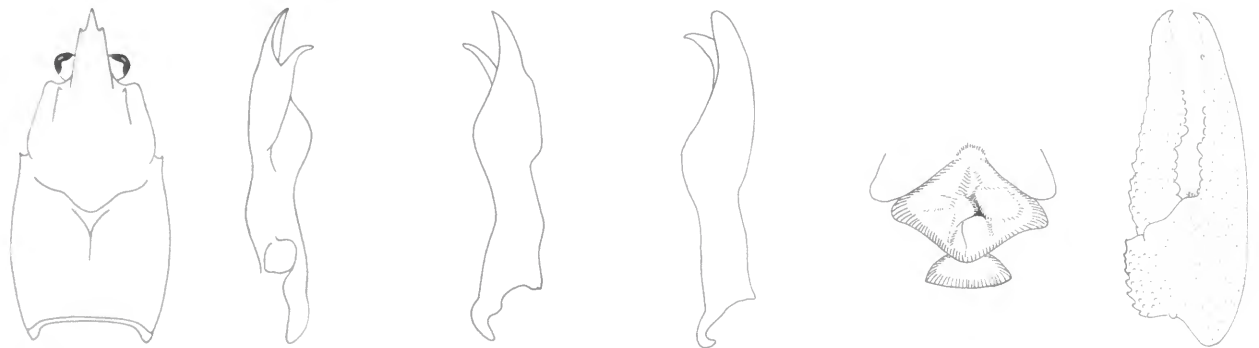
140. *Orconectes (Faxonius) limosus*



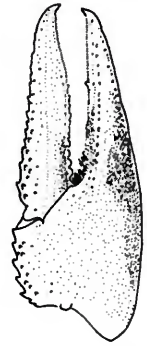
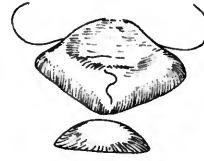
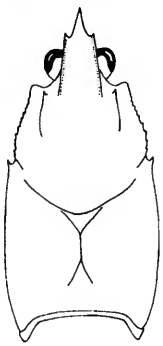
141. *Orconectes (Faxonius) wrighti*



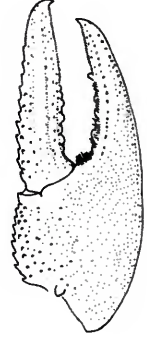
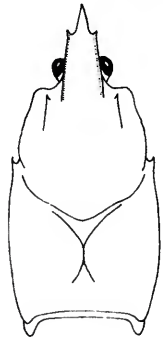
142. *Orconectes (Faxonius) indianensis*



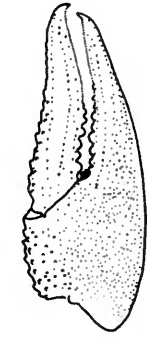
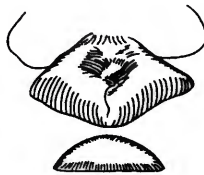
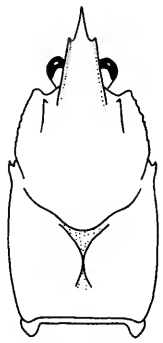
143. *Orconectes (Hespericambarus) difficilis*



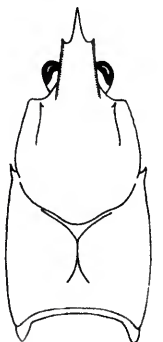
144. *Orconectes (Hespericambarus) blacki*



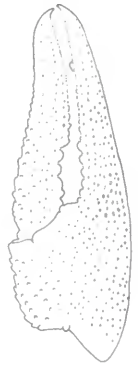
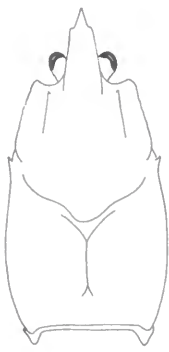
145. *Orconectes (Hespericambarus) maletae*



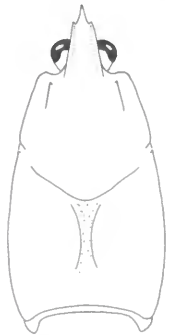
146. *Orconectes (Hespericambarus) hathawayi*



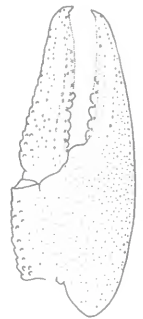
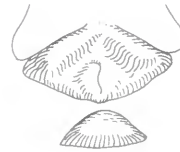
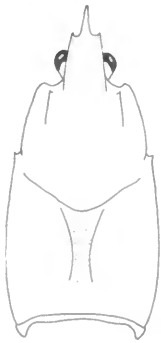
147. *Orconectes (Hespericambarus) perfectus*



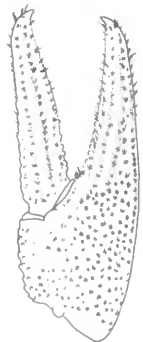
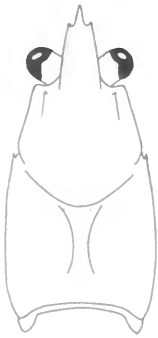
148. *Orconectes (Hespericambarus) deanae*



149. *Orconectes (Billecambarus) harrisonii*



150. *Orconectes (Rhoadesius) sloanii*

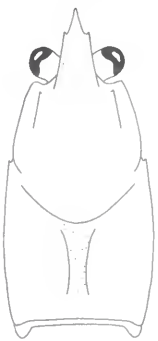


151. *Orconectes (Rhoadesius) kentuckiensis*

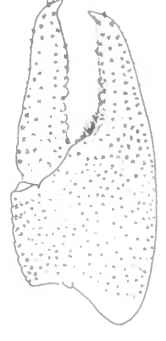
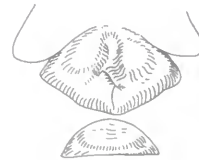
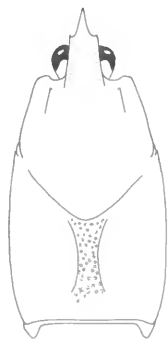




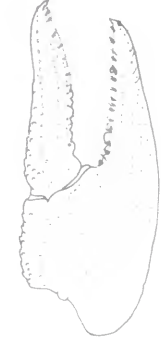
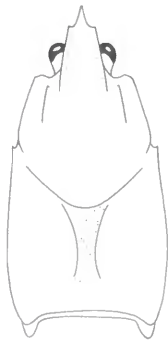
152. *Orconectes (Tragolicambarus) lancifer*



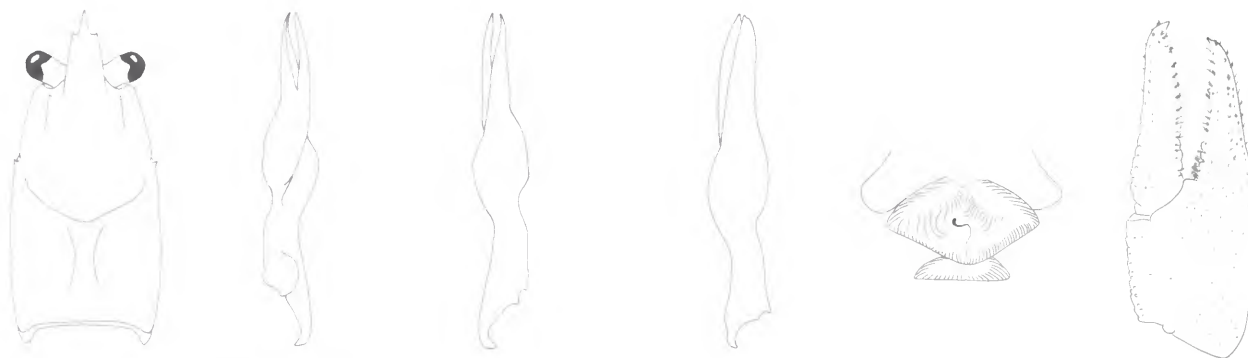
153. *Orconectes (Crockerinus) marchandi*



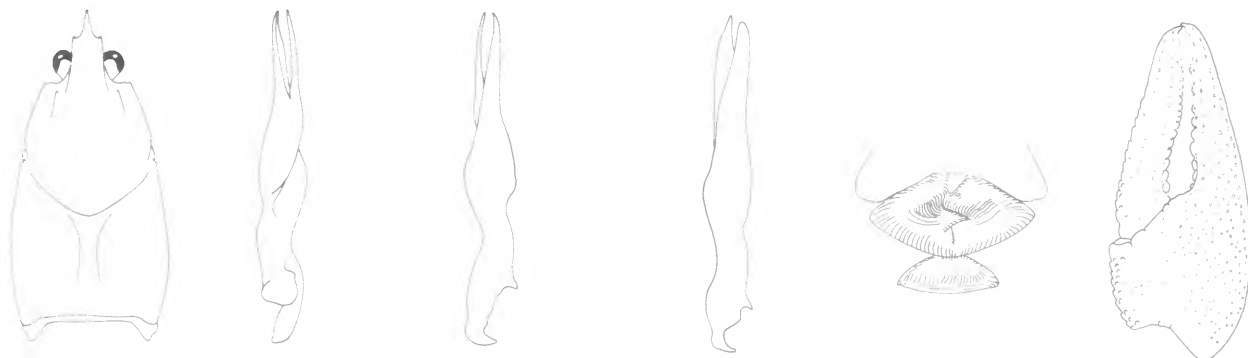
154. *Orconectes (Crockerinus) eupunctus*



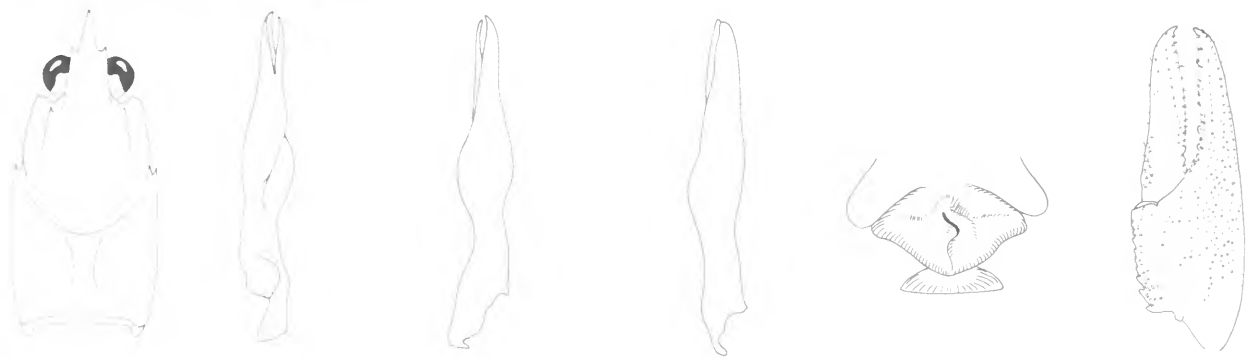
155. *Orconectes (Crockerinus) obscurus*



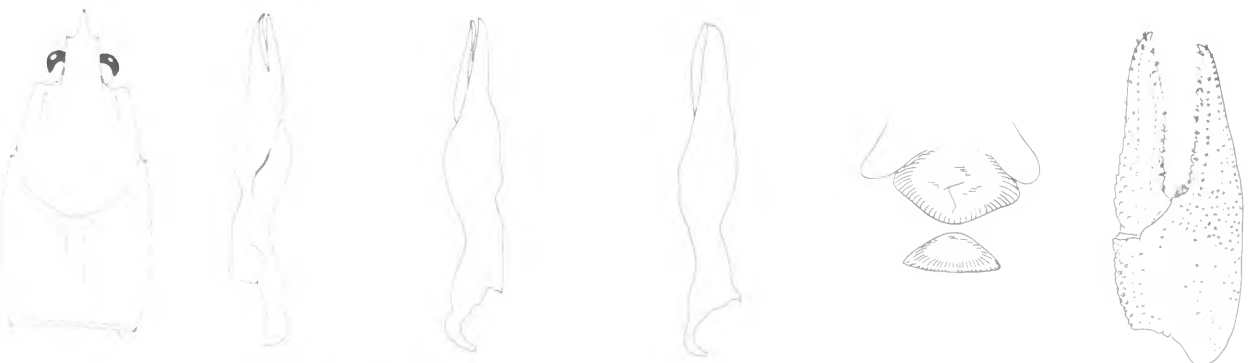
156. *Orconectes (Crockerinus) propinquus*



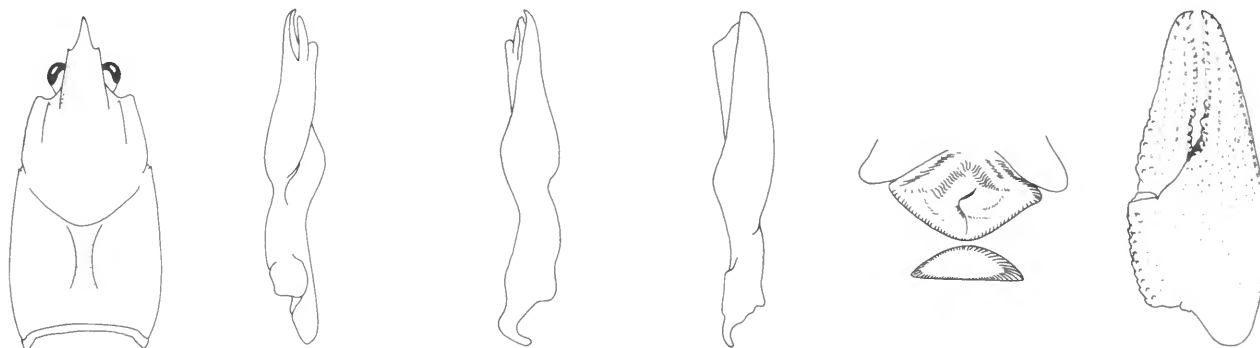
157. *Orconectes (Crockerinus) jeffersoni*



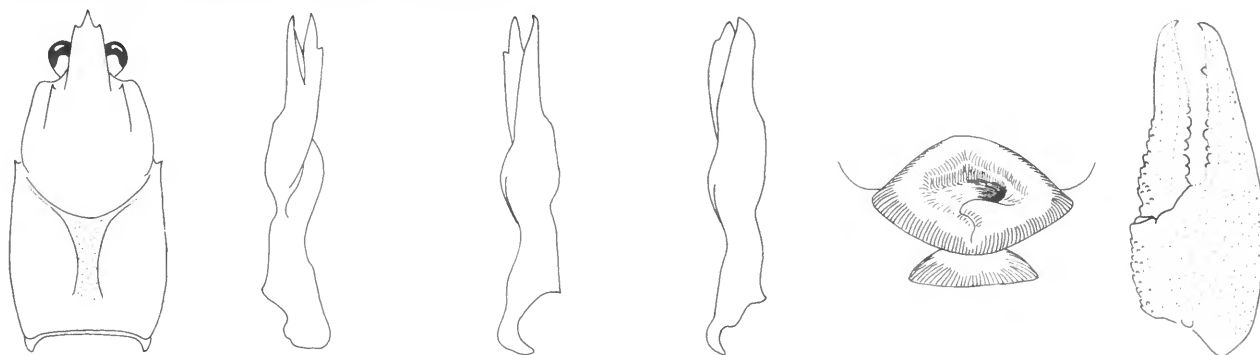
158. *Orconectes (Crockerinus) virginiensis*



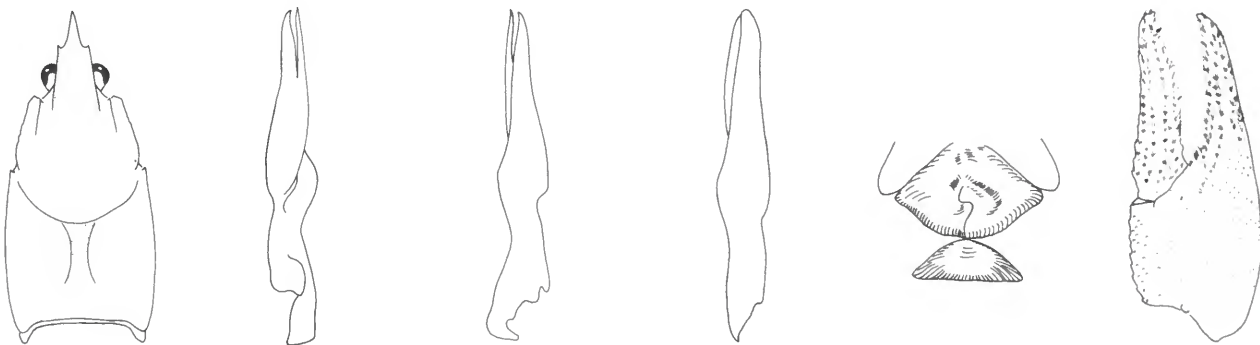
159. *Orconectes (Crockerinus) sanbornii sanbornii*



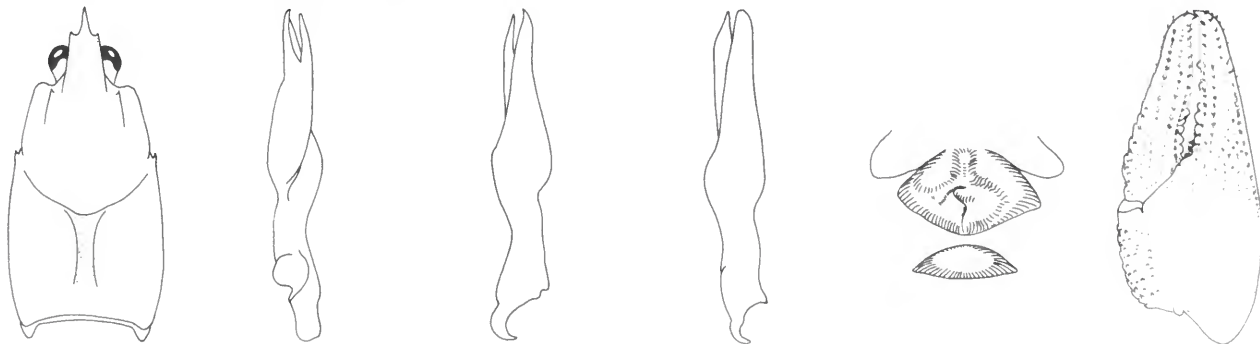
160. *Orconectes (Crockerinus) sanbornii erismophorus*



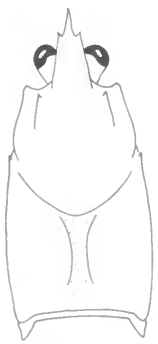
161. *Orconectes (Crockerinus) stannardi*



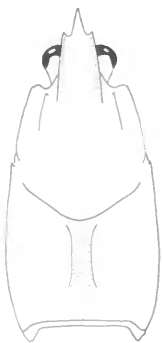
162. *Orconectes (Crockerinus) erichsonianus*



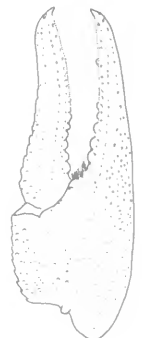
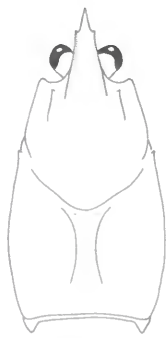
163. *Orconectes (Crockerinus) rafinesquei*



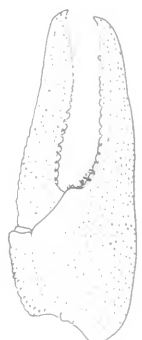
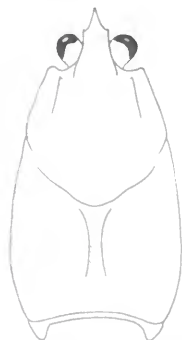
164. *Orconectes (Crockerinus) bisectus*



165. *Orconectes (Crockerinus) tricuspis*

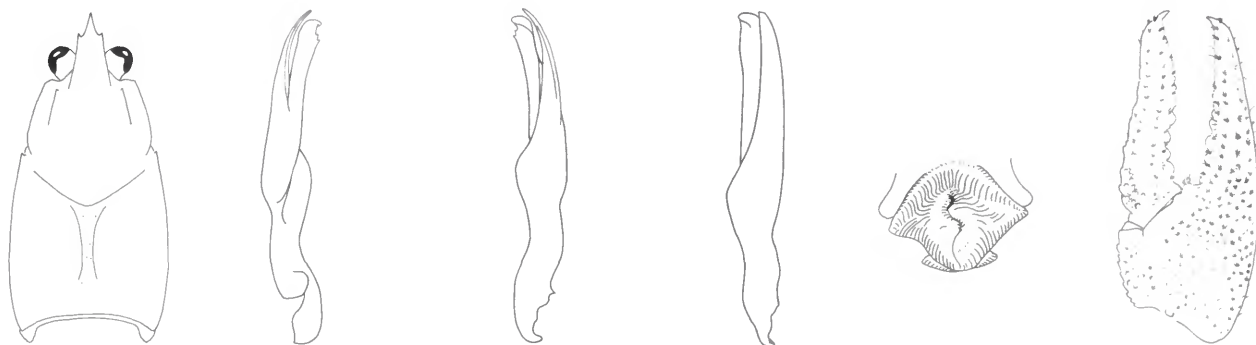


166. *Orconectes (Crockerinus) illinoiensis*

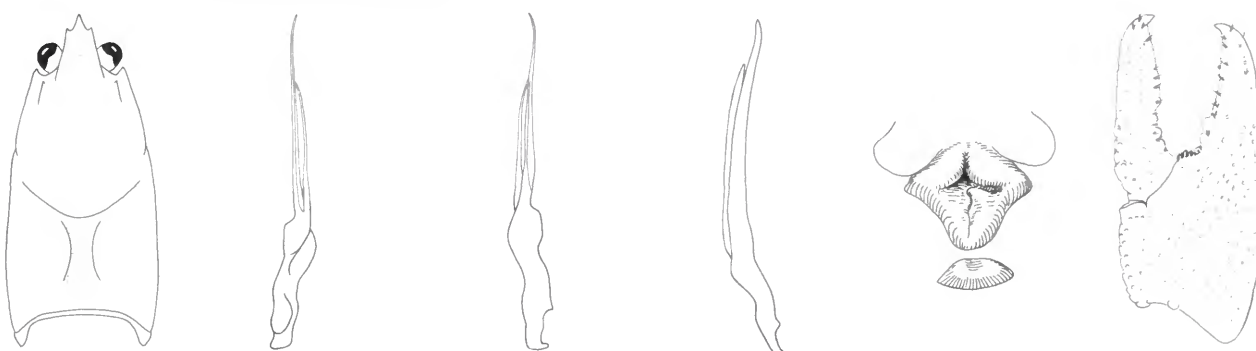


167. *Orconectes (Crockerinus) shoupi*

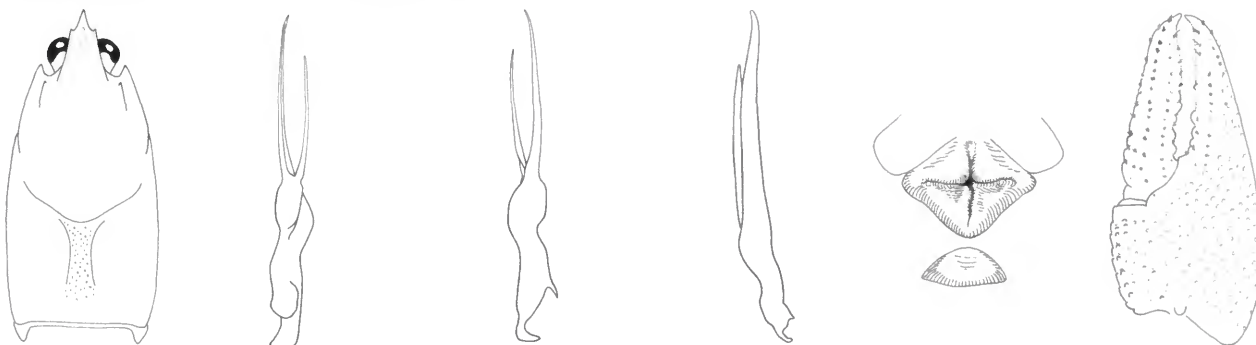




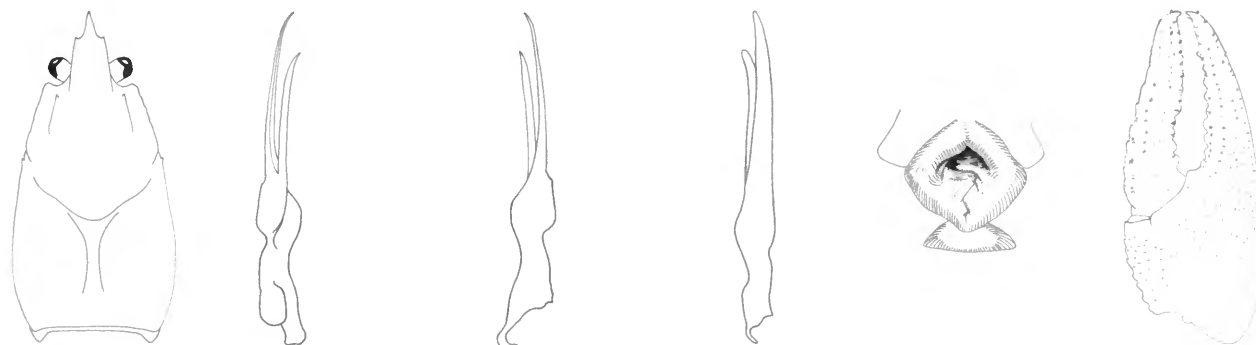
168. *Orconectes (Procericambarus) quadruncus*



169. *Orconectes (Procericambarus) leptogonopodus*



170. *Orconectes (Procericambarus) acares*



171. *Orconectes (Procericambarus) punctimanus*



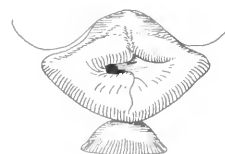
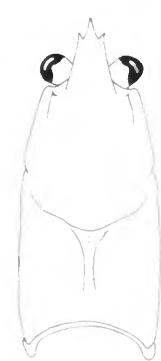
172. *Orconectes (Procericambarus) hylas*



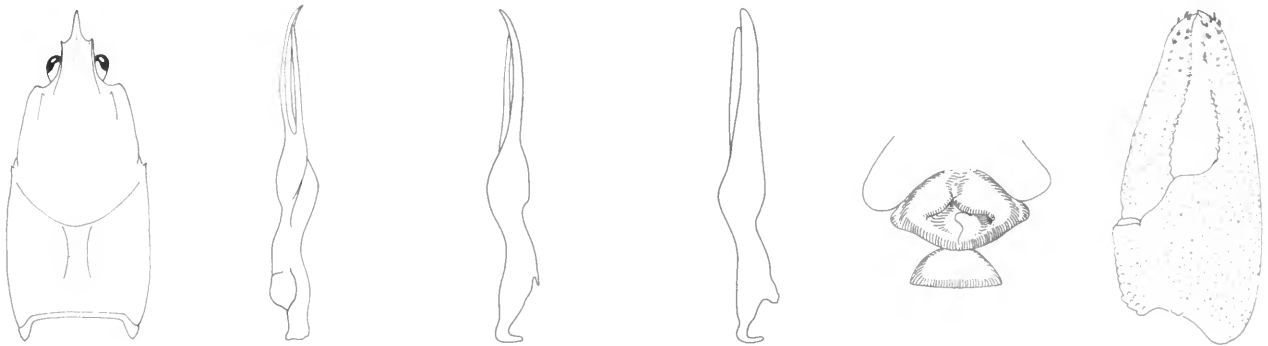
173. *Orconectes (Procericambarus) peruncus*



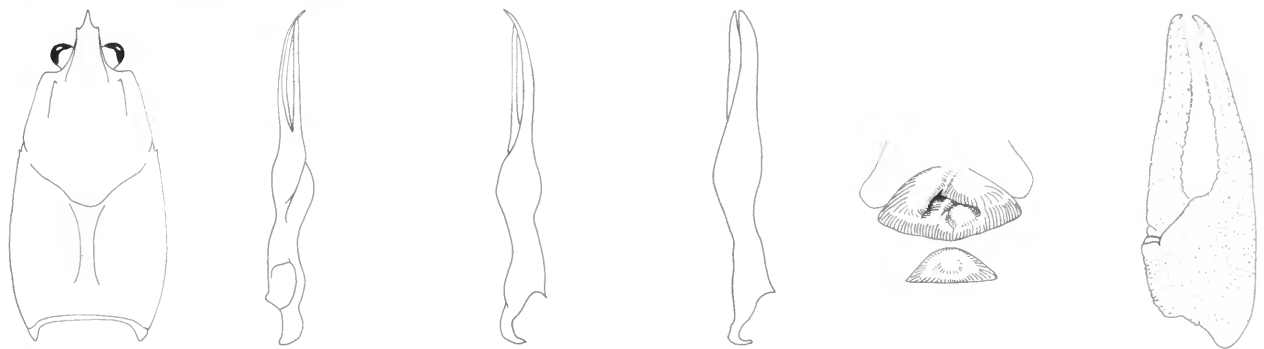
174. *Orconectes (Procericambarus) rusticus*



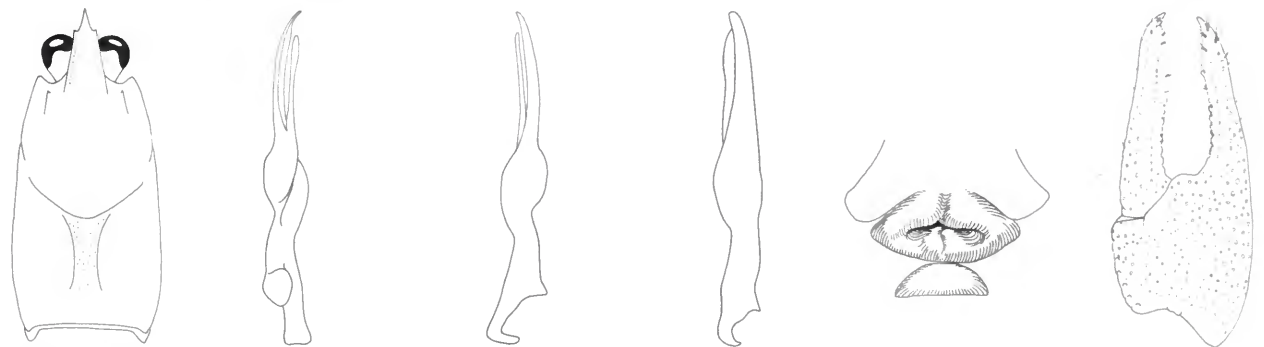
175. *Orconectes (Procericambarus) saxatilis*



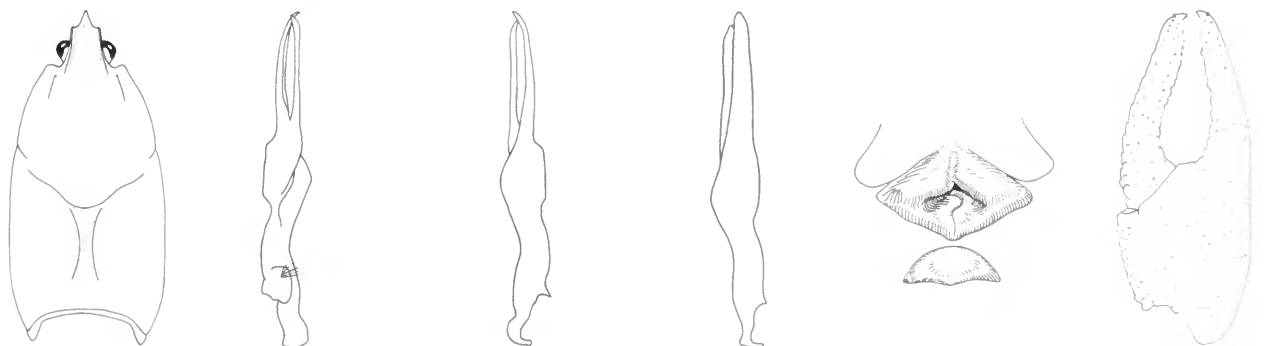
176. *Orconectes (Procericambarus) forceps*



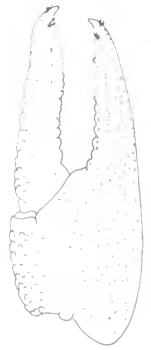
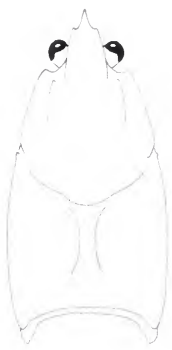
177. *Orconectes (Procericambarus) placidus*



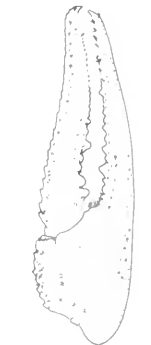
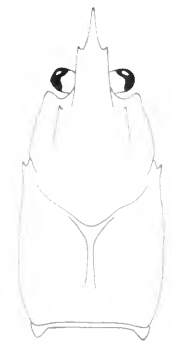
178. *Orconectes (Procericambarus) barrenensi*



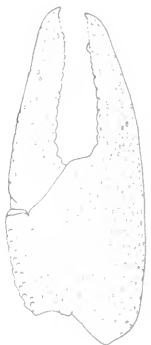
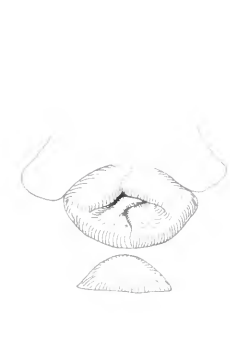
179. *Orconectes (Procericambarus) neglectus chaenodactylus*



180. *Orconectes (Procericambarus) neglectus neglectus*



181. *Orconectes (Procericambarus) longidigitus*

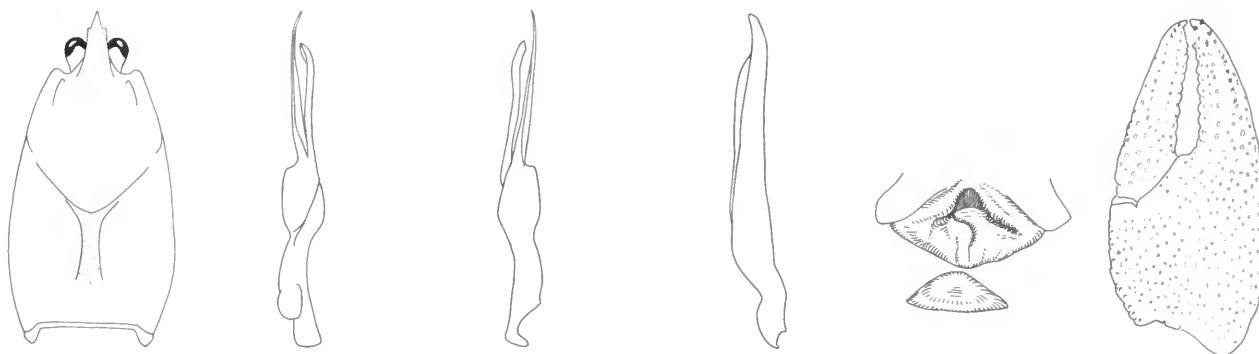


182. *Orconectes (Procericambarus) mirus*

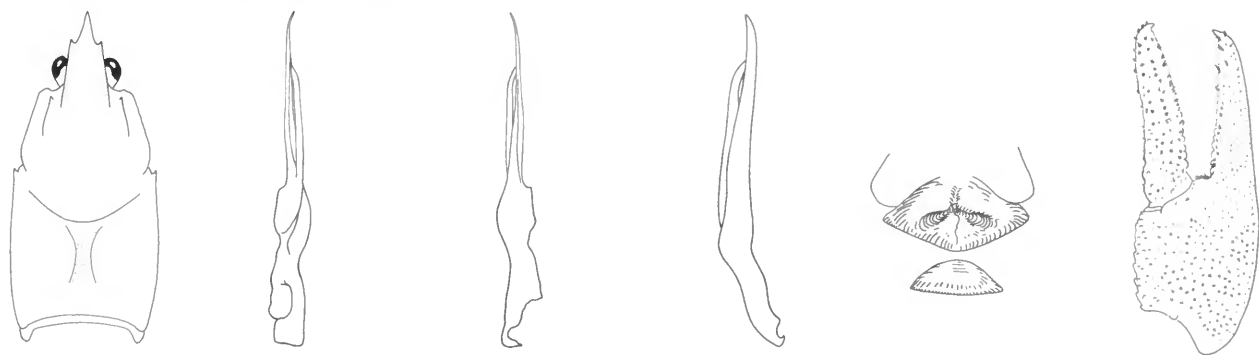


183. *Orconectes (Procericambarus) nana*

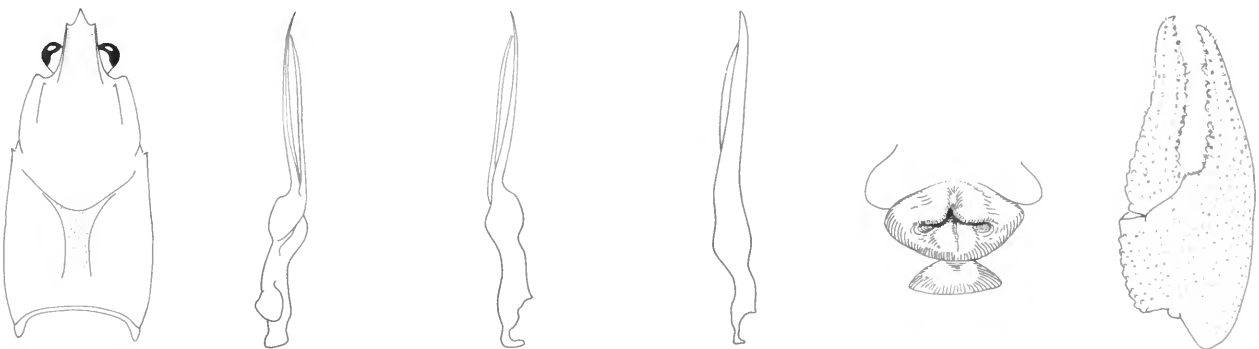




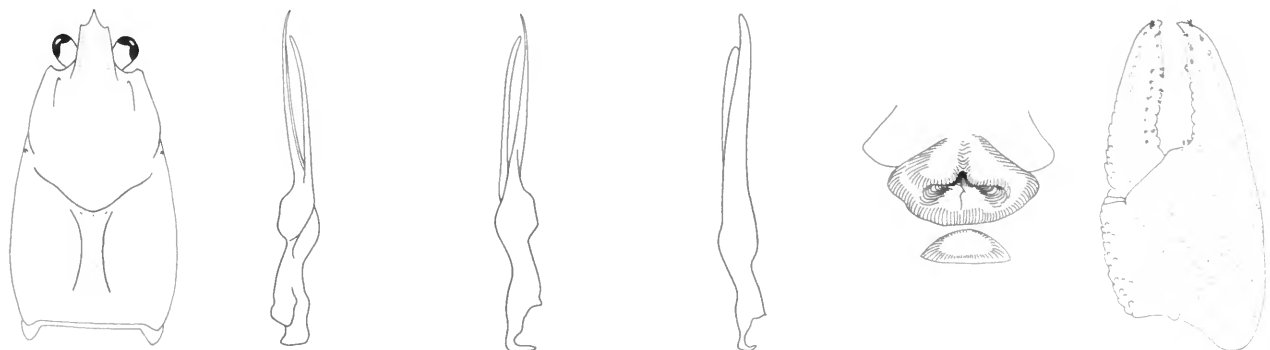
184. *Orconectes (Procericambarus) macrus*



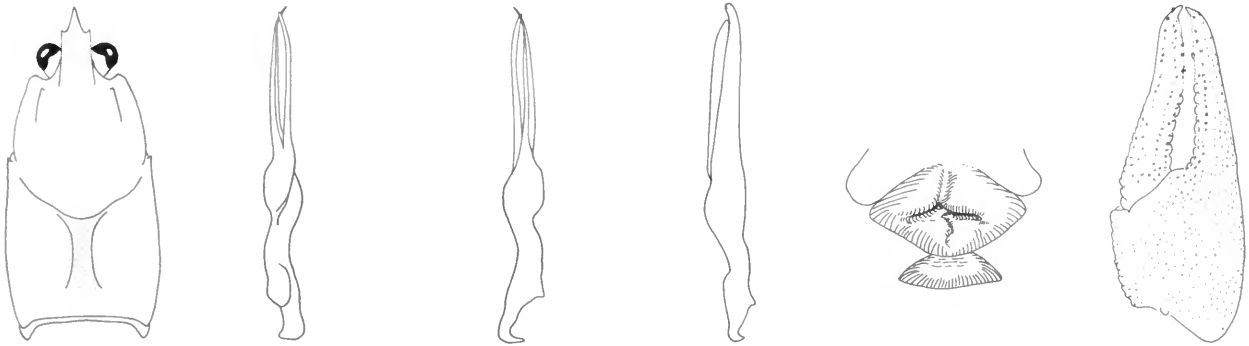
185. *Orconectes (Procericambarus) spinosus*



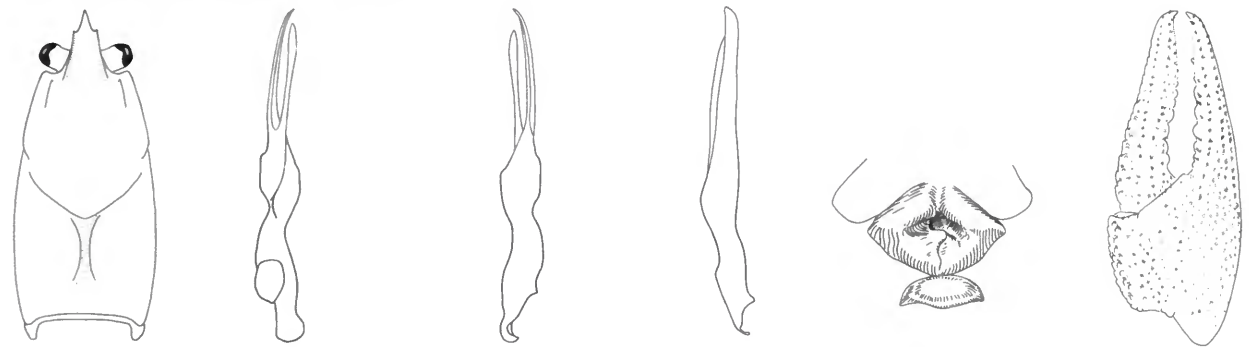
186. *Orconectes (Procericambarus) putnami*



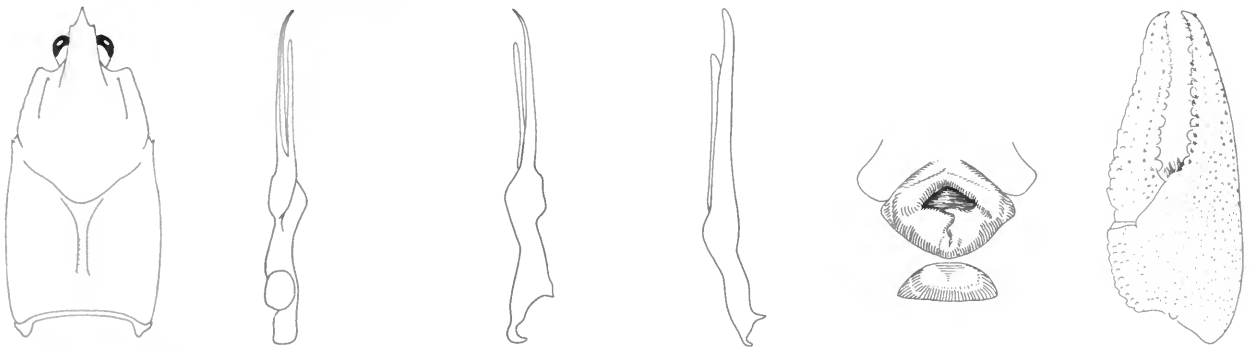
187. *Orconectes (Procericambarus) medius*



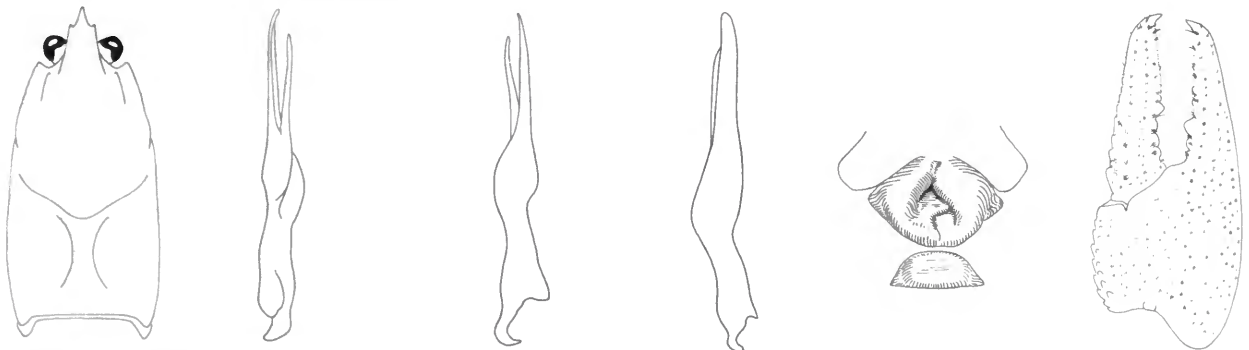
188. *Orconectes (Procericambarus) luteus*



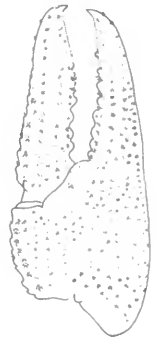
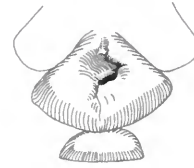
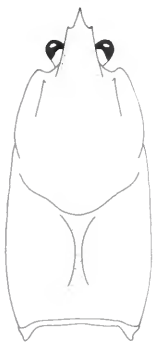
189. *Orconectes (Procericambarus) menae*



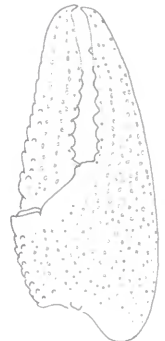
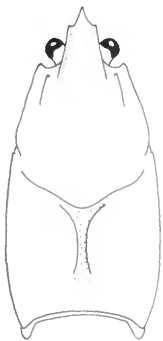
190. *Orconectes (Procericambarus) ozarkae*



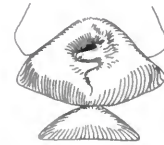
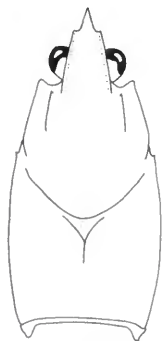
191. *Orconectes (Procericambarus) williams*



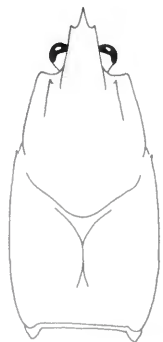
192. *Orconectes (Buannulifictus) meeki meeki*



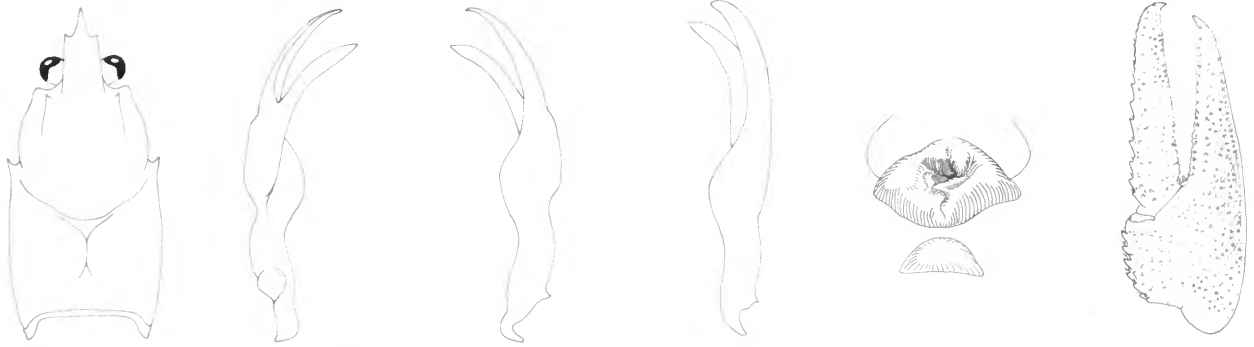
193. *Orconectes (Buannulifictus) meeki brevis*



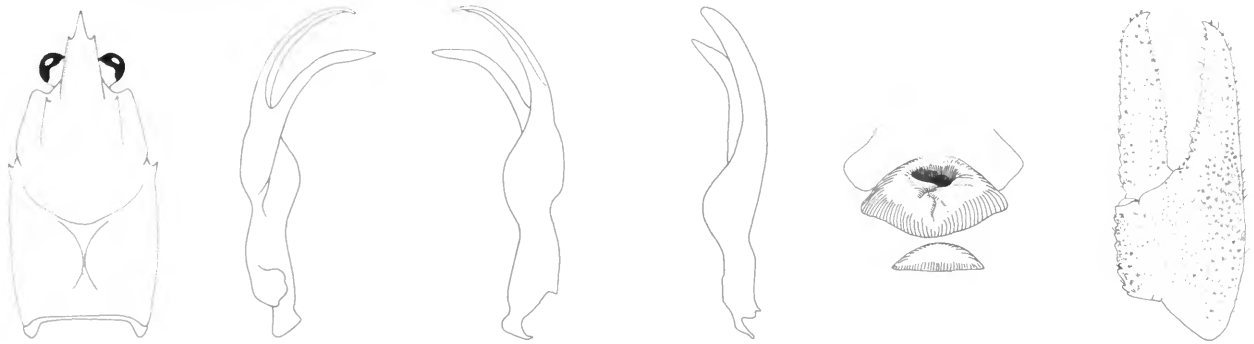
194. *Orconectes (Buannulifictus) palmeri palmeri*



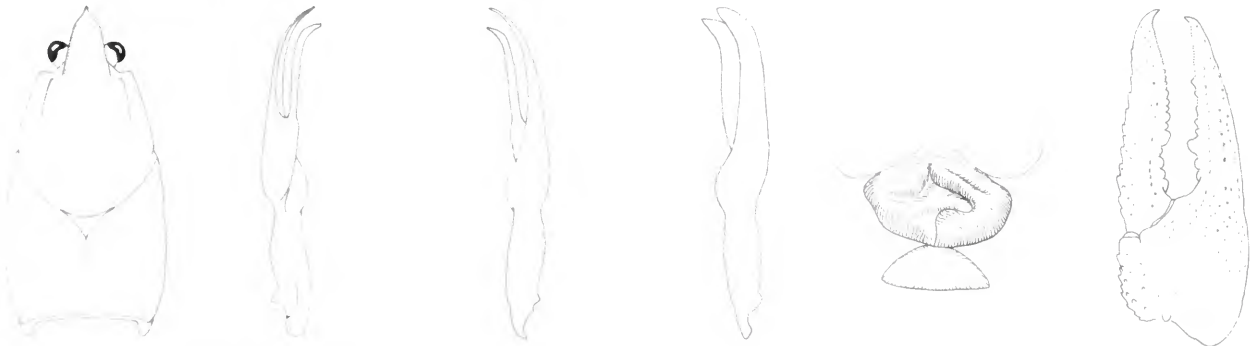
195. *Orconectes (Buannulifictus) palmeri longimanus*



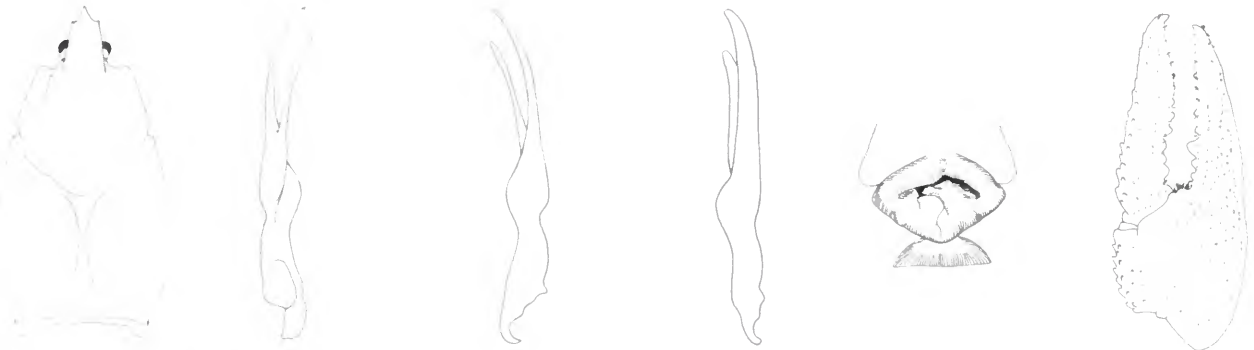
196. *Orconectes (Buannulifictus) palmeri creolanus*



197. *Orconectes (Buannulifictus) hobbsi*



198. *Orconectes (Gremicambarus) mississippiensis*

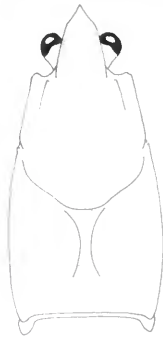


199. *Orconectes (Gremicambarus) virilis*

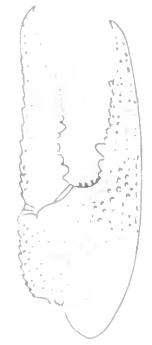
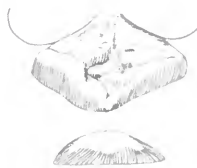
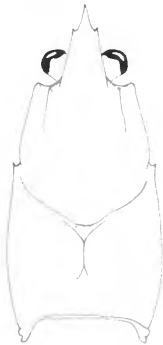




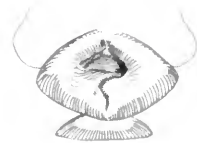
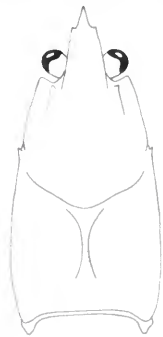
200. *Orconectes (Gremicambarus) causeyi*



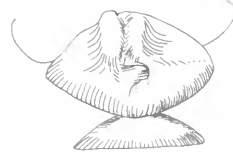
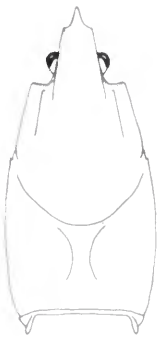
201. *Orconectes (Gremicambarus) immunis*



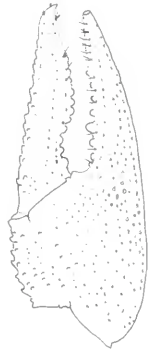
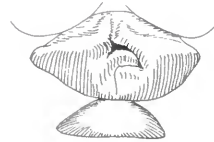
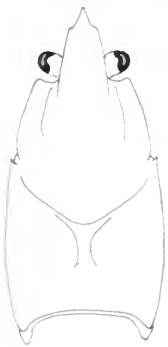
202. *Orconectes (Gremicambarus) holti*



203. *Orconectes (Gremicambarus) nais*



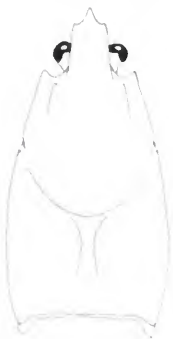
204. *Orconectes (Gemicambarus) cooperi*



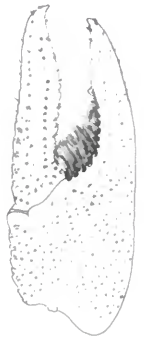
205. *Orconectes (Gemicambarus) etnier*



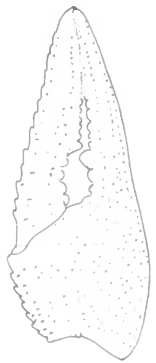
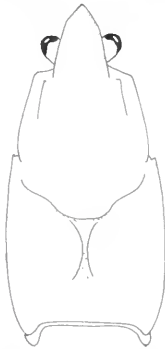
206. *Orconectes (Gemicambarus) alabamensis*



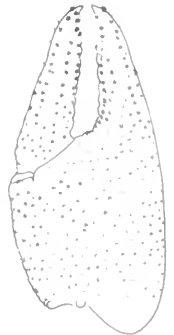
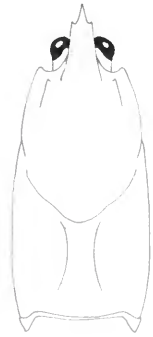
207. *Orconectes (Gemicambarus) rhoadi*



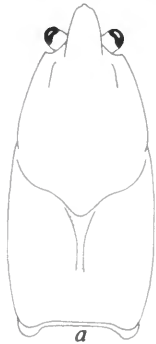
208. *Orconectes (Gremicambarus) validus*



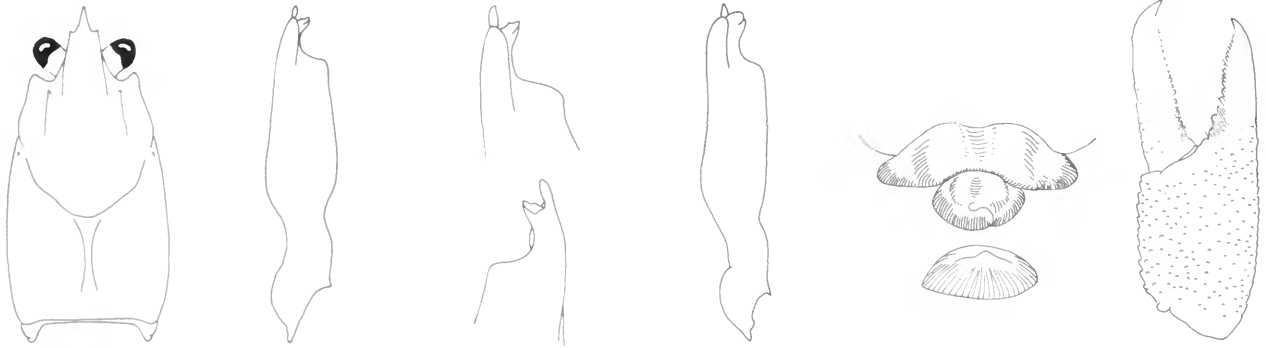
209. *Orconectes (Gremicambarus) chickasawae*



210. *Orconectes (Gremicambarus) compressus*



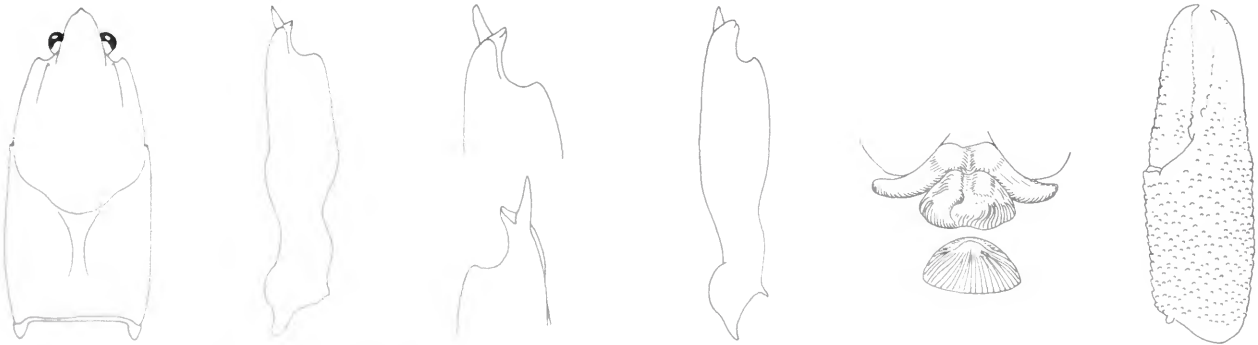
211. *Procambarus (Acucauda) fitzpatricki*



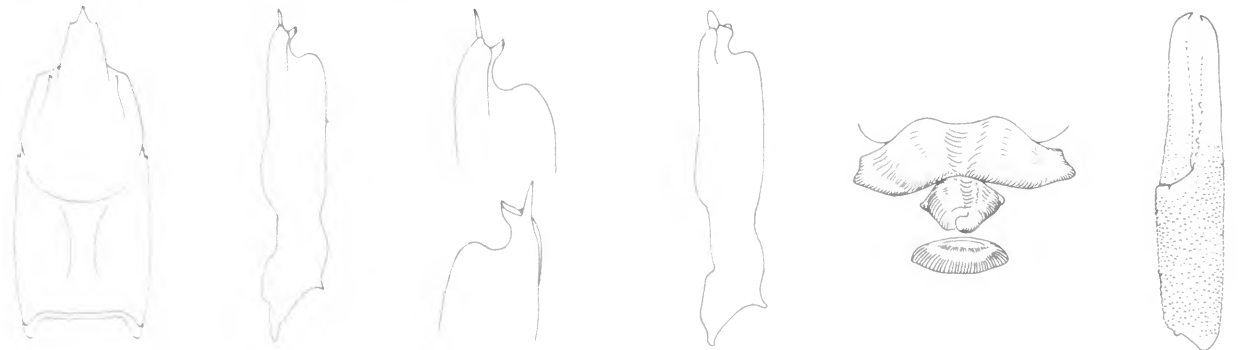
212. *Procamburus (Austrocambarus) vazquezei*



213. *Procamburus (Austrocambarus) sbordonii*

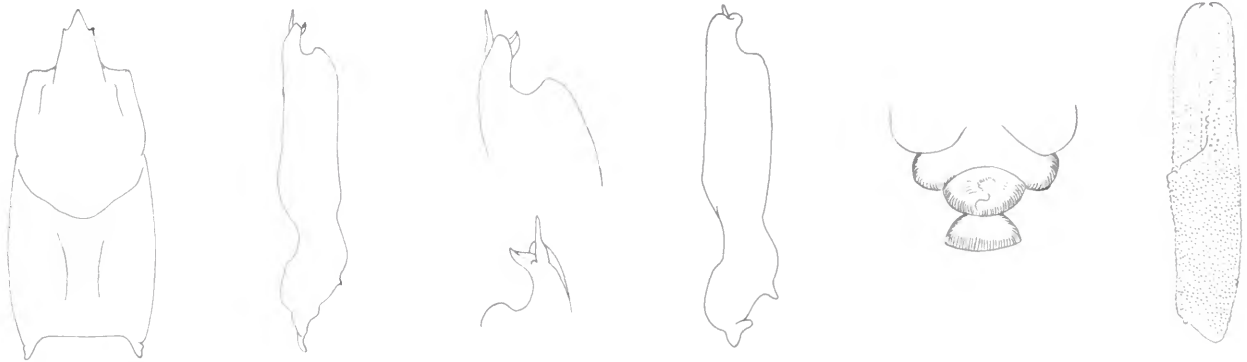


214. *Procamburus (Austrocambarus) mexicanus*

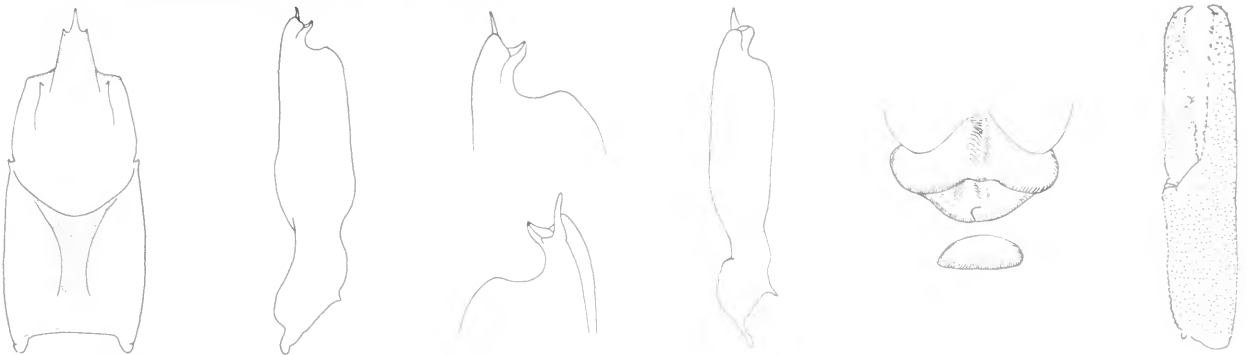


215. *Procamburus (Austrocambarus) rodriguezii*

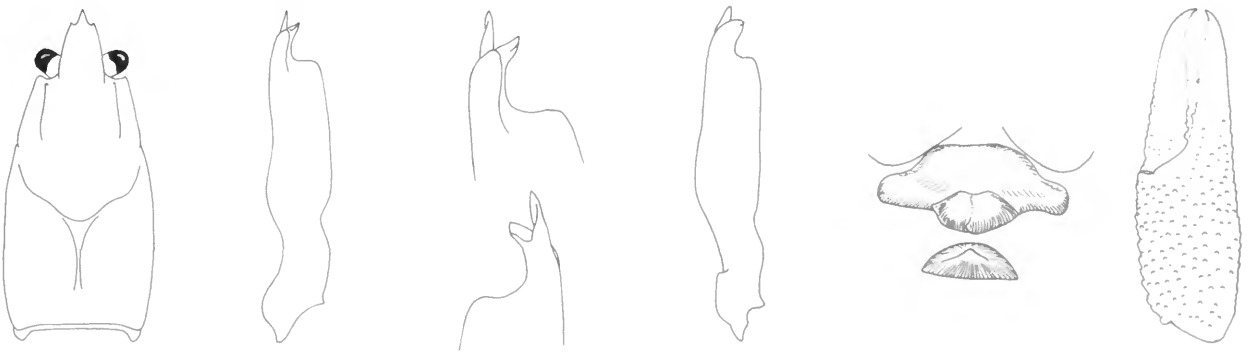




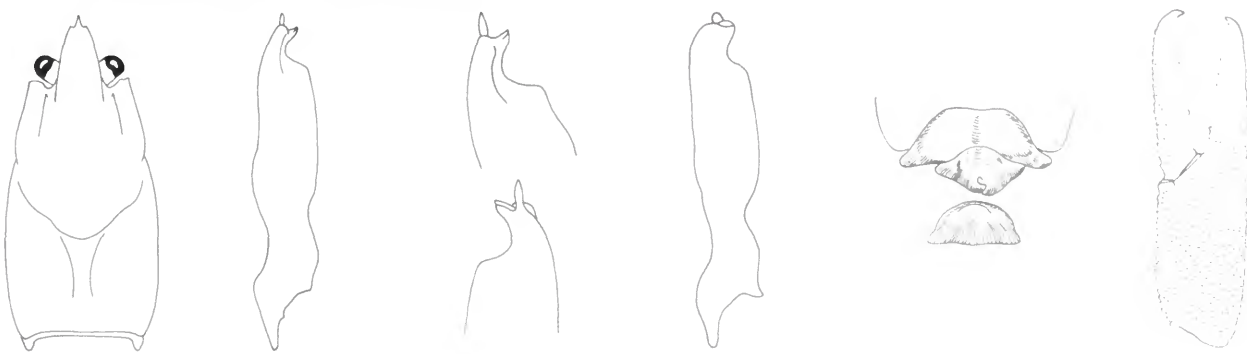
216. *Procambarus (Austrocambarus) oaxacae oaxacae*



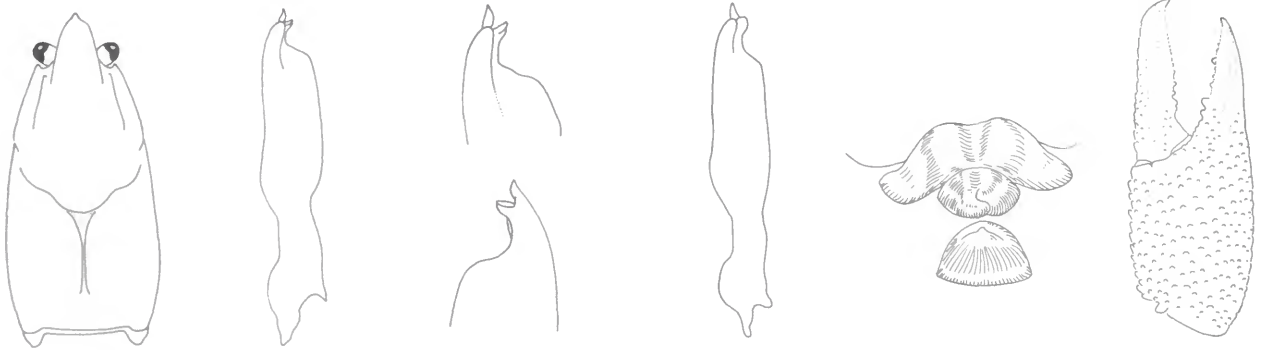
217. *Procambarus (Austrocambarus) oaxacae reddelli*



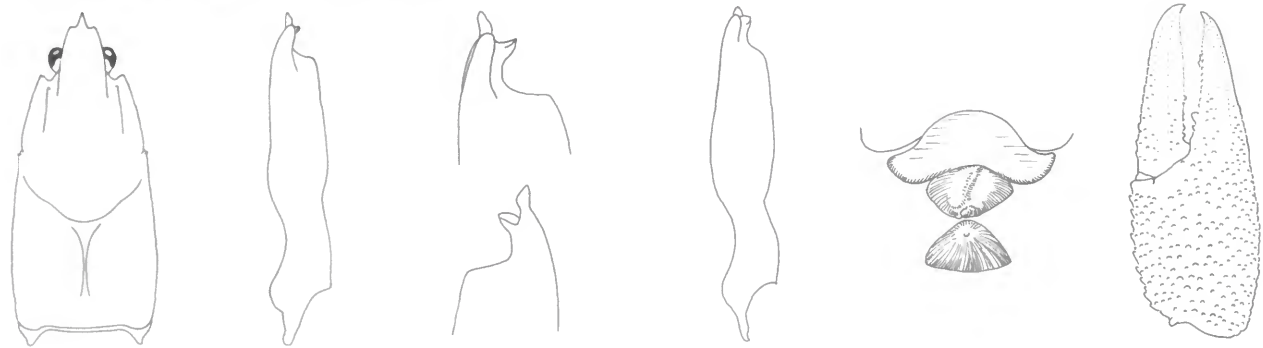
218. *Procambarus (Austrocambarus) veracruzanus*



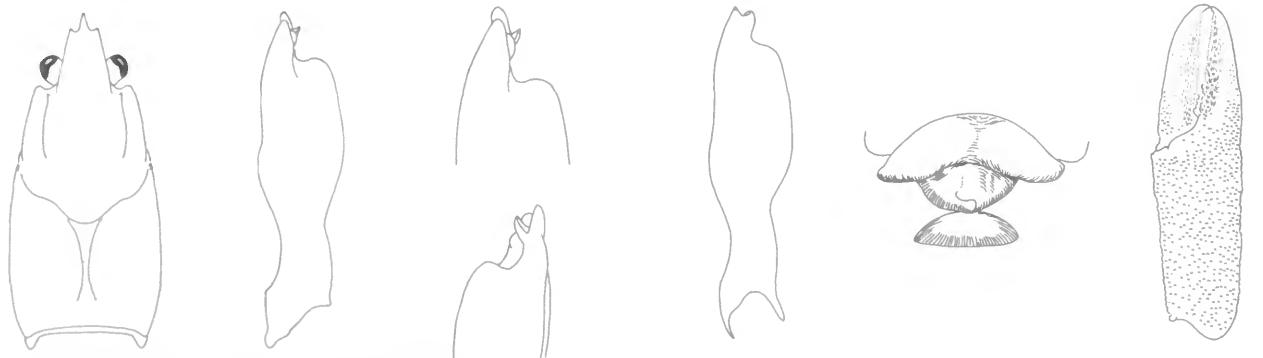
219. *Procambarus (Austrocambarus) miranda*



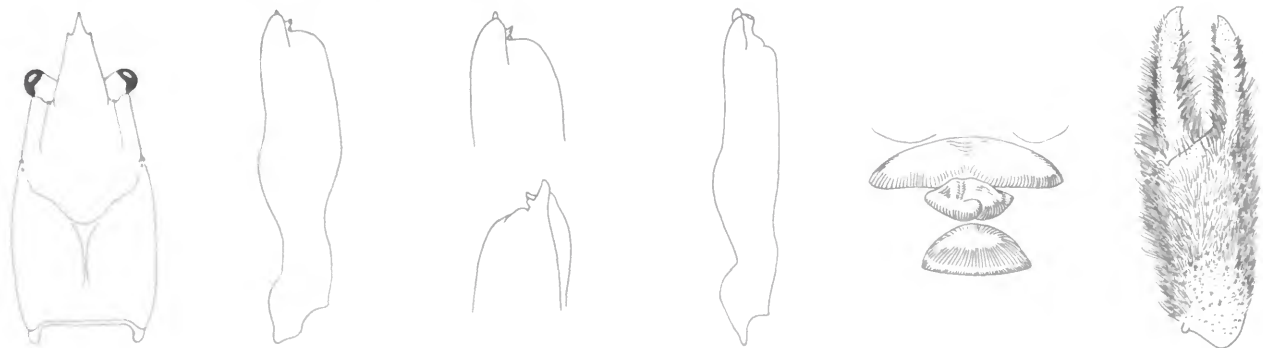
220. *Procamburus (Austrocambarus) ruthveni*



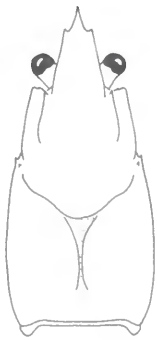
221. *Procamburus (Austrocambarus) zapoapensis*



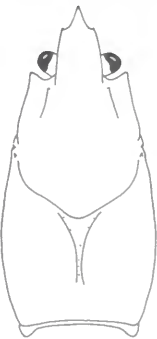
222. *Procamburus (Austrocambarus) williamsoni*



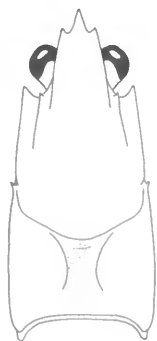
223. *Procamburus (Austrocambarus) acanthophorus*



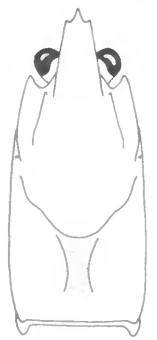
224. *Procambarus (Austrocambarus) llamasi*



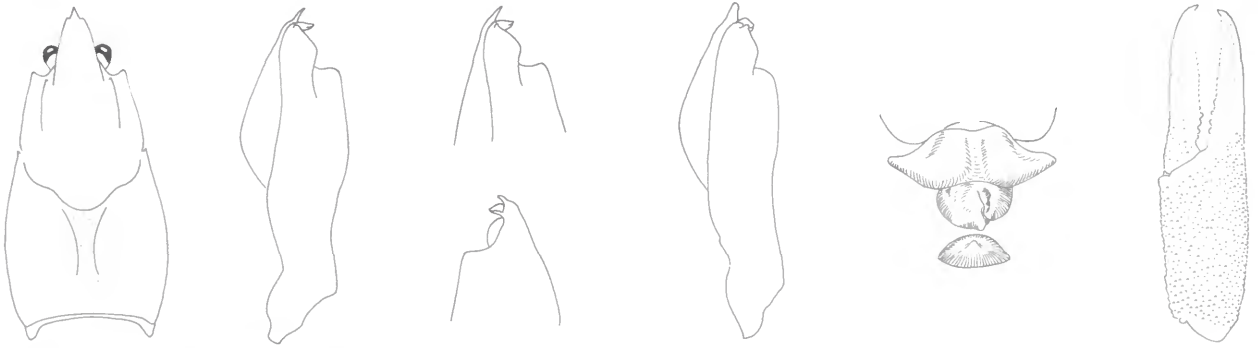
225. *Procambarus (Austrocambarus) pilosimanus*



226. *Procambarus (Austrocambarus) atkinsoni*



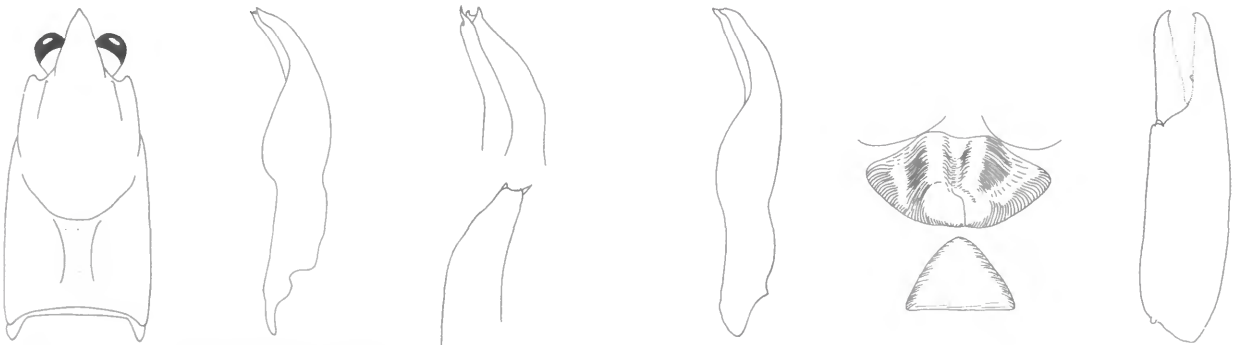
227. *Procambarus (Austrocambarus) cubensis rivalis*



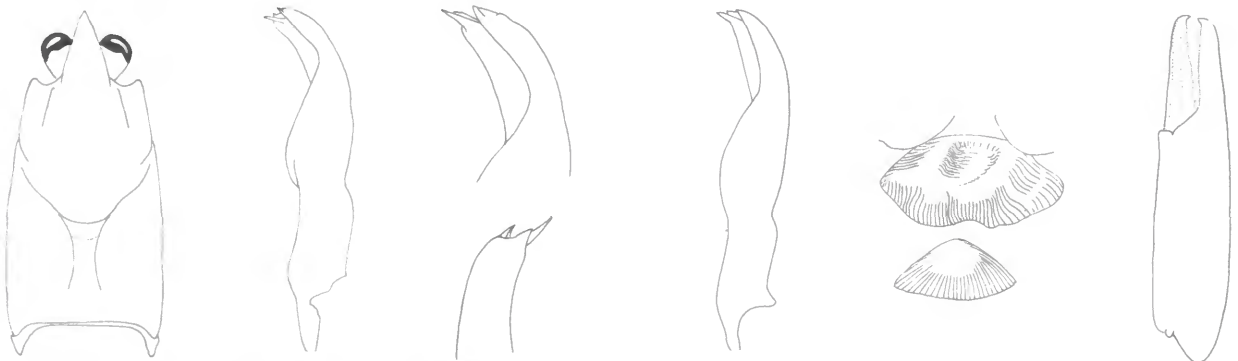
228. *Procambarus (Austrocambarus) cubensis cubensis*



229. *Procambarus (Austrocambarus) niveus*

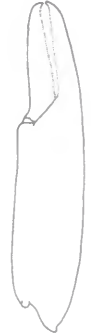
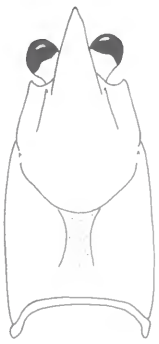


230. *Procambarus (Capillicambarus) hinei*



231. *Procambarus (Capillicambarus) brazoriensis*

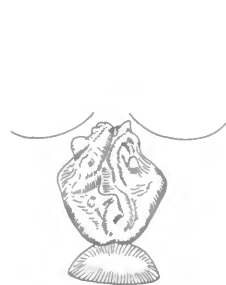




232. *Procamburus (Capillicambarus) incilis*



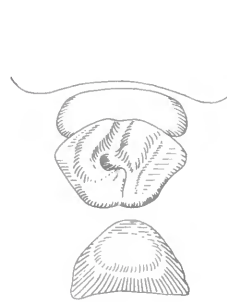
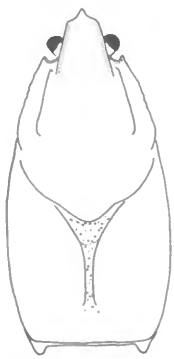
233. *Procamburus (Girardiella) tulanei*



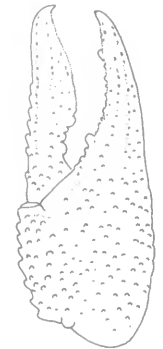
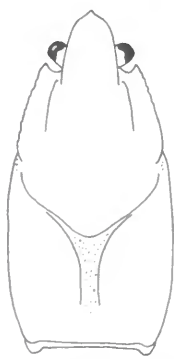
234. *Procamburus (Girardiella) simulans*



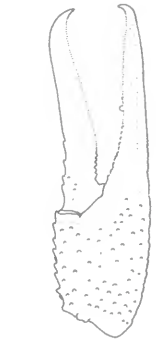
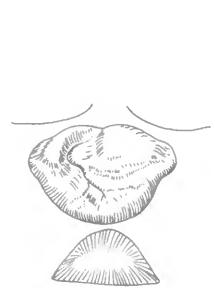
235. *Procamburus (Girardiella) curdi*



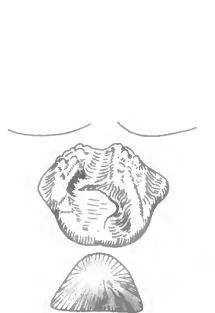
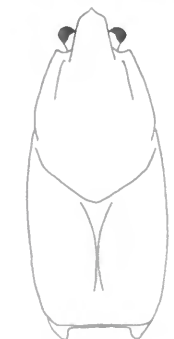
236. *Procambarus (Girardiella) reimeri*



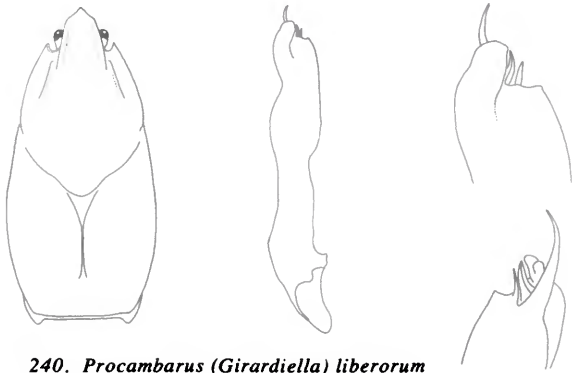
237. *Procambarus (Girardiella) parasimulans*



238. *Procambarus (Girardiella) regiomontanus*

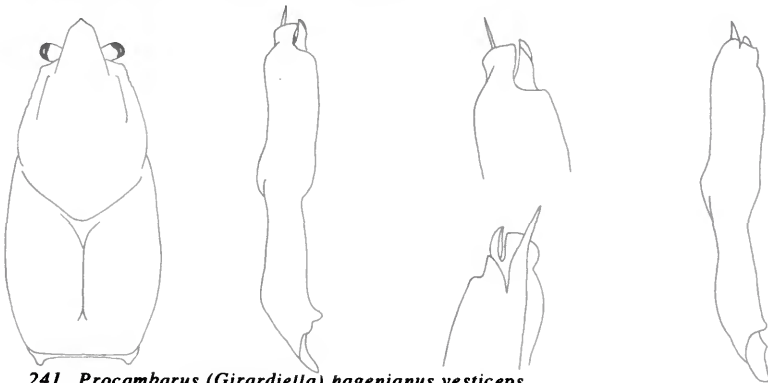
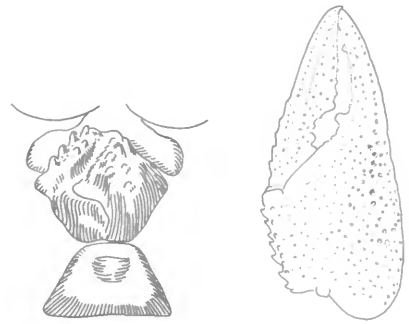


239. *Procambarus (Girardiella) gracilis*

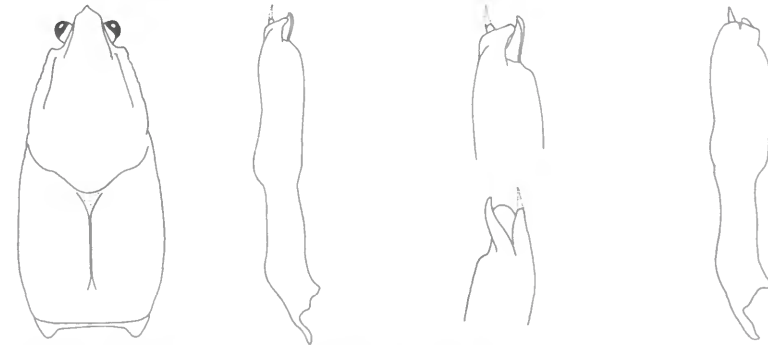


240. *Procambarus (Girardiella) liberorum*

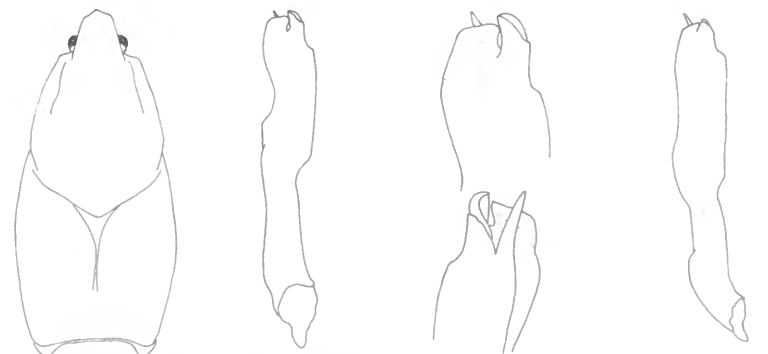
unknown



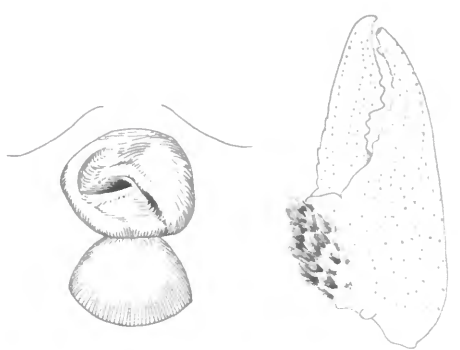
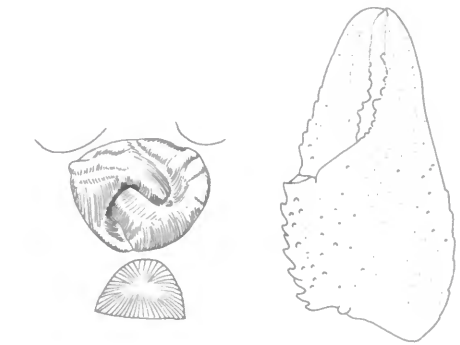
241. *Procambarus (Girardiella) hagenianus vesticeps*

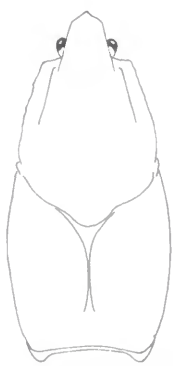


242. *Procambarus (Girardiella) hagenianus hagenianus*

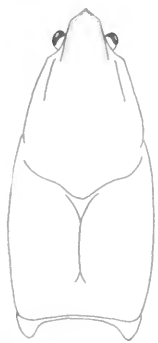


243. *Procambarus (Girardiella) connus*

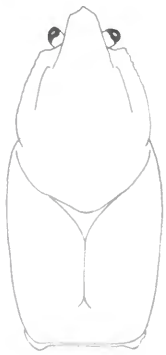




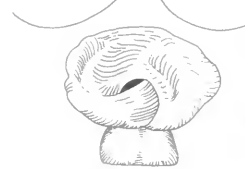
244. *Procambarus (Girardiella) cometes*



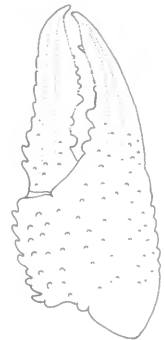
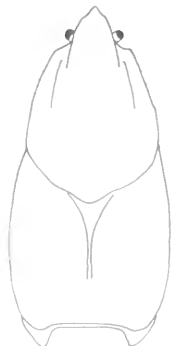
245. *Procambarus (Girardiella) pogum*



unknown

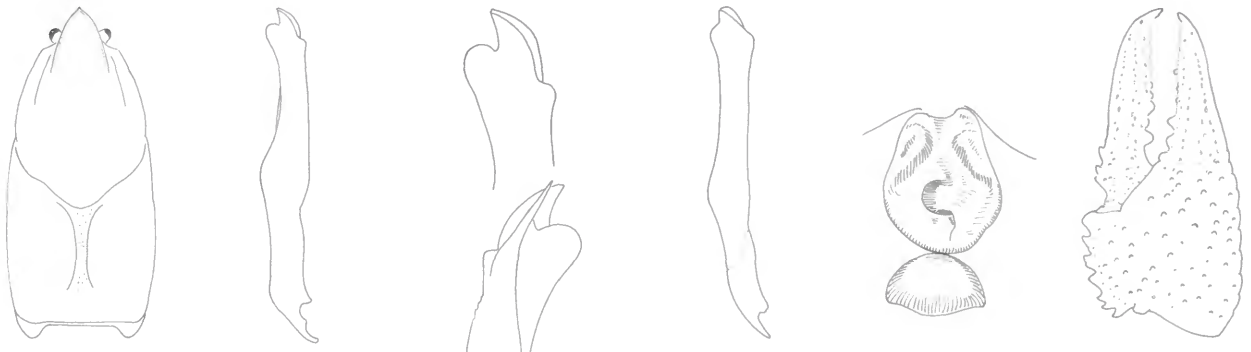


246. *Procambarus (Girardiella) barbiger*

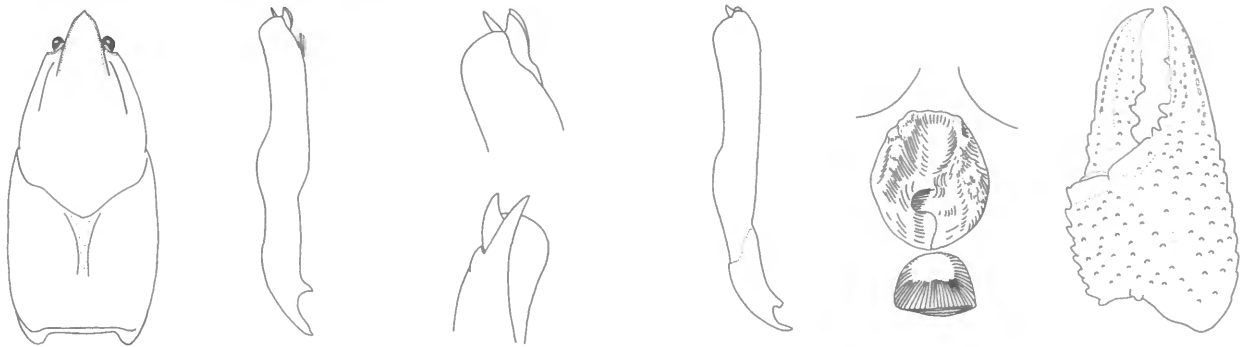


247. *Procambarus (Hagenides) advena*

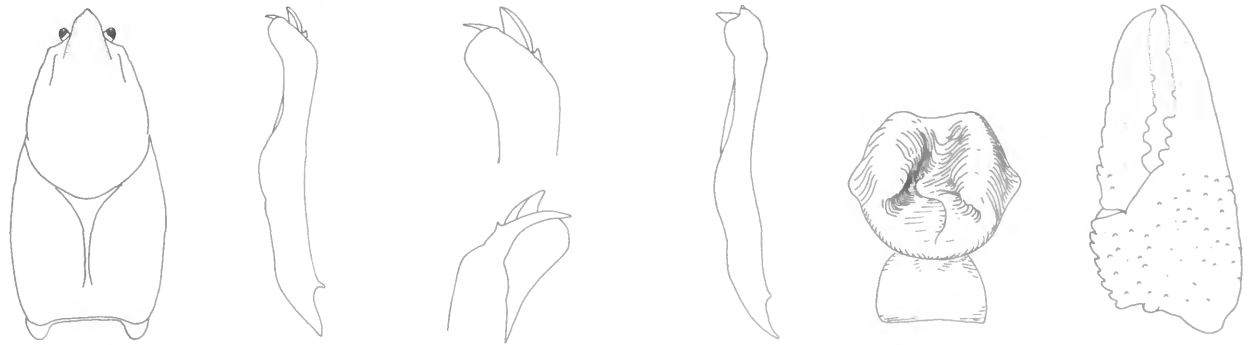




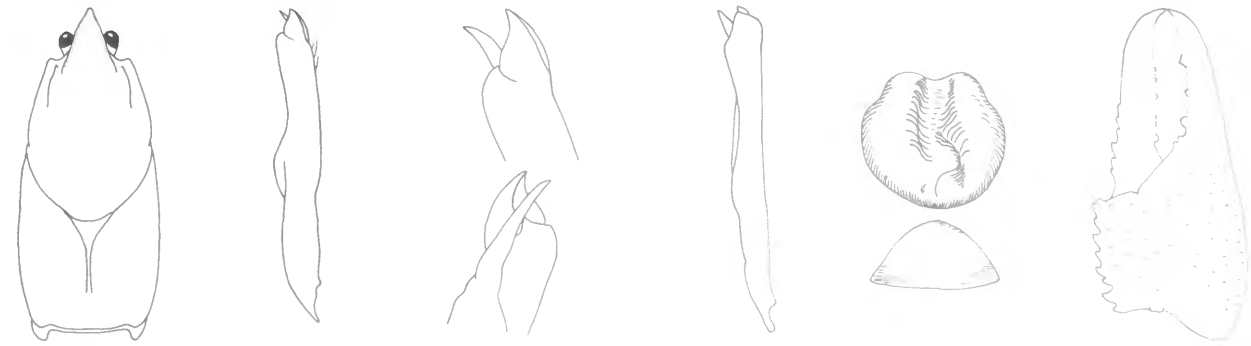
248. *Procambarus (Hagenides) talpoides*



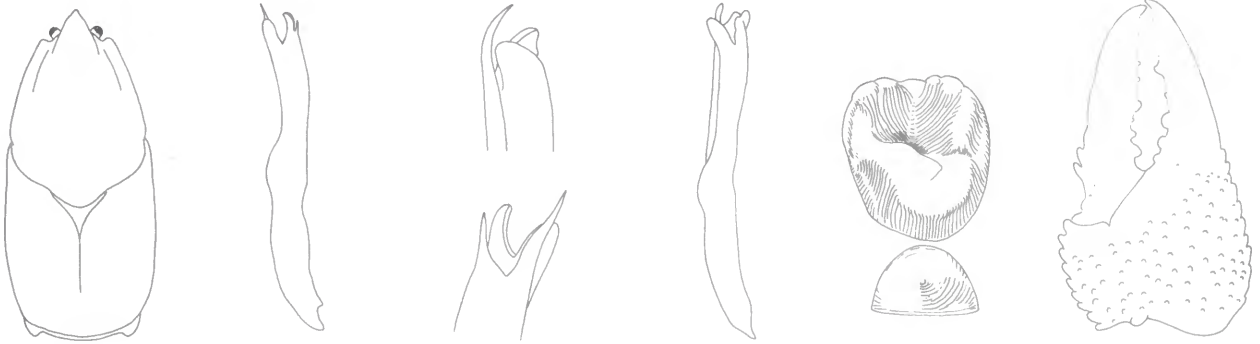
249. *Procambarus (Hagenides) caritus*



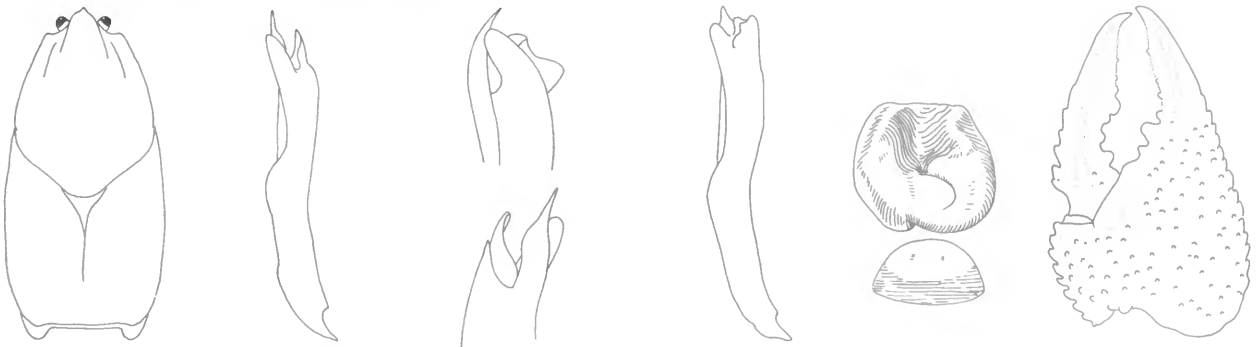
250. *Procambarus (Hagenides) geodytes*



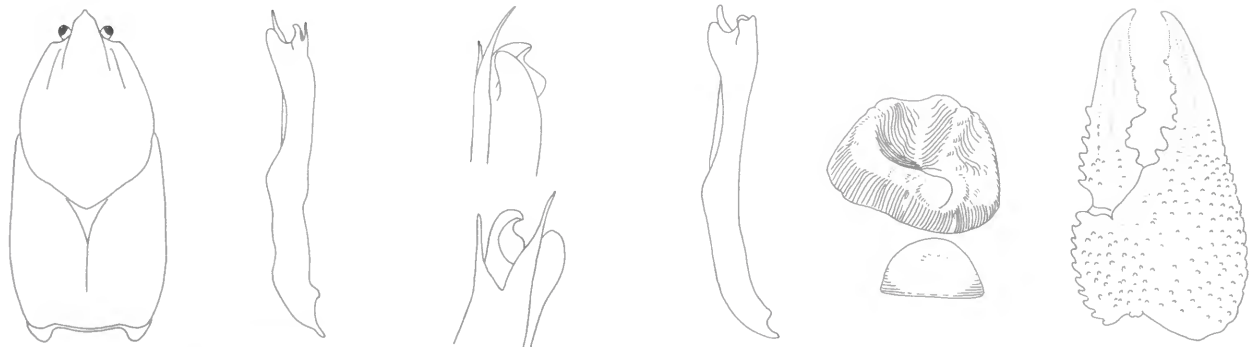
251. *Procambarus (Hagenides) pygmaeus*



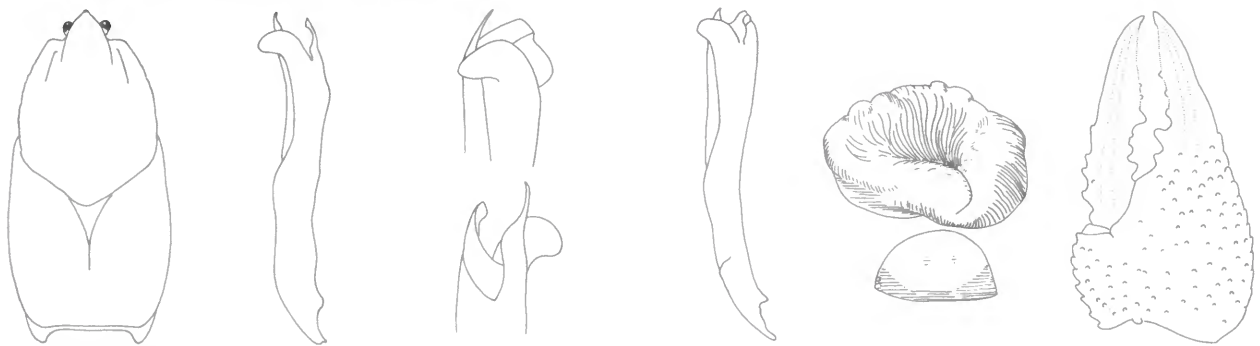
252. *Procambarus (Hagenides) rogersi ochlocknensis*



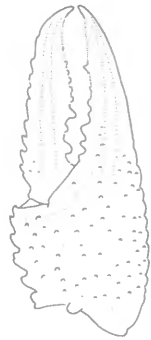
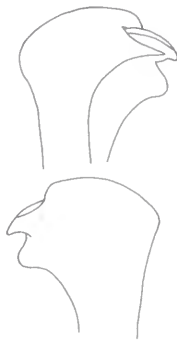
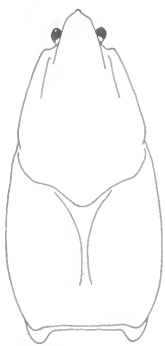
253. *Procambarus (Hagenides) rogersi campestris*



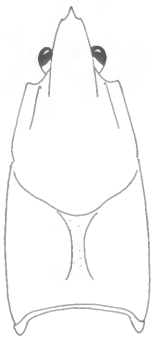
254. *Procambarus (Hagenides) rogersi expletus*



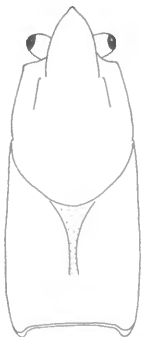
255. *Procambarus (Hagenides) rogersi rogersi*



256. *Procambarus (Hagenides) truculentus*



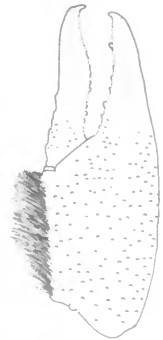
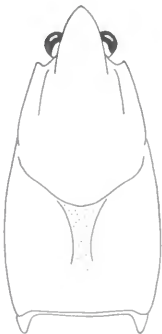
257. *Procambarus (Leconticambarus) alleni*



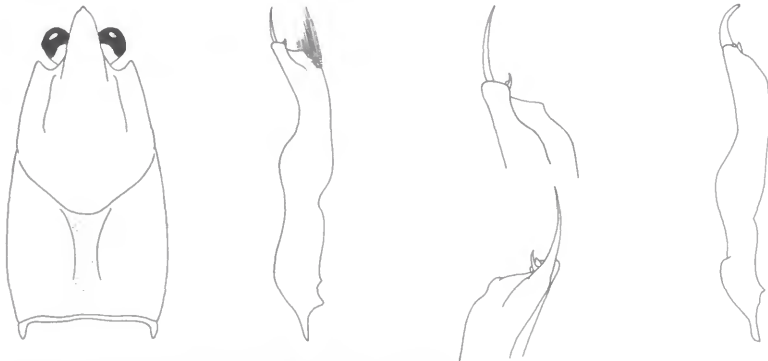
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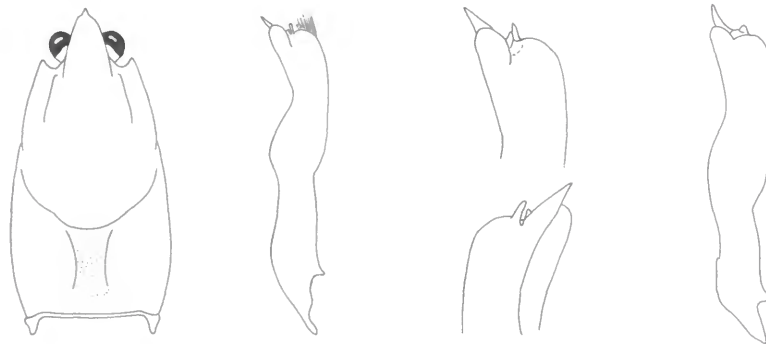
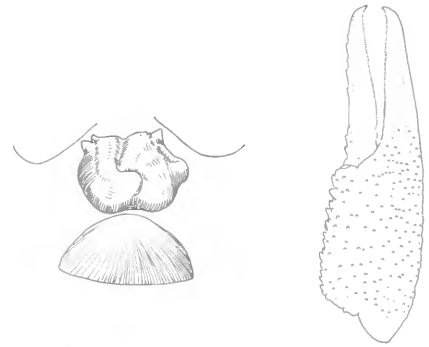
258. *Procambarus (Leconticambarus) milleri*



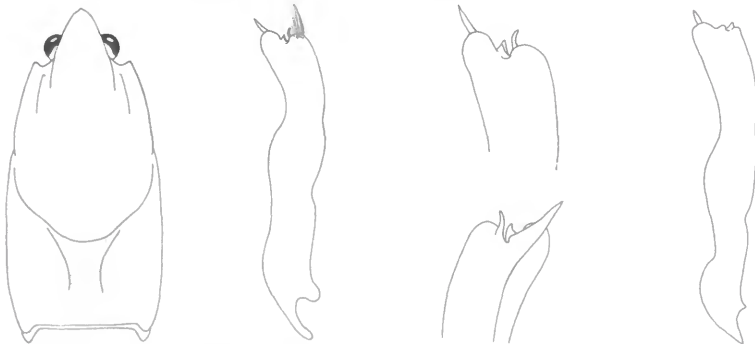
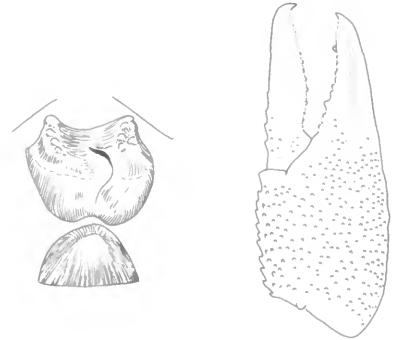
259. *Procambarus (Leconticambarus) barbatus*



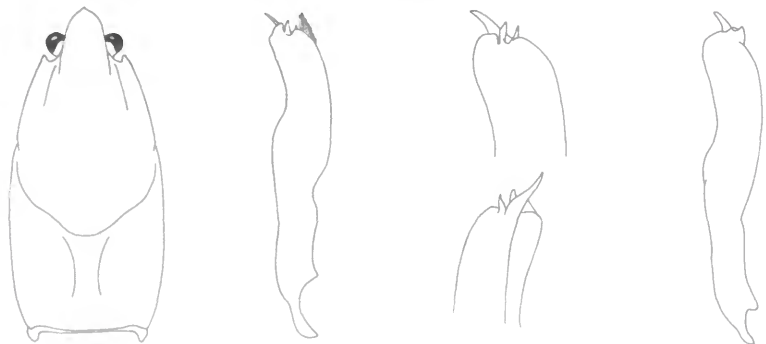
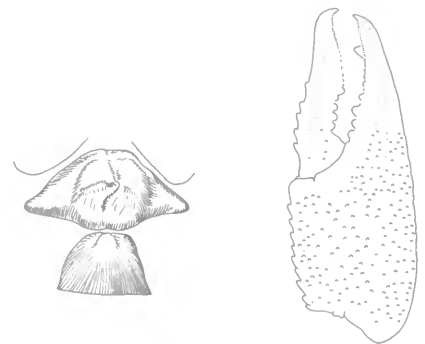
260. *Procambarus (Leonticambarus) latipleurum*



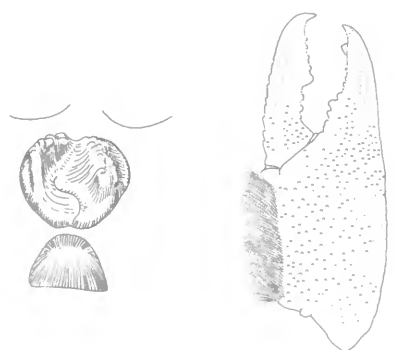
261. *Procambarus (Leonticambarus) apalachicola*



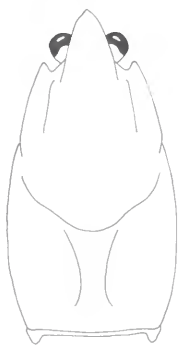
262. *Procambarus (Leonticambarus) econfinae*



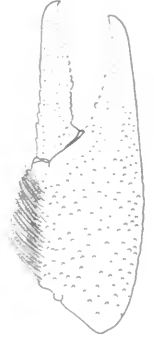
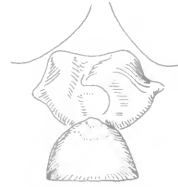
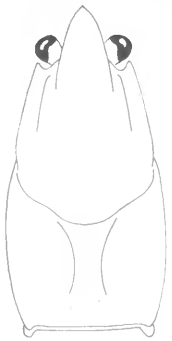
263. *Procambarus (Leonticambarus) escambiensis*



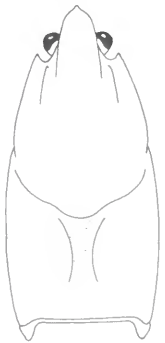




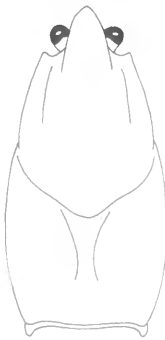
264. *Procambarus (Leonticambarus) pubischelae pubischelae*



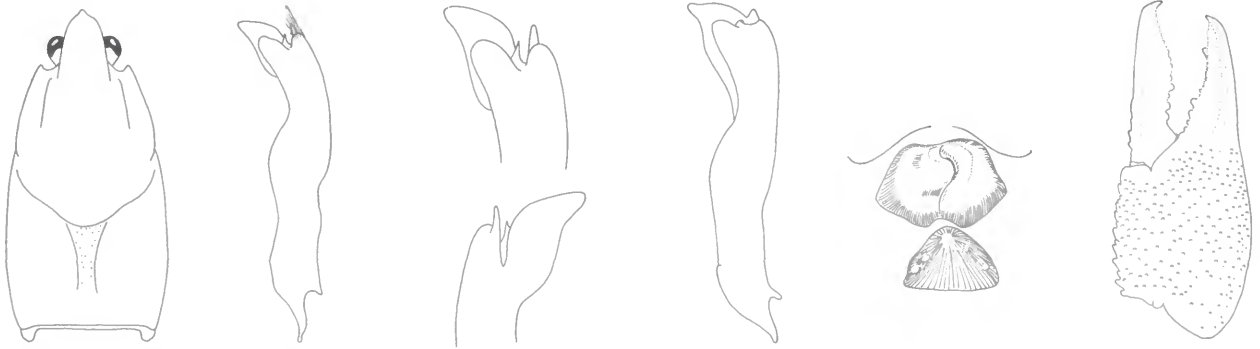
265. *Procambarus (Leonticambarus) pubischelae deficiens*



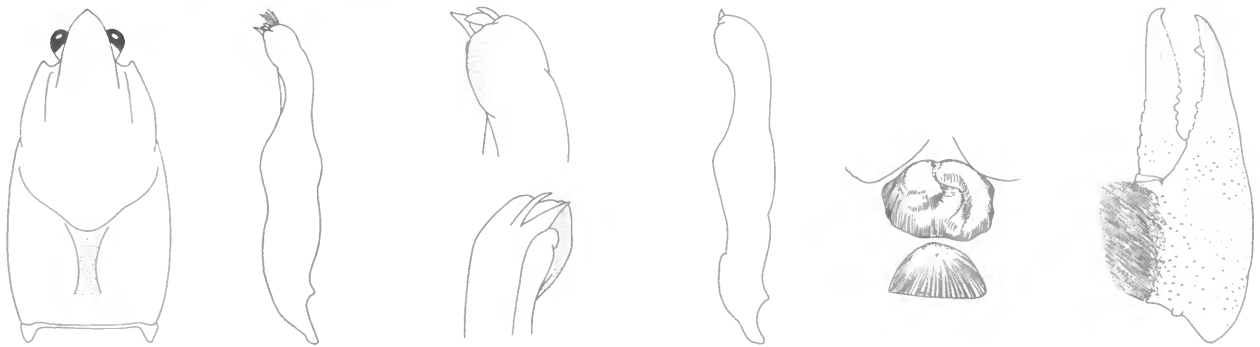
266. *Procambarus (Leonticambarus) rathbunae*



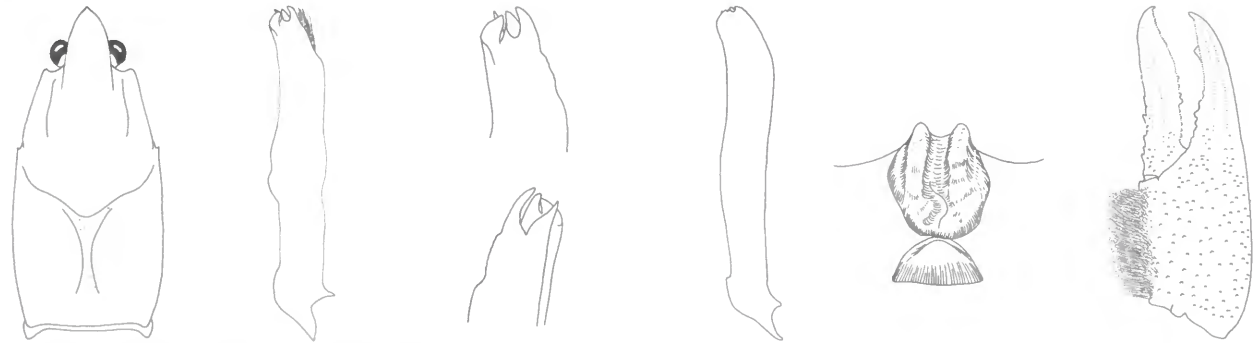
267. *Procambarus (Leonticambarus) capillatus*



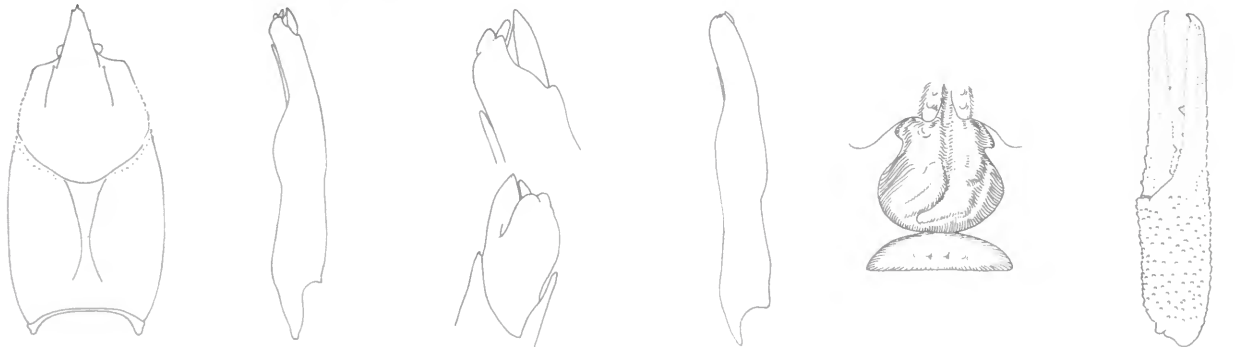
268. *Procambarus (Leonticambarus) kilbyi*



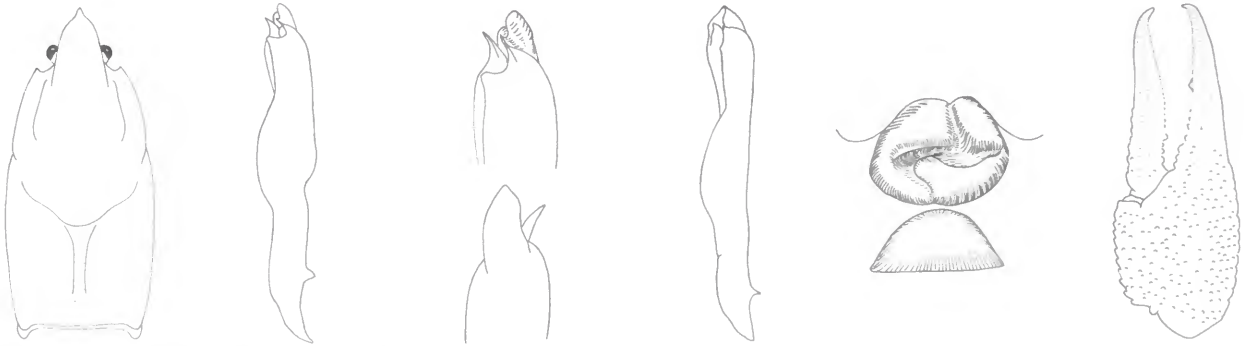
269. *Procambarus (Leonticambarus) hubbelli*



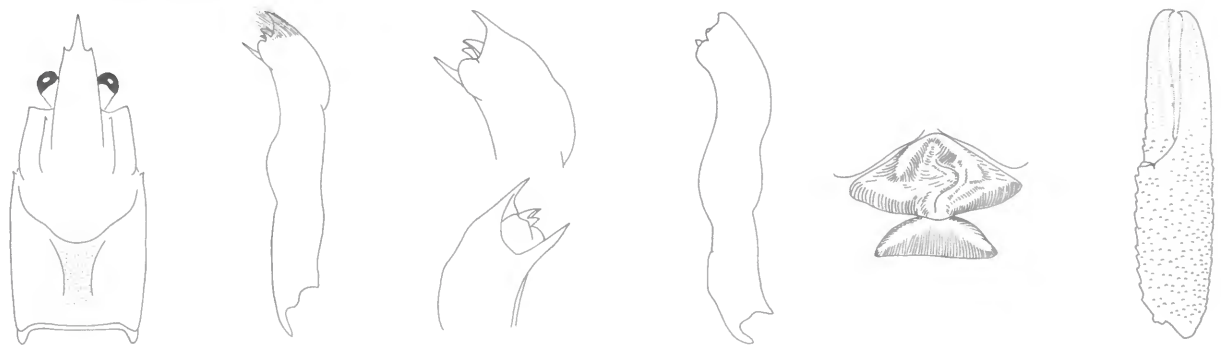
270. *Procambarus (Leonticambarus) shermani*



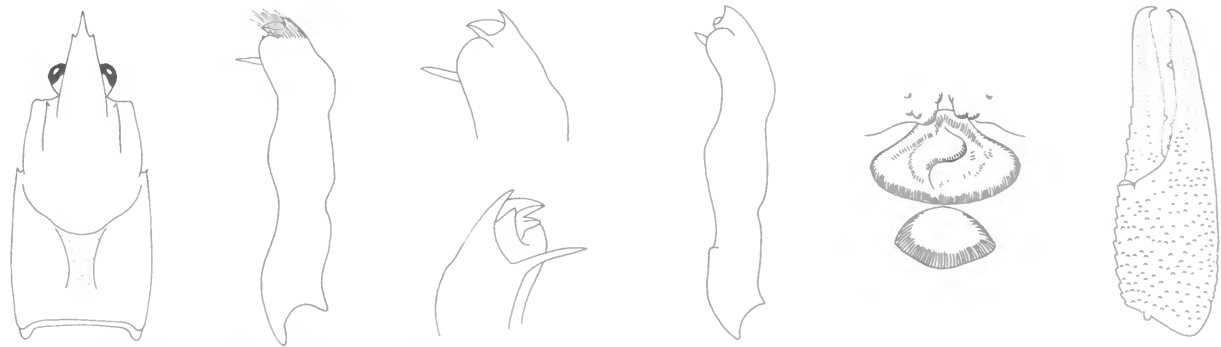
271. *Procambarus (Lonnerbergius) acherontis*



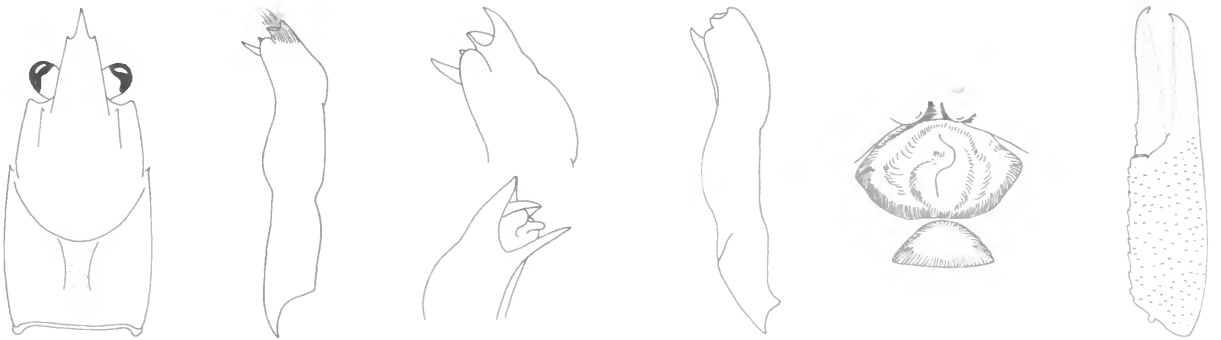
272. *Procambarus (Mexicambarus) bouvieri*



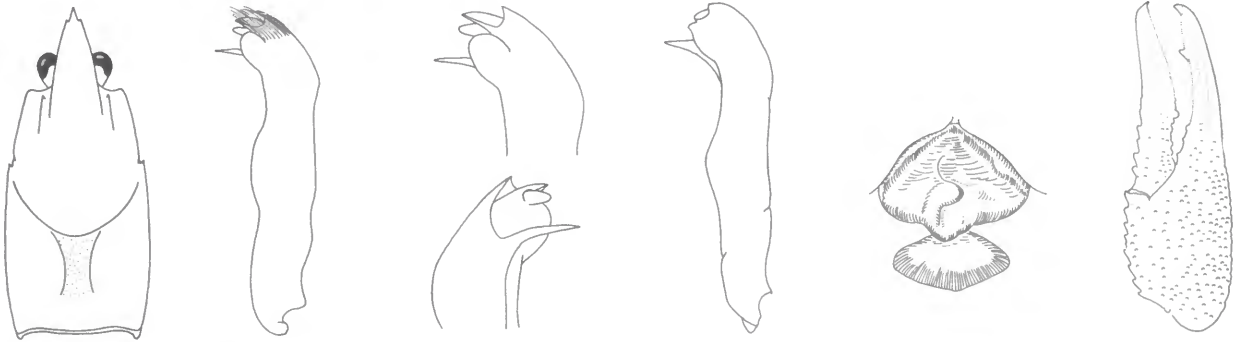
273. *Procambarus (Ortmannicus) pictus*



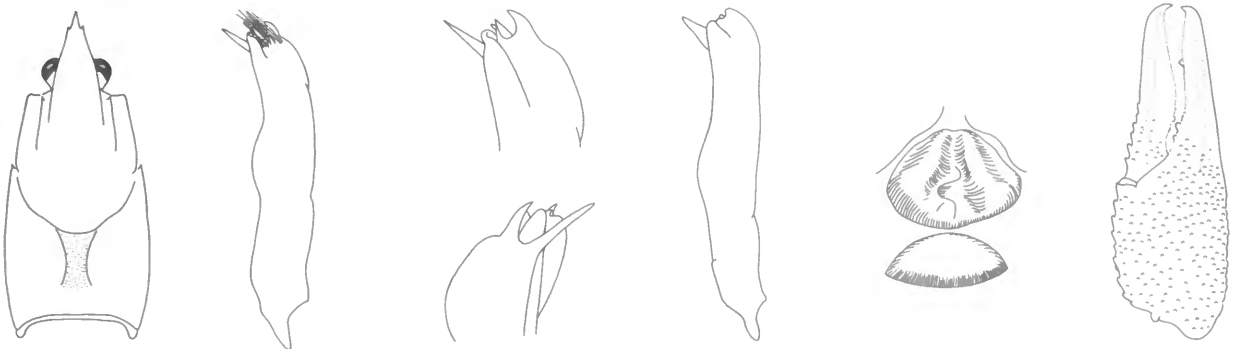
274. *Procambarus (Ortmannicus) enoplosternum*



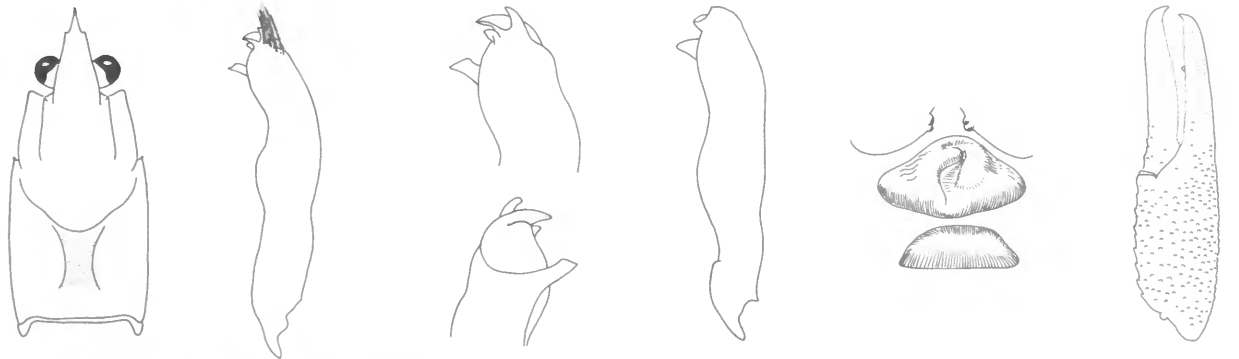
275. *Procambarus (Ortmannicus) chacei*



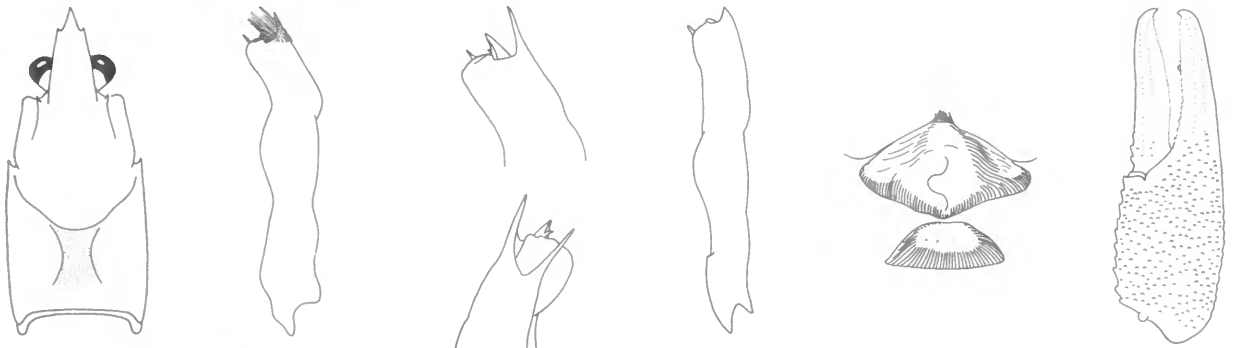
276. *Procamburus (Ortmannicus) epicyrtus*



277. *Procamburus (Ortmannicus) litosternum*

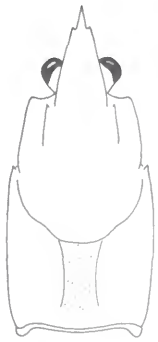


278. *Procamburus (Ortmannicus) lepidodactylus*

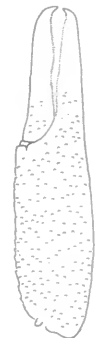
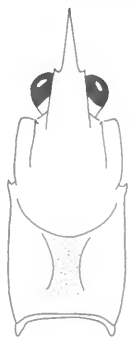


279. *Procamburus (Ortmannicus) pubescens*

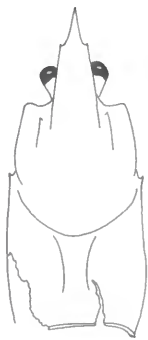




280. *Procambarus (Ortmannicus) hirsutus*



281. *Procambarus (Ortmannicus) youngi*

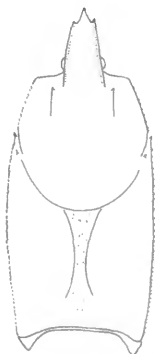


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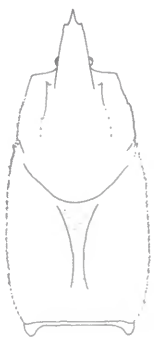
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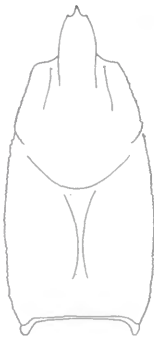
282. *Procambarus (Ortmannicus) angustatus*



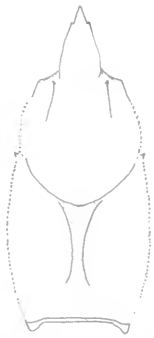
283. *Procambarus (Ortmannicus) leitheuseri*



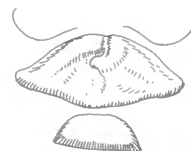
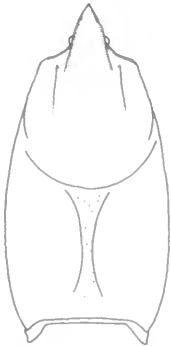
284. *Procambarus (Ormannicus) lucifugusalachua*



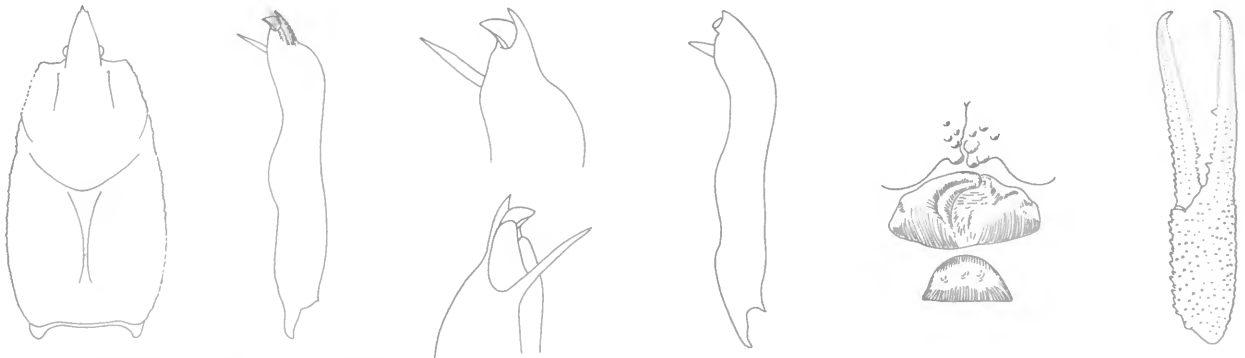
285. *Procambarus (Ormannicus) lucifuguslucifugus*



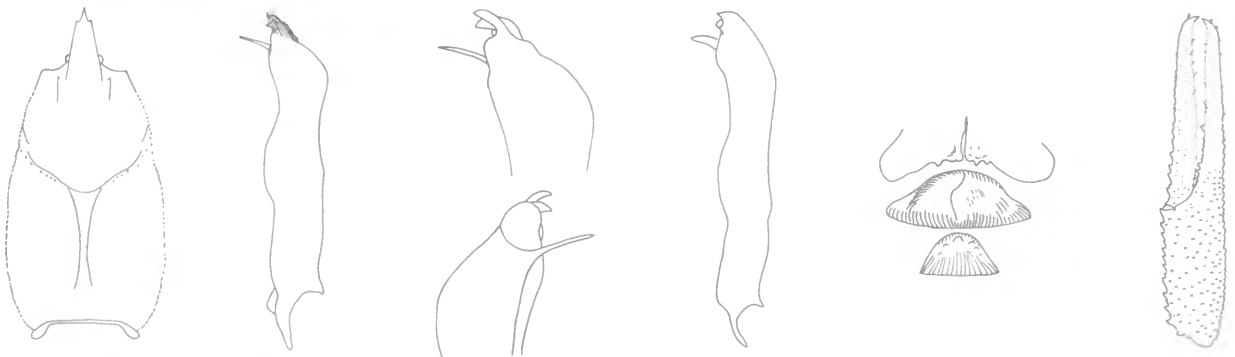
286. *Procambarus (Ormannicus) erythropros*



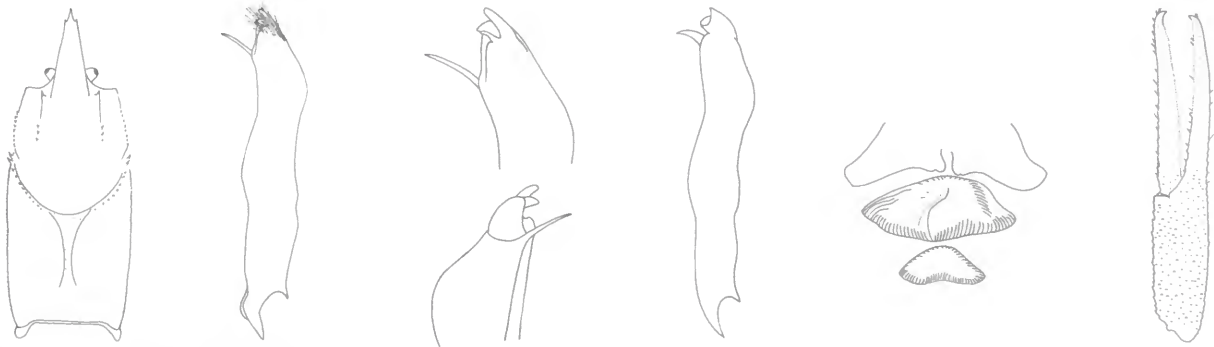
287. *Procambarus (Ormannicus) franzi*



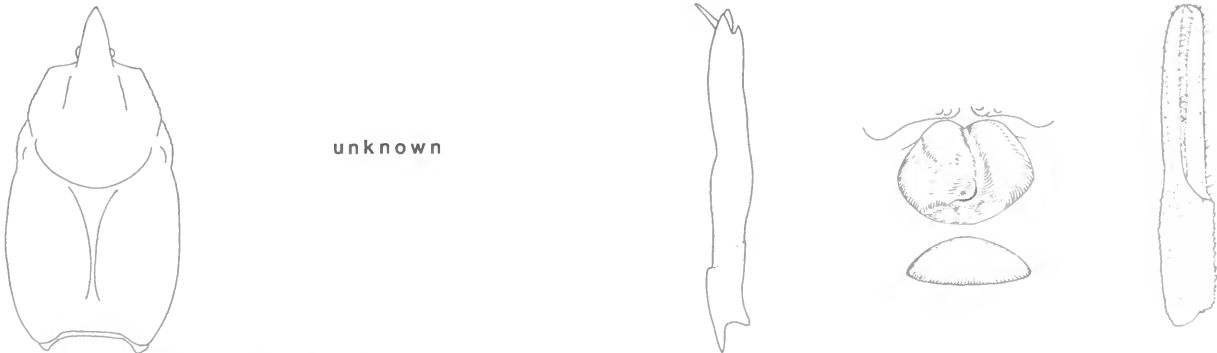
288. *Procambarus (Ortmannicus) pallidus*



289. *Procambarus (Ortmannicus) horsti*

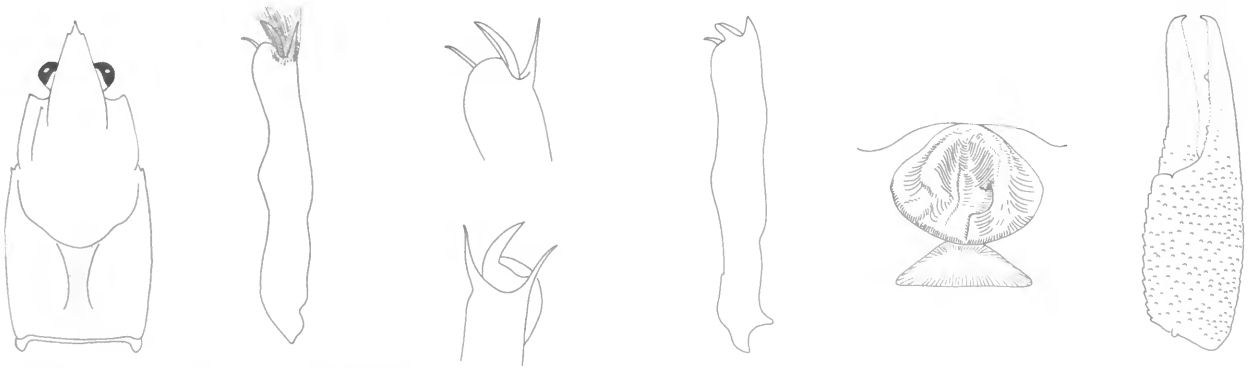


290. *Procambarus (Ortmannicus) orcinus*

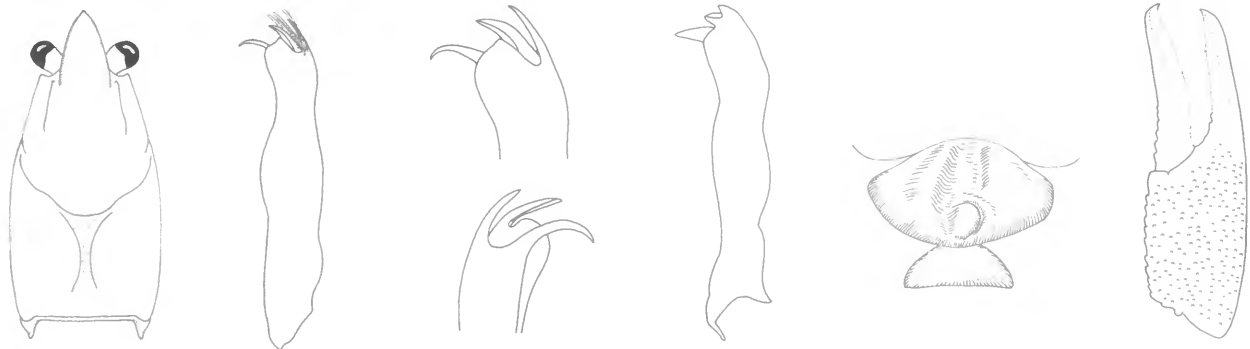


291. *Procambarus (Ortmannicus) delicatus*

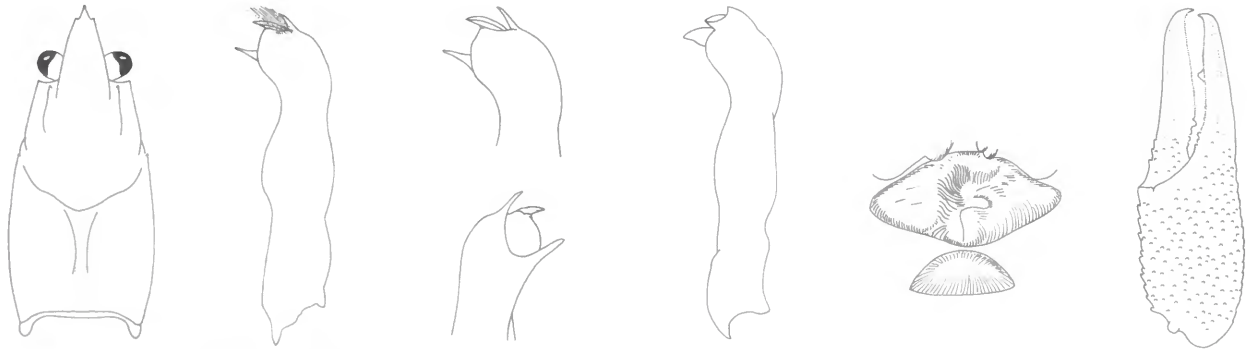
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292. *Procambarus (Ortmannicus) seminolae*



293. *Procambarus (Ortmannicus) ancylus*



294. *Procambarus (Ortmannicus) lunzi*



295. *Procambarus (Ortmannicus) fallax*

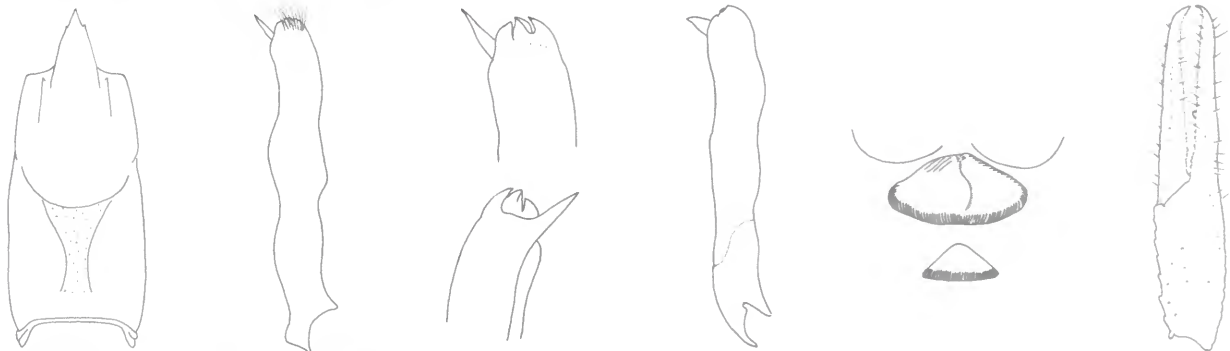




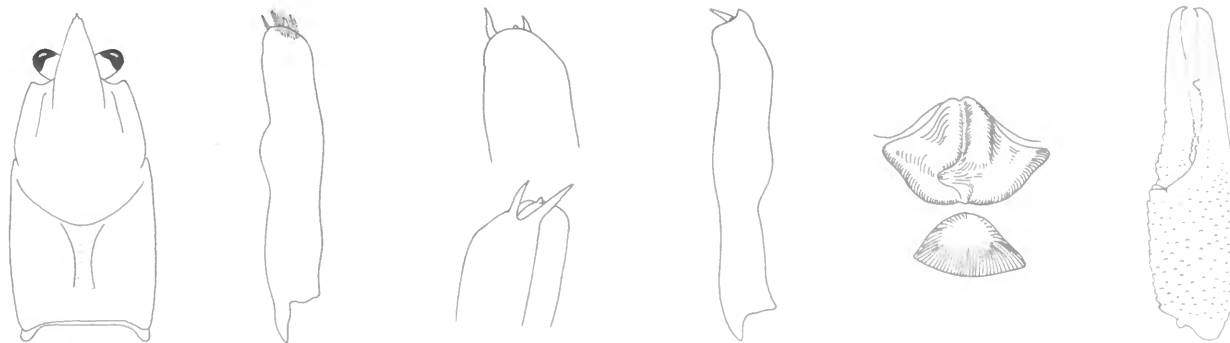
296. *Procamburus (Ortmannicus) leonensis*



297. *Procamburus (Ortmannicus) evermanni*



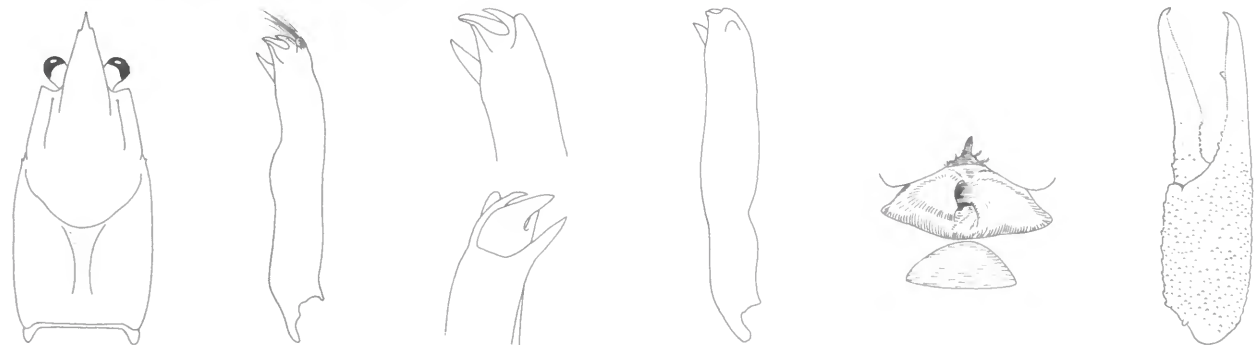
298. *Procamburus (Ortmannicus) xilitlae*



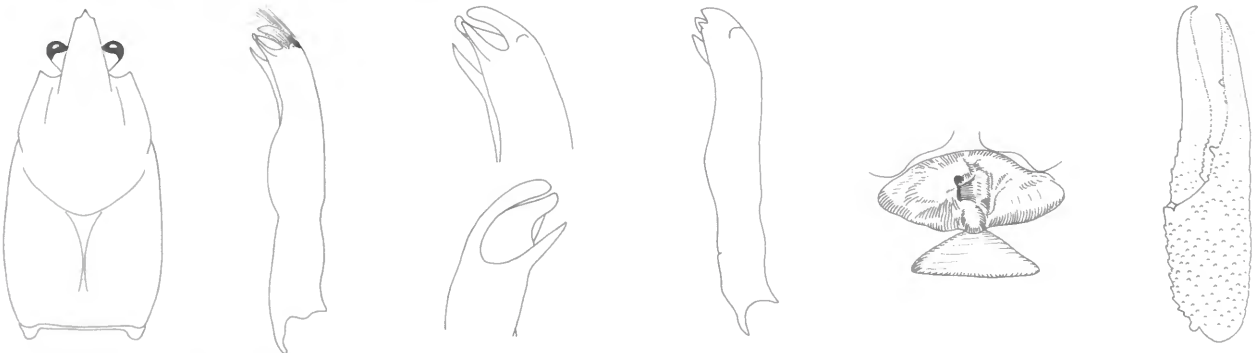
299. *Procamburus (Ortmannicus) pycnogonopus*



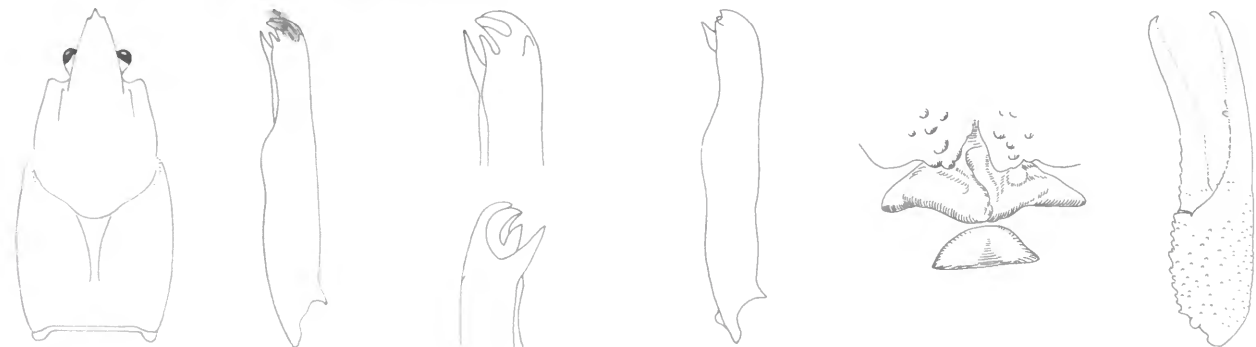
300. *Procamburus (Ortmannicus) blandingii*



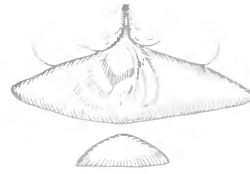
301. *Procamburus (Ortmannicus) acutus acutus*



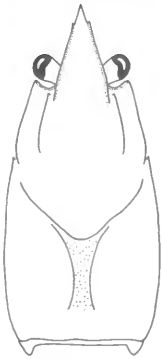
302. *Procamburus (Ortmannicus) acutus cuevachicae*



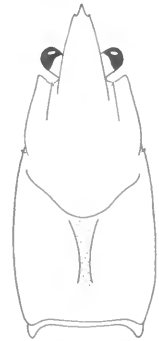
303. *Procamburus (Ortmannicus) texanus*



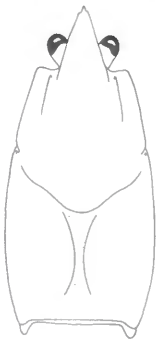
304. *Procambarus (Ortmannicus) lecontei*



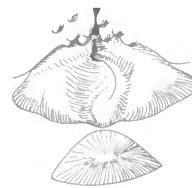
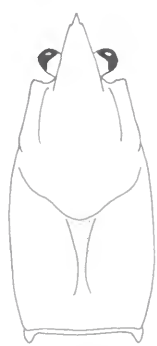
305. *Procambarus (Ortmannicus) geminus*



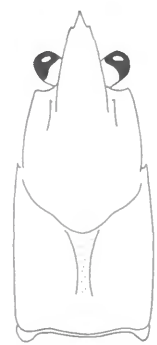
306. *Procambarus (Ortmannicus) hayi*



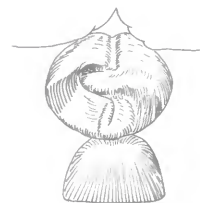
307. *Procambarus (Ortmannicus) lophotus*



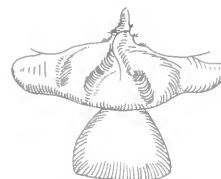
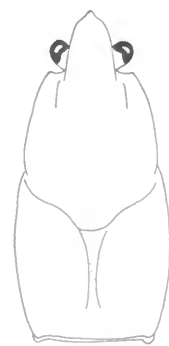
308. *Procambarus (Ortmannicus) acutissimus*



309. *Procambarus (Ortmannicus) verrucosus*

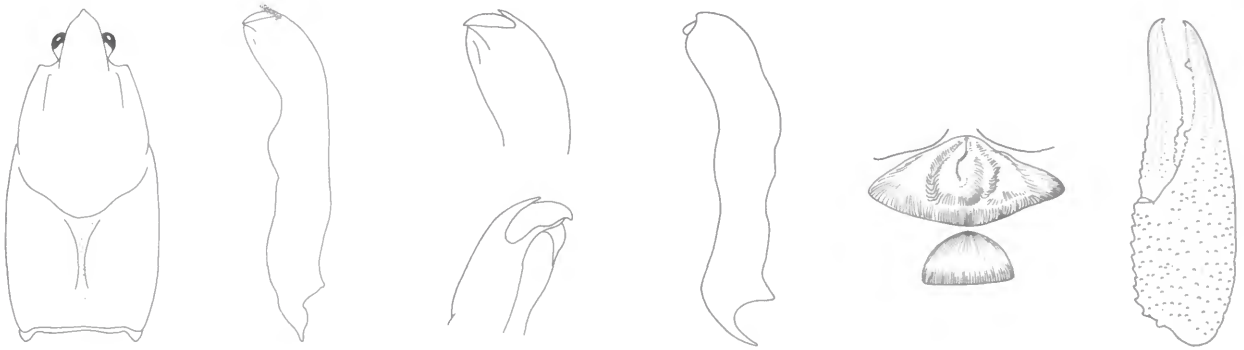


310. *Procambarus (Ortmannicus) jaculus*

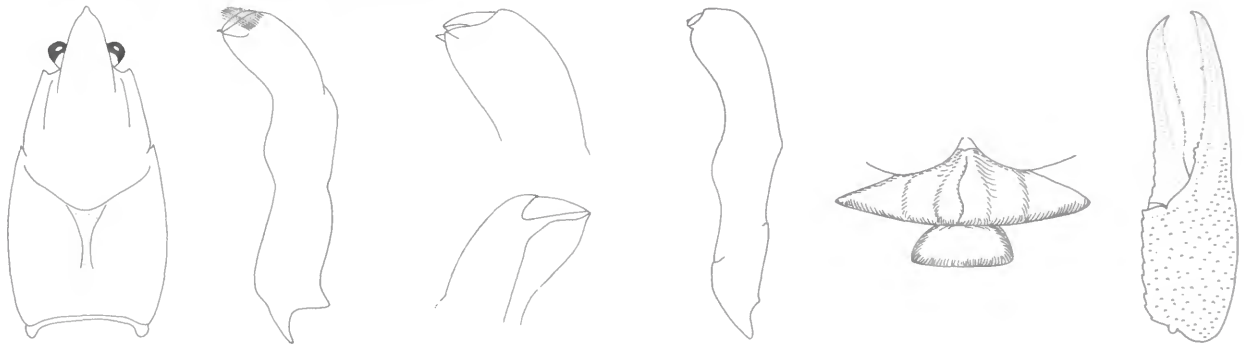


311. *Procambarus (Ortmannicus) hybus*





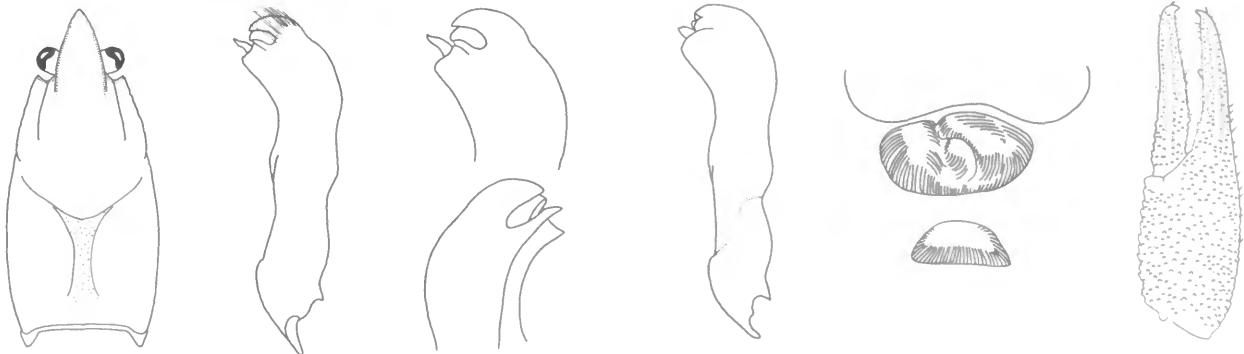
312. *Procambarus (Ortmannicus) planirostris*



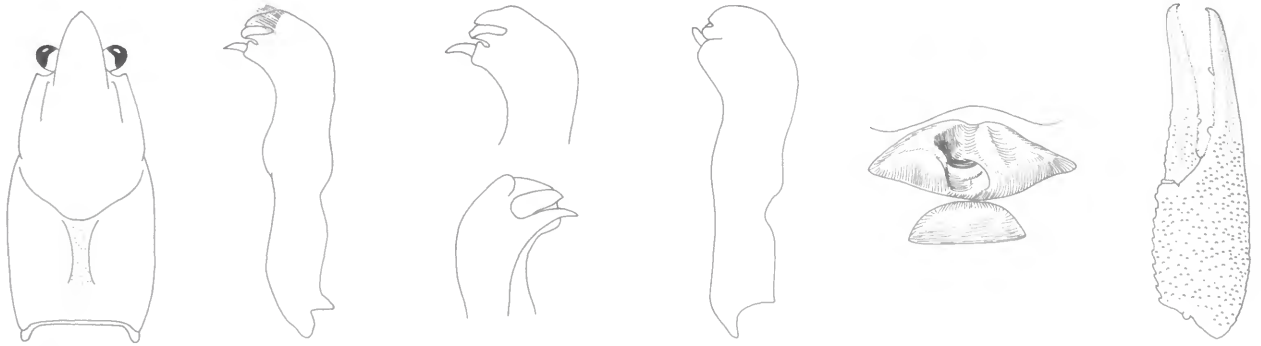
313. *Procambarus (Ortmannicus) mancus*



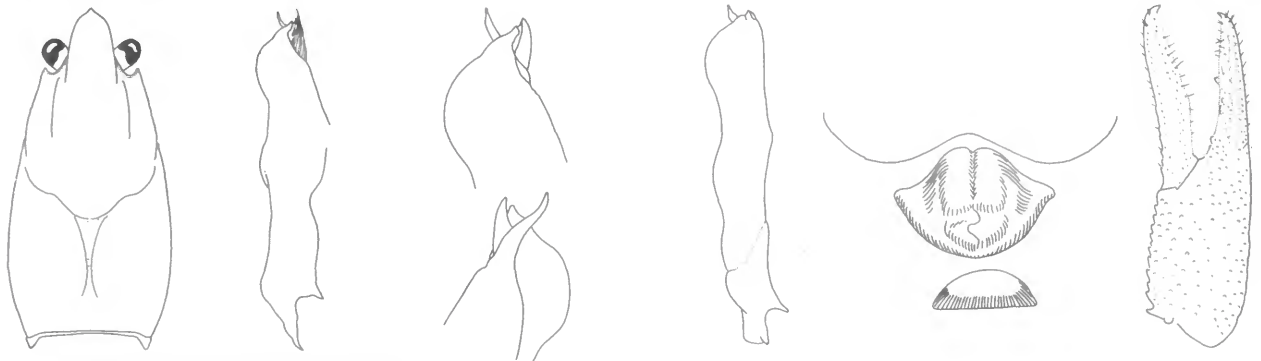
314. *Procambarus (Ortmannicus) plumimanus*



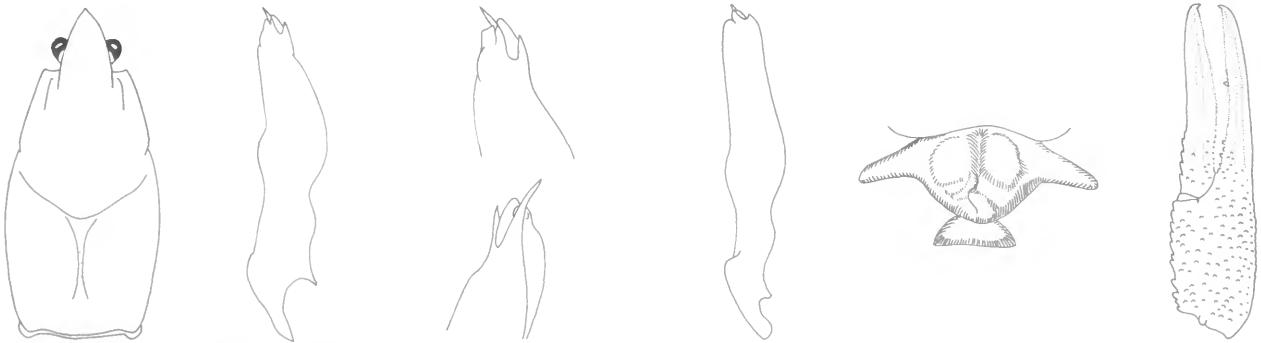
315. *Procambarus (Ortmannicus) medialis*



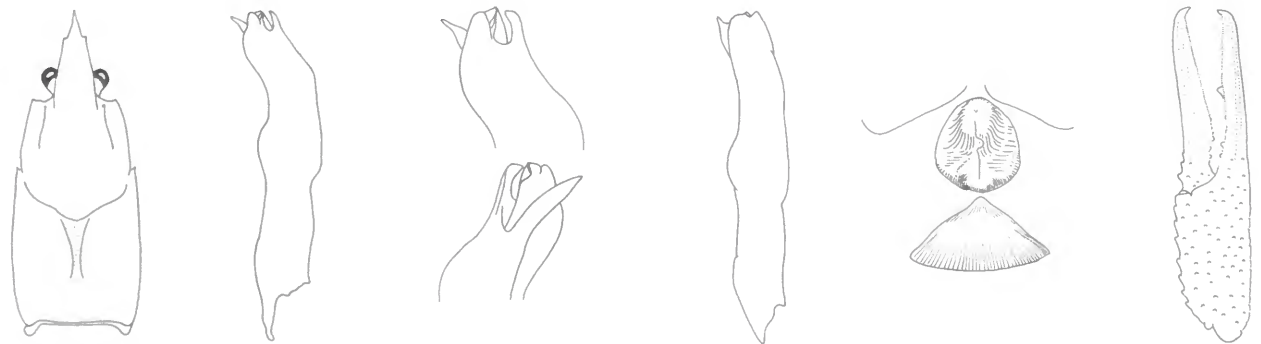
316. *Procambarus (Ortmannicus) pearsei*



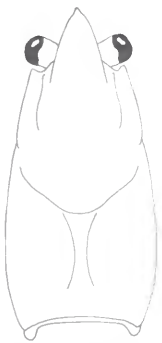
317. *Procambarus (Ortmannicus) marthae*



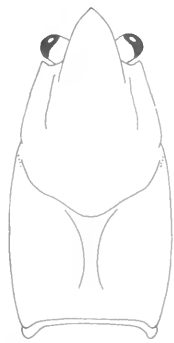
318. *Procambarus (Ortmannicus) lewisi*



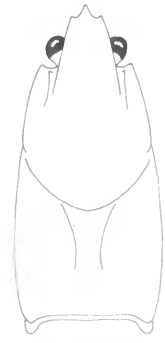
319. *Procambarus (Ortmannicus) bivittatus*



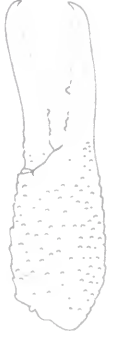
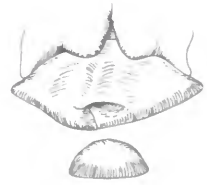
320. *Procambarus (Ortmannicus) viaeviridis*



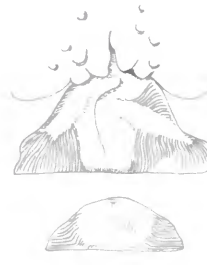
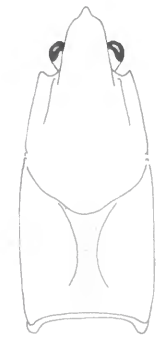
321. *Procambarus (Ortmannicus) caballeroi*



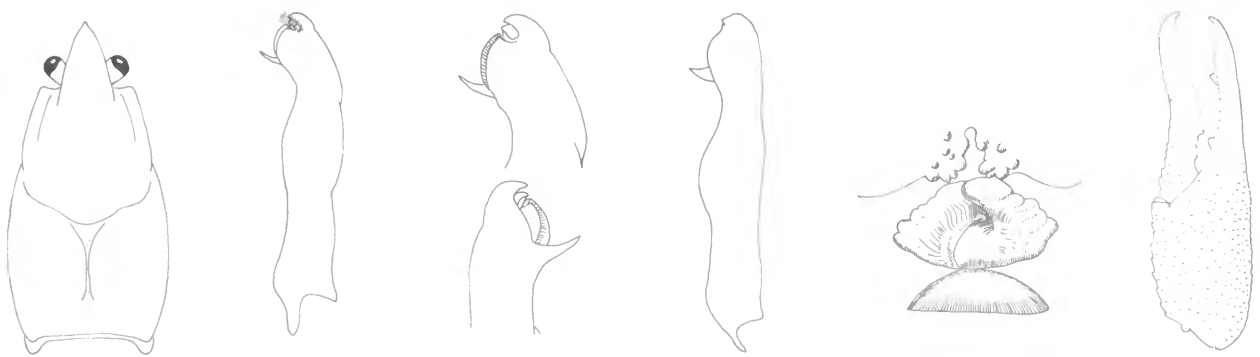
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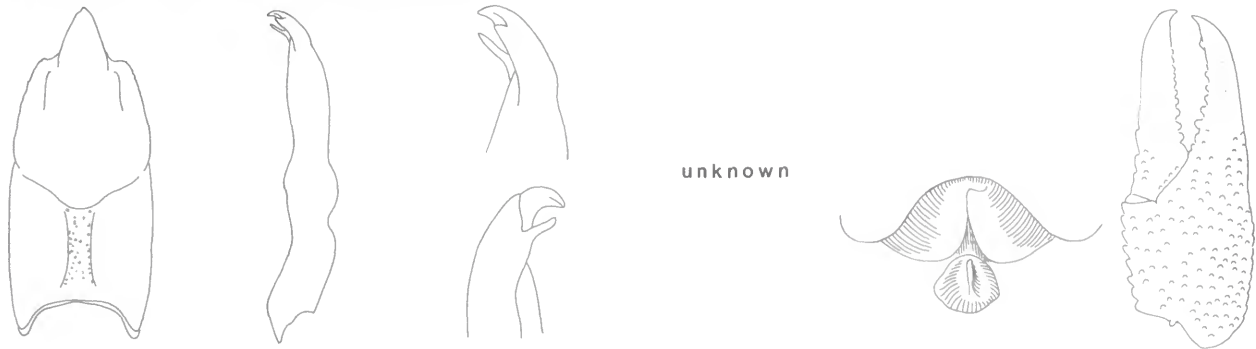
322. *Procambarus (Ortmannicus) villalobosi*



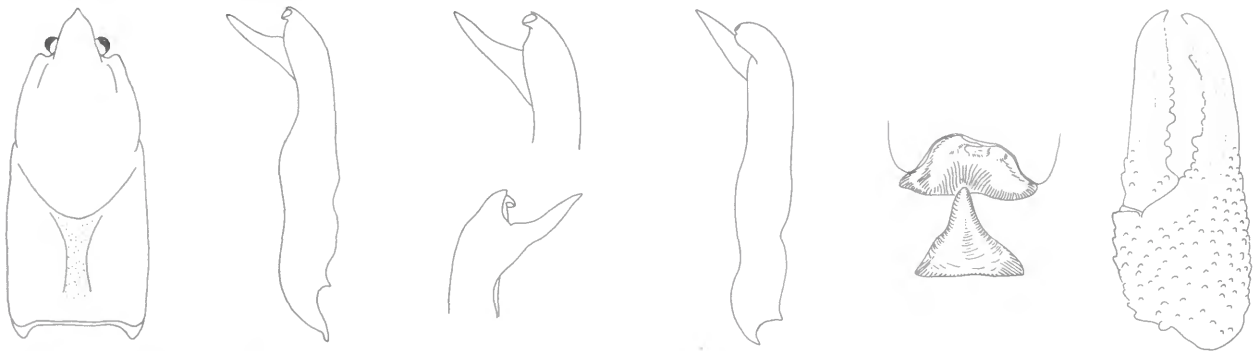
323. *Procambarus (Ortmannicus) tolteca*



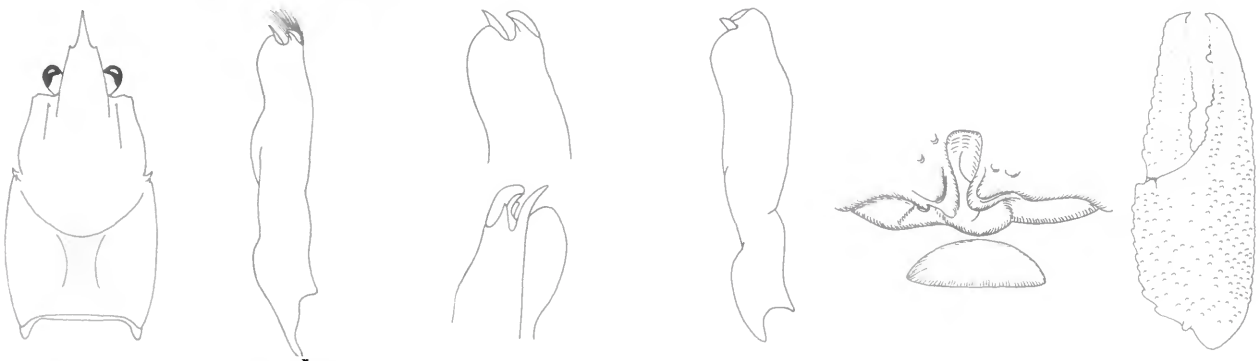
324. *Procamburus (Ortmannicus) gonopodocristatus*



325. *Procamburus (Paracamburus) ortmannii*

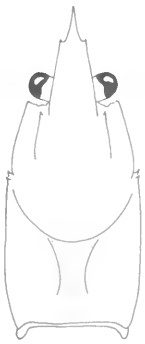


326. *Procamburus (Paracamburus) paradoxus*

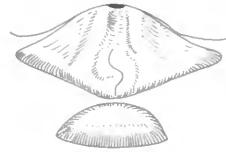


327. *Procamburus (Pennides) suttkusi*

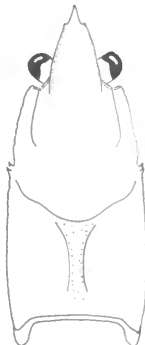




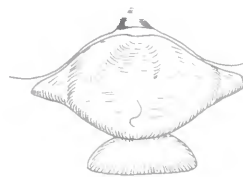
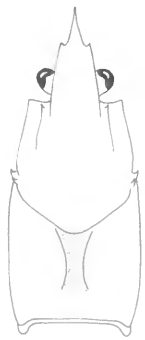
328. *Procambarus (Pennides) natchitochae*



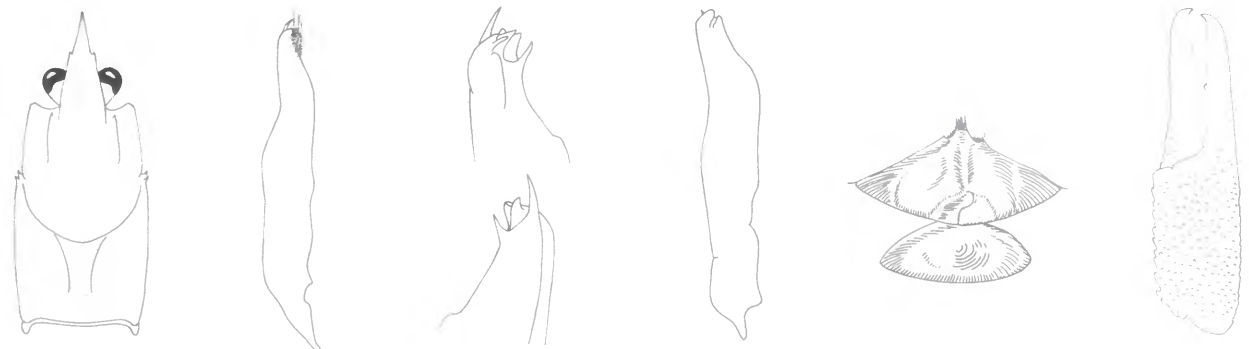
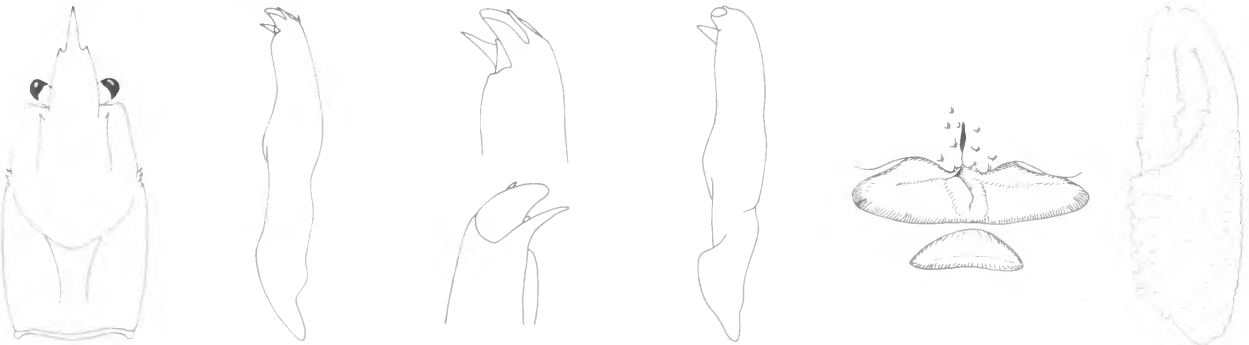
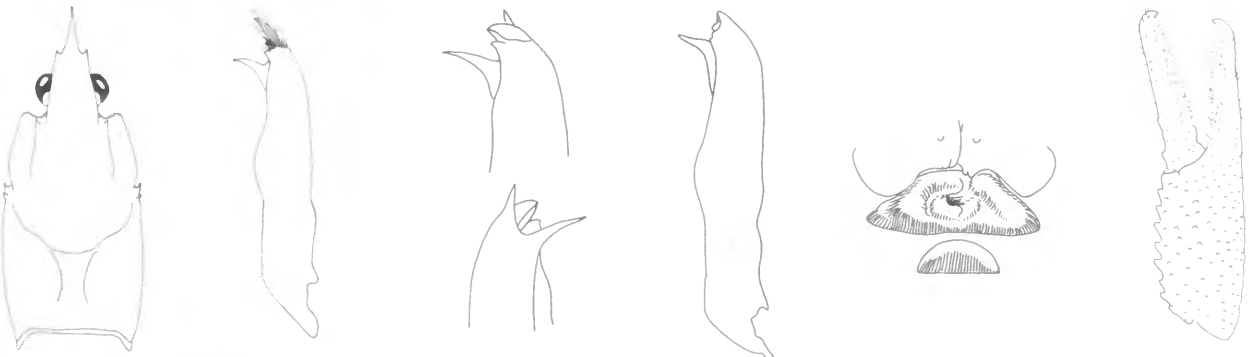
329. *Procambarus (Pennides) ablusus*

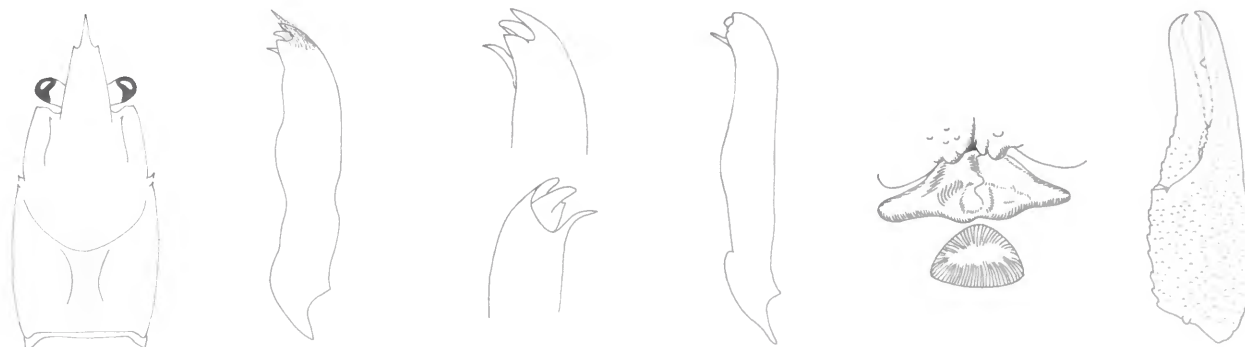


330. *Procambarus (Pennides) roberti*

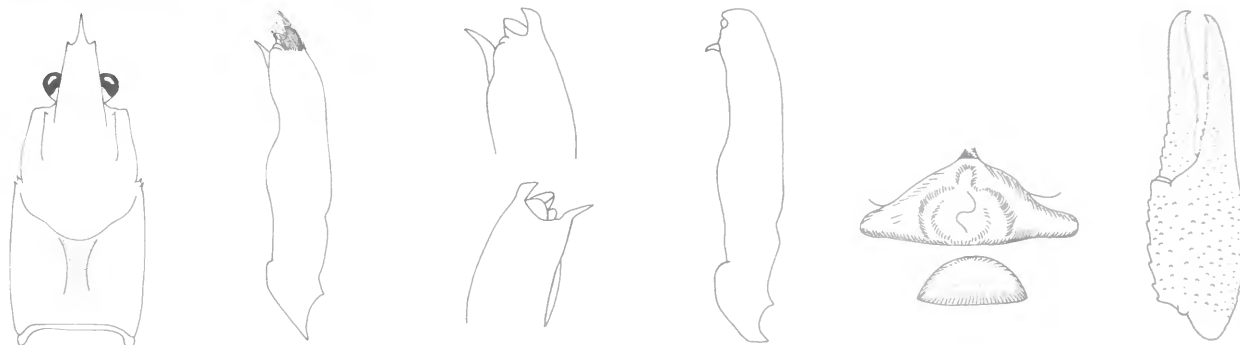


331. *Procambarus (Pennides) elegans*

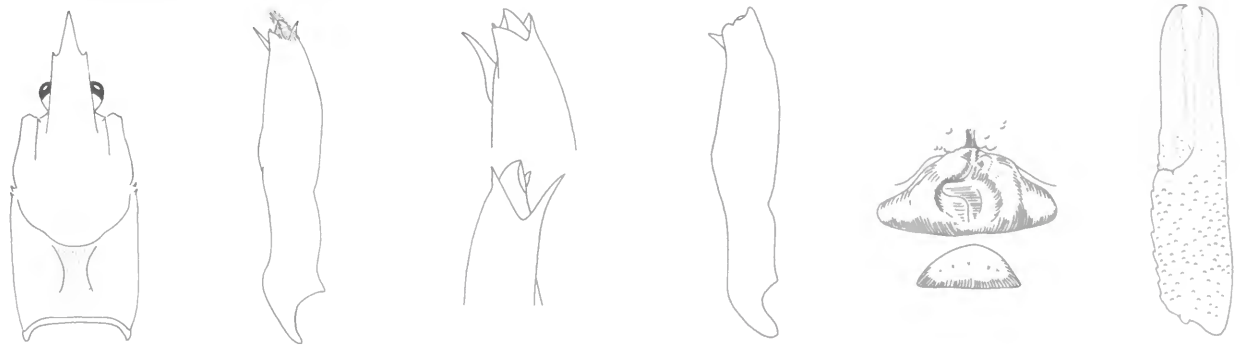
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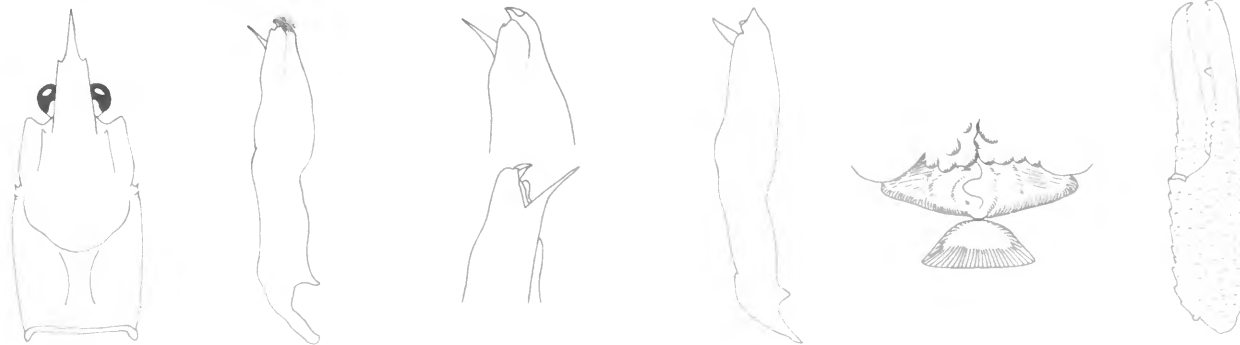
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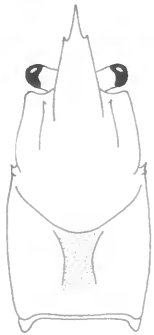
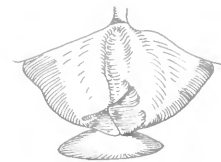
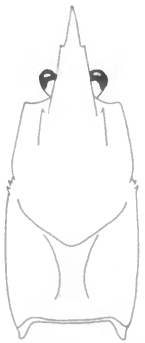
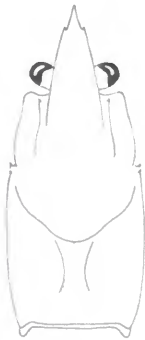
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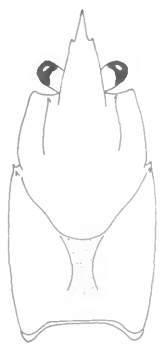
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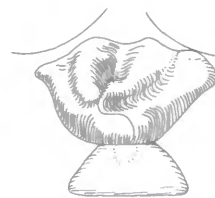
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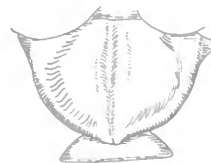
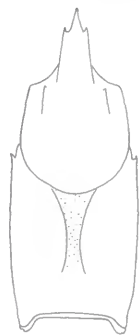




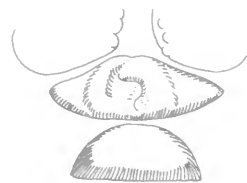
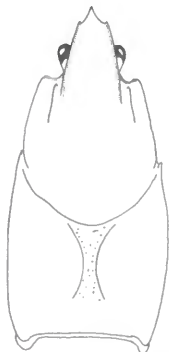
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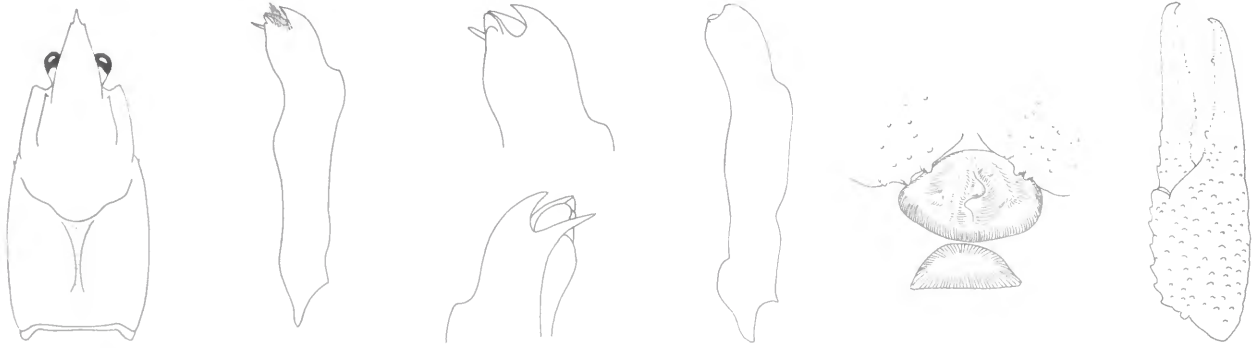
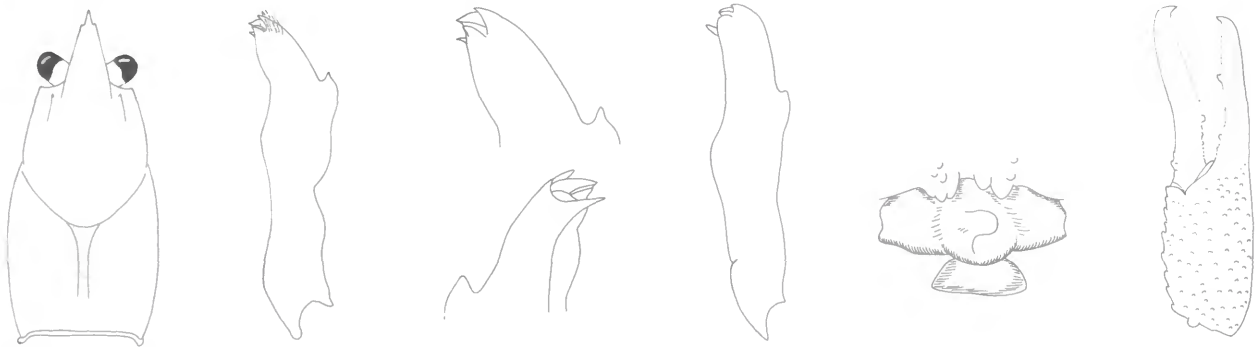
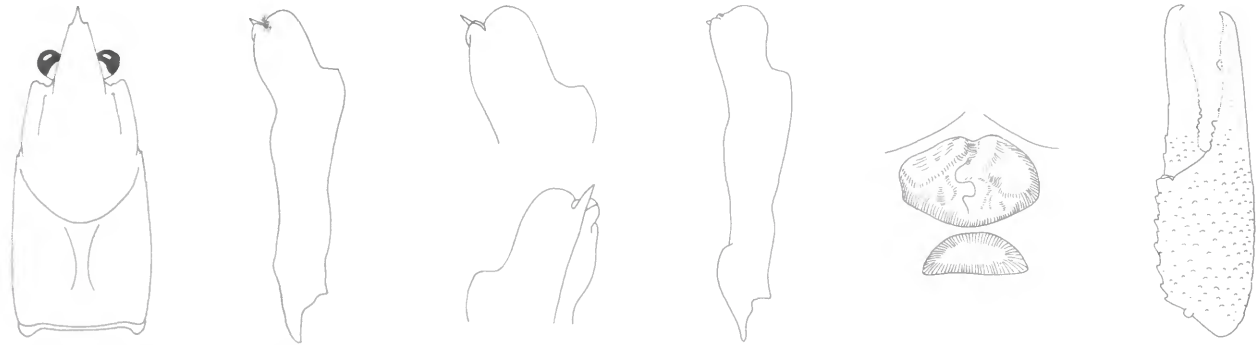
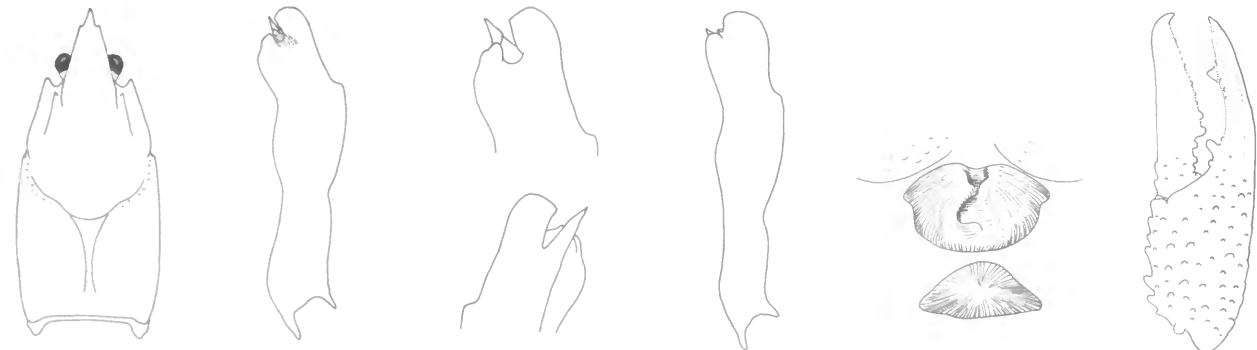
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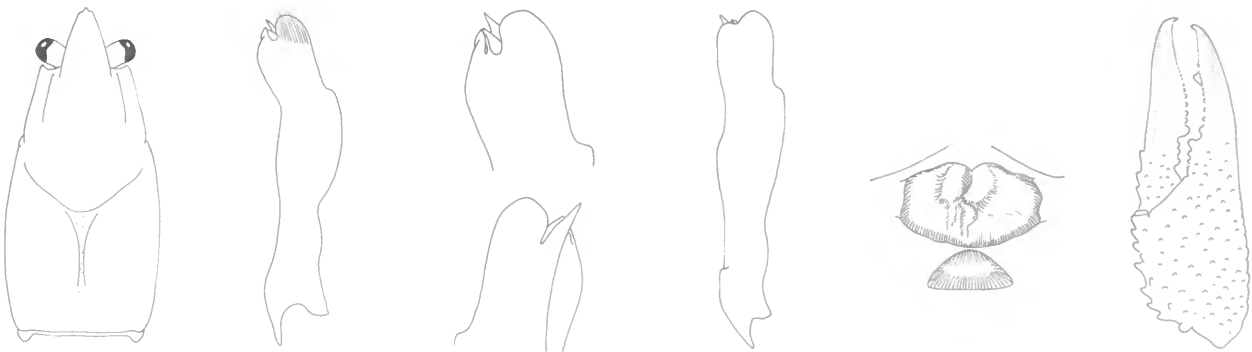


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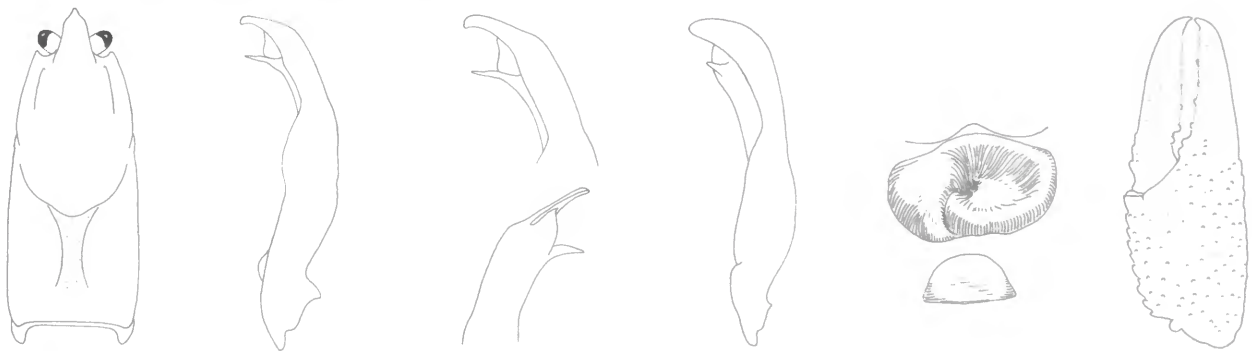


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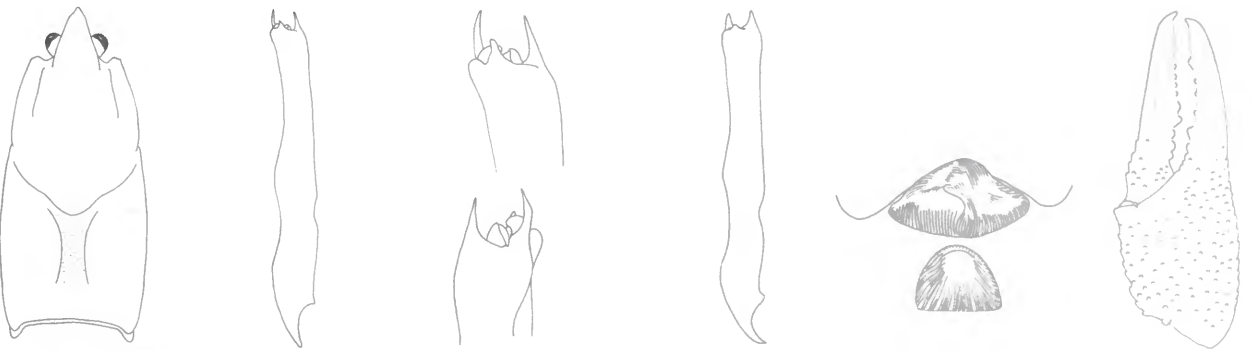
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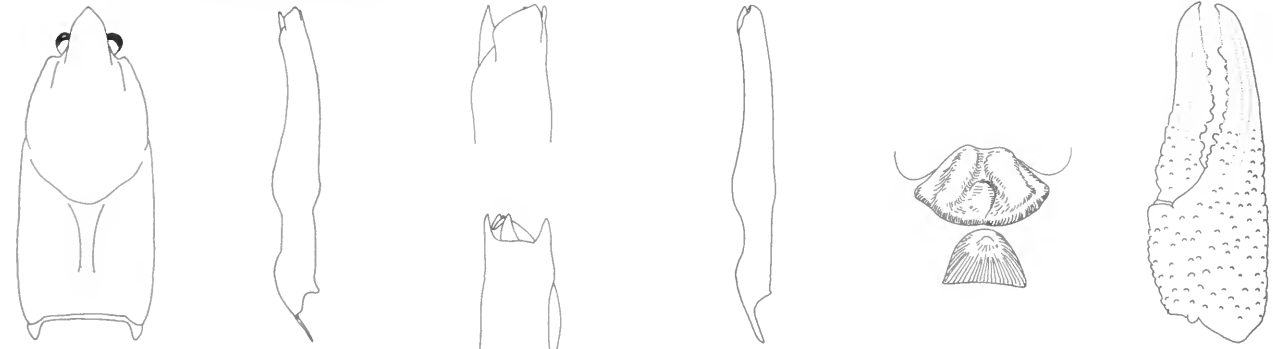
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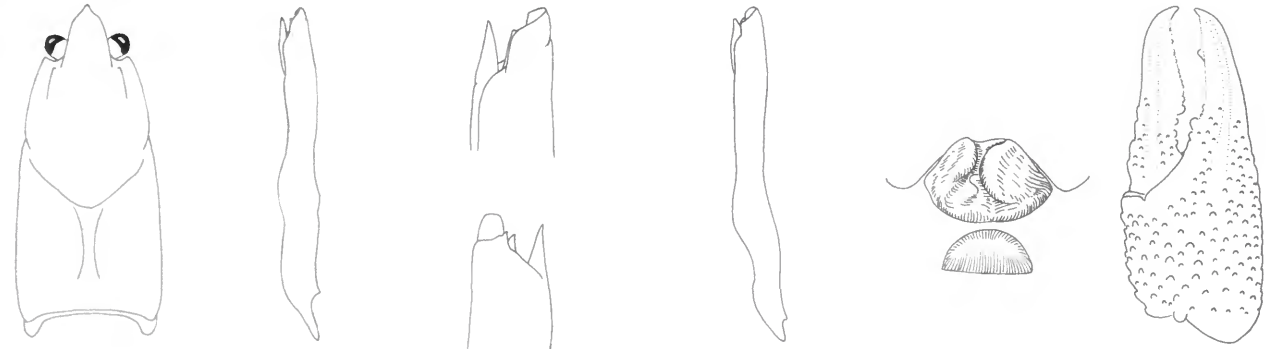
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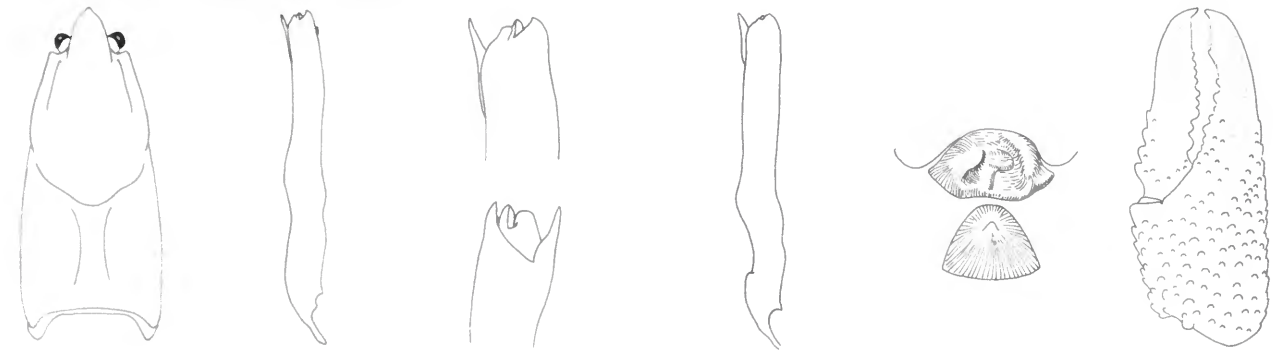
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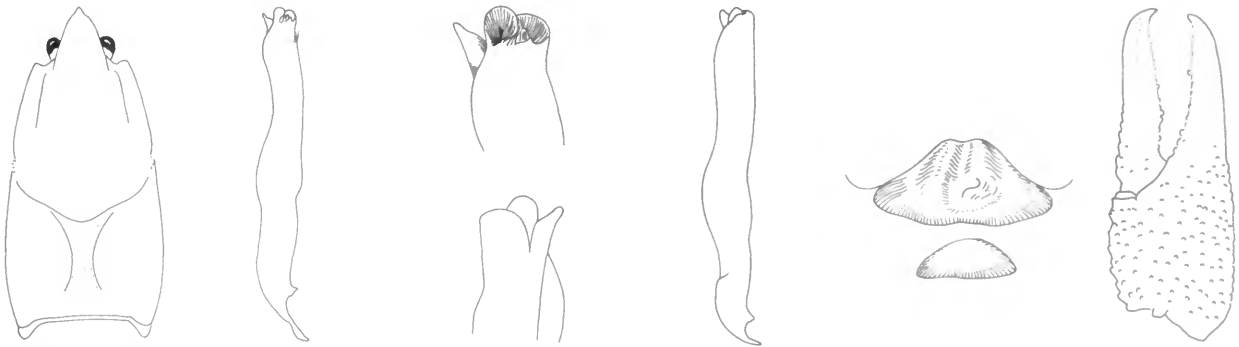


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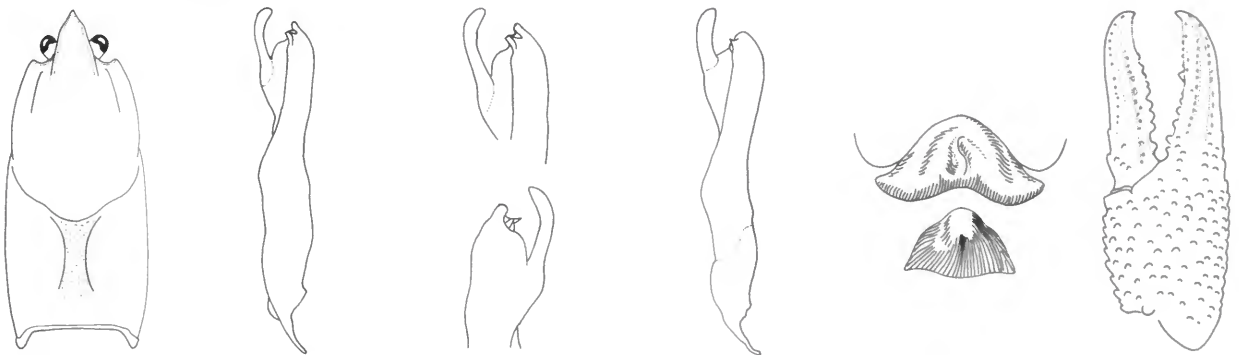


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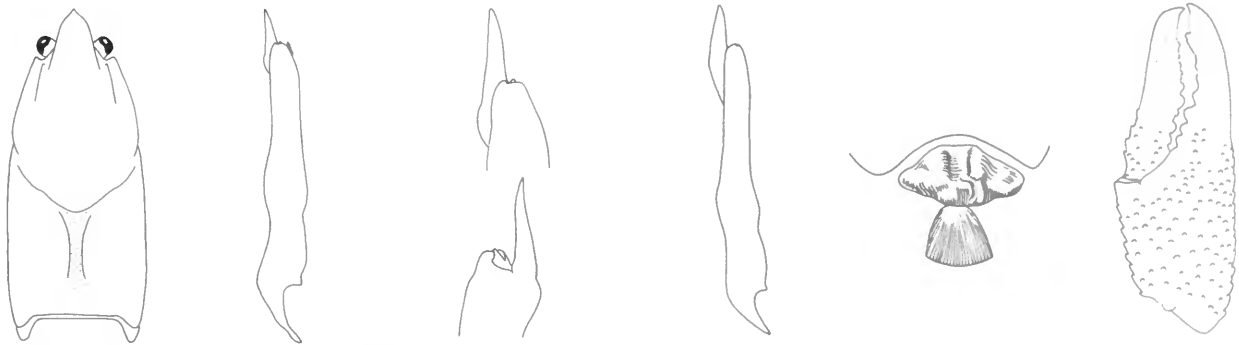




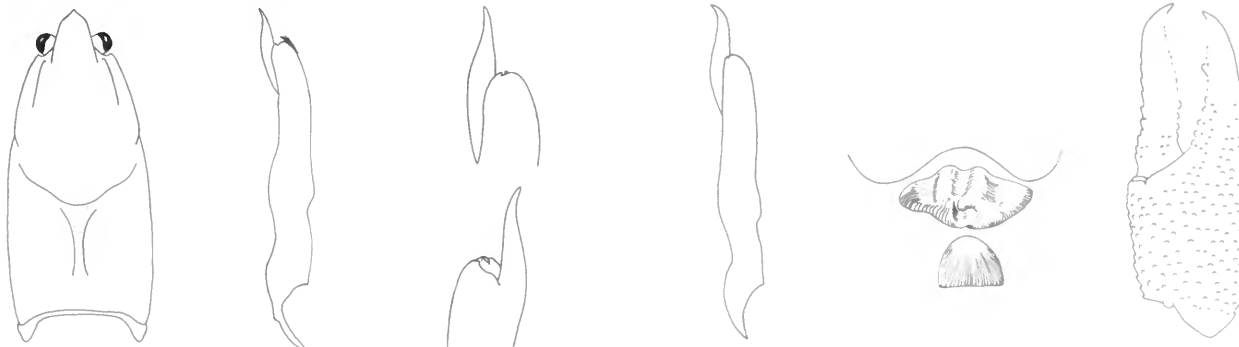
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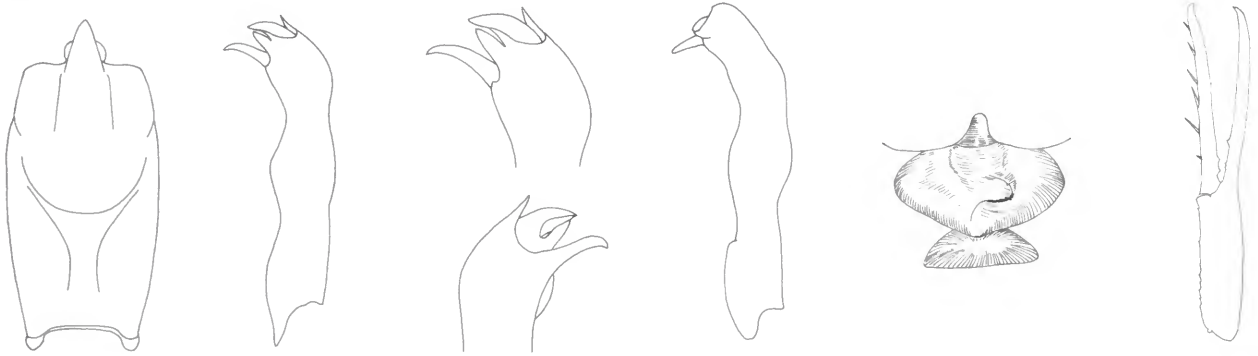
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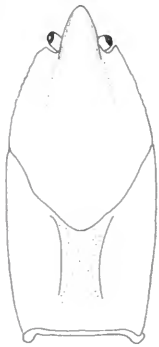
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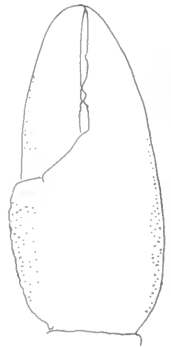
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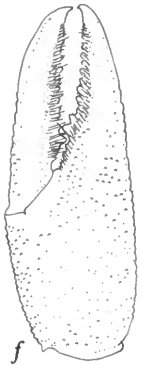
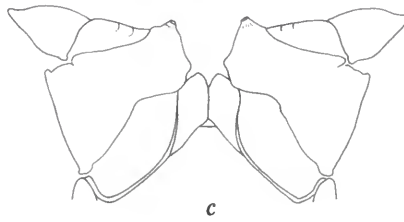
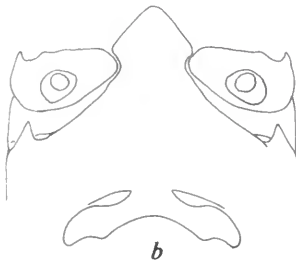
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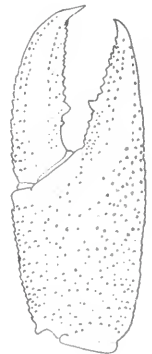
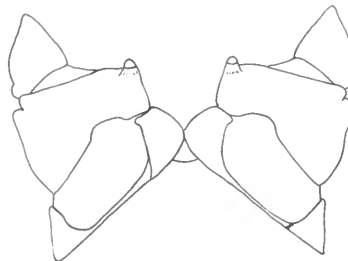
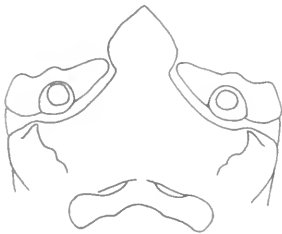
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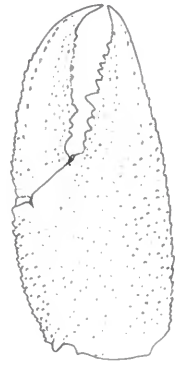
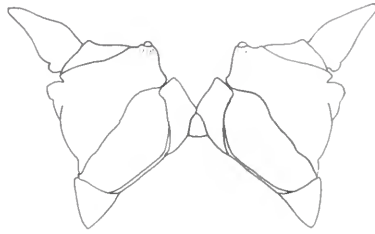
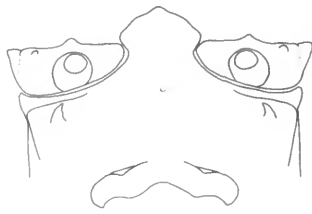
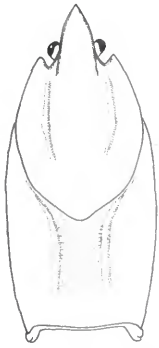
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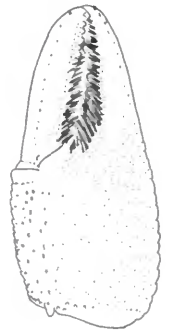
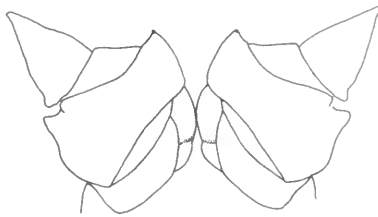
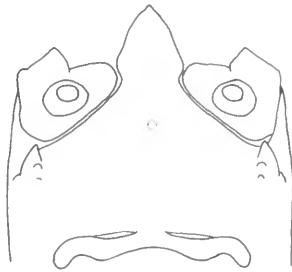
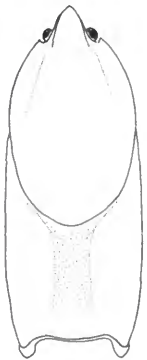
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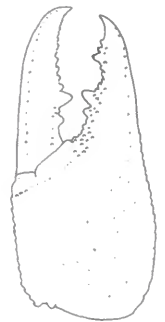
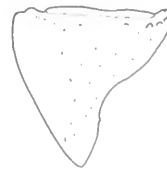
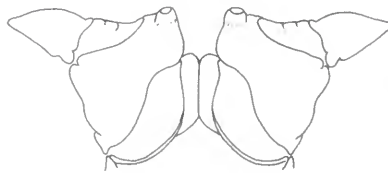
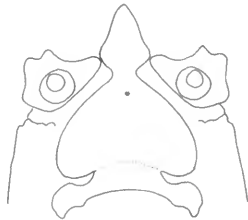
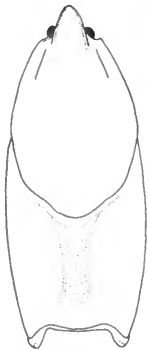
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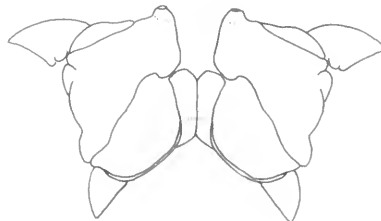
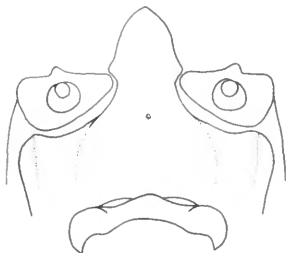
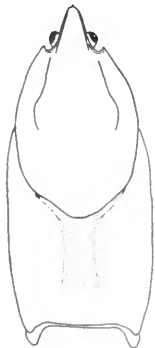
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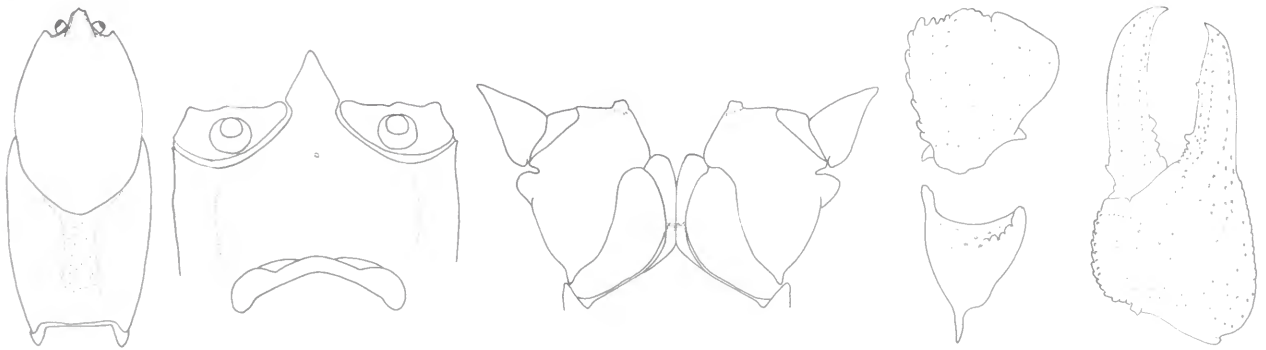
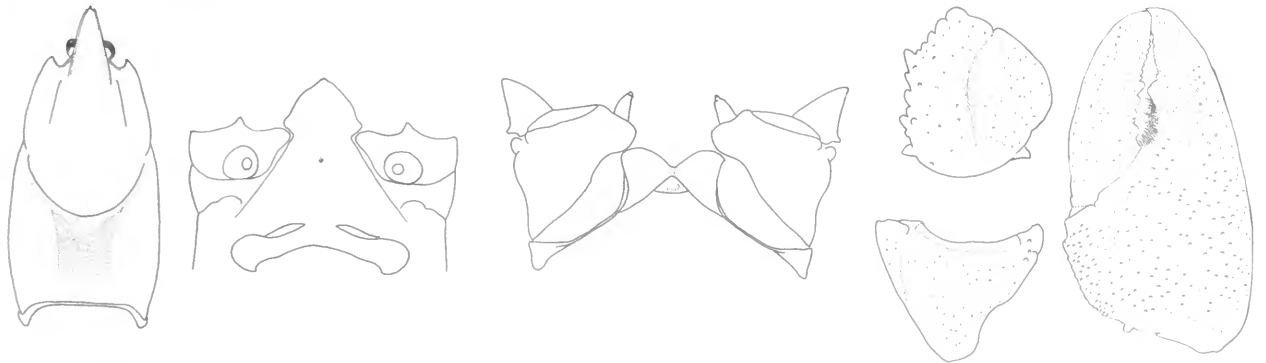
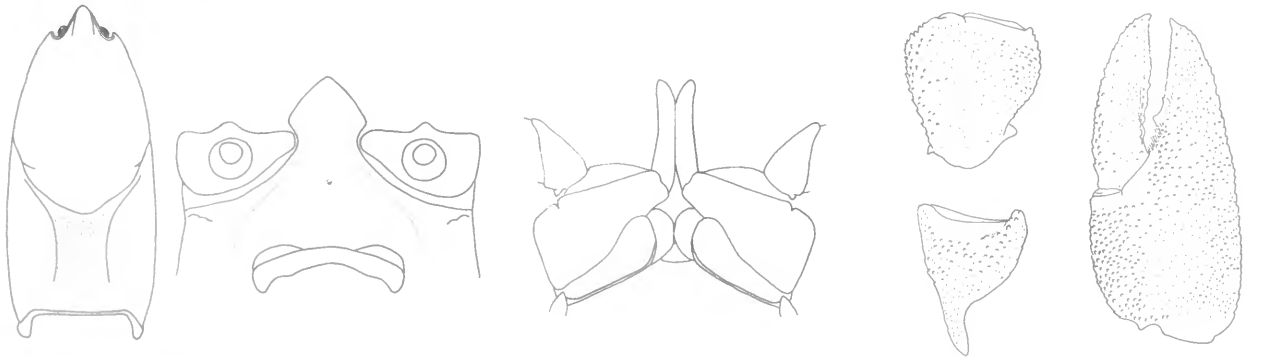
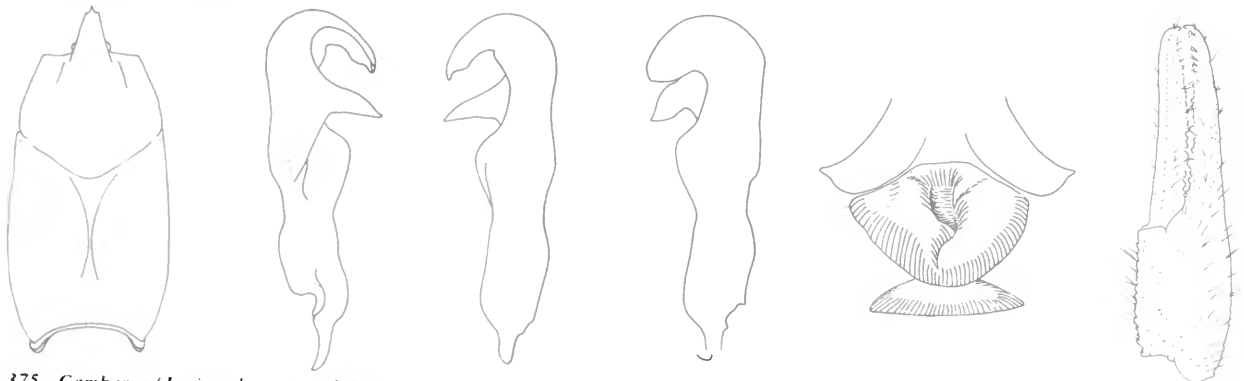
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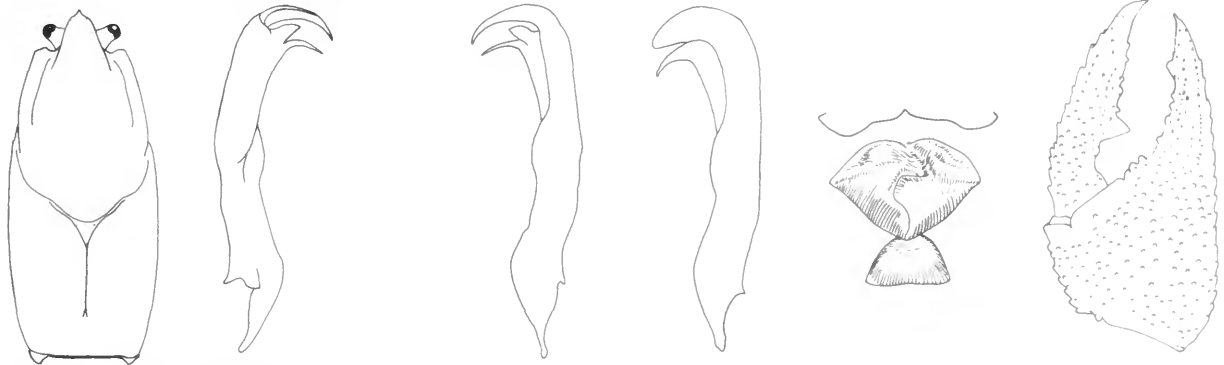
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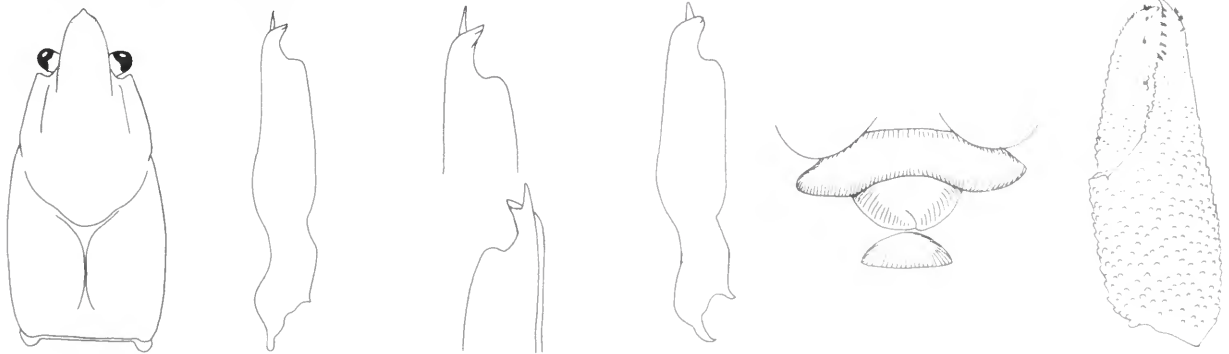
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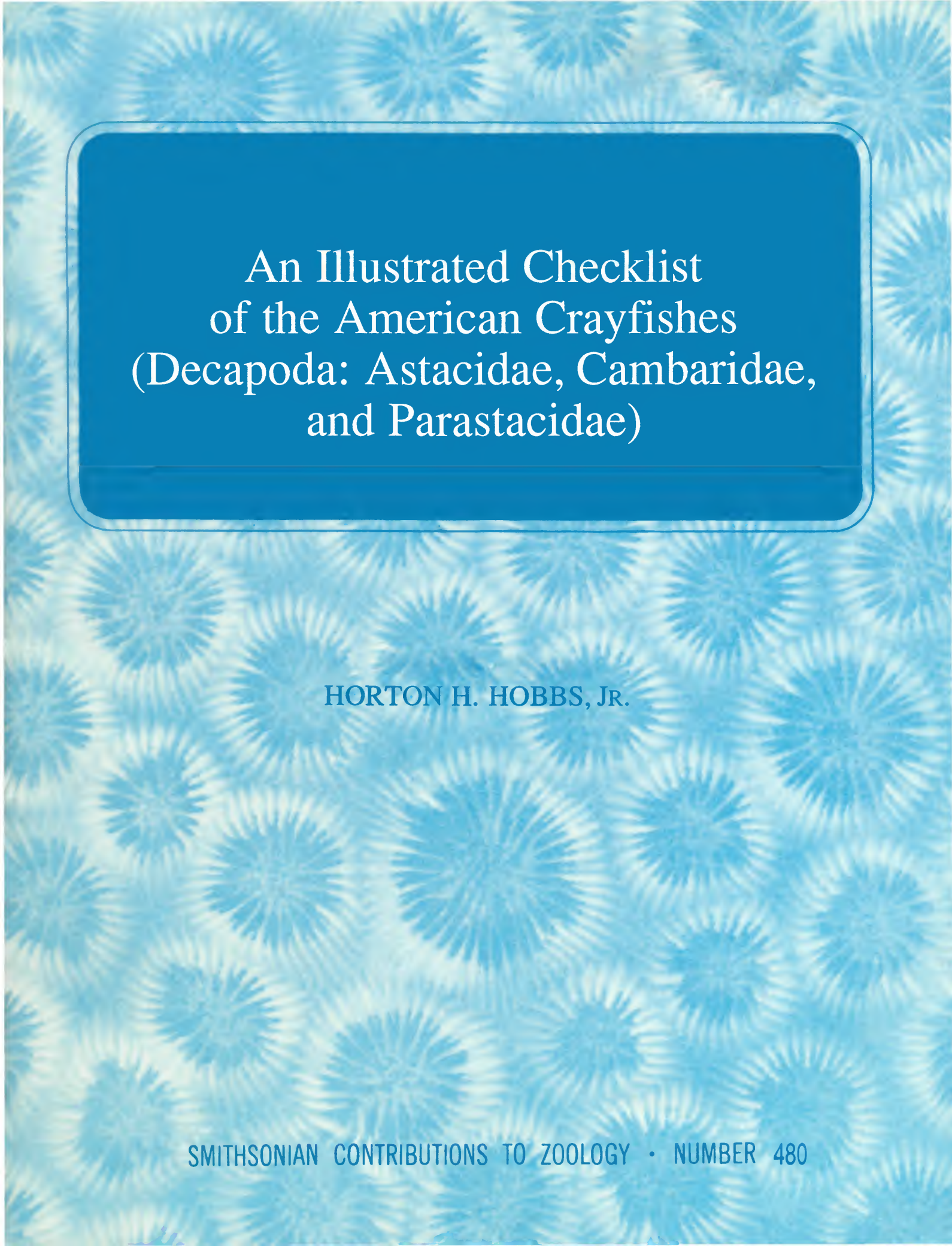


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An Illustrated Checklist  
of the American Crayfishes  
(Decapoda: Astacidae, Cambaridae,  
and Parastacidae)

HORTON H. HOBBS, JR.

SMITHSONIAN CONTRIBUTIONS TO ZOOLOGY • NUMBER 480

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