

Summary of Albert H. and Dora M. Banners' Contributions to the Knowledge of the Family Alpheidae (Decapoda: Caridea)¹

RICHARD H. TITGEN²

ABSTRACT: Albert H. and Dora M. Banner produced a total of 43 documents (a thesis, a report, and 41 publications) on alpheid shrimp over a period of 47 yr. They studied the Indo-Pacific Faunal Region and focused on the systematics and zoogeography of the Alpheidae, a very large and complicated family. This paper summarizes the contributions to the systematic knowledge of the Alpheidae made by the Banners. It includes a bibliography of their publications and other documents, and three tables listing all alpheid taxa described by the Banners (three genera and 116 species), the nomenclatural changes made by the Banners, and "other" changes made or statements of explanation that assist in the understanding of alpheid systematics. All entries in the tables include the Banner reference in which the contribution was made.

ALBERT HENRY (HANK) BANNER began studying alpheid shrimp for his M.S. degree at the University of Hawaii, which he completed in August 1940. In 1946, after completing his Ph.D. at the University of Washington (1943) and serving in the U.S. Army Air Force, he joined the staff of the Zoology Department at the University of Hawaii, a position he held for the remainder of this career. The geographical location of the University of Hawaii allowed Hank to continue his research on Hawaiian and Indo-Pacific alpheid taxonomy, distribution, and ecology. He was joined by his wife, Dora M. (Dee) Banner, in his alpheid studies, an association that led her to an increasingly larger role in their joint studies.

The Banners completed a total of 43 publications, reports, and a thesis on alpheid shrimp over a period of 47 yr. Their interest in the huge Indo-Pacific Faunal Region led them to visit and collect from many localities. They also rapidly became known as alpheid experts and consequently were sent or given access to many other collections. They made an effort to collect in type localities whenever possible to study fresh material and make

notes on color and environment. They studied many type specimens, frequently by visiting various museums around the world. They rediagnosed or redescribed species when it was necessary to make them recognizable and correspond to modern descriptions, and established neotypes when appropriate.

The Alpheidae is one of the largest and most difficult families of shrimp with which to work. The systematics are complicated and are often made more difficult by the small size of the animals and the confusion in the literature. Morphological variability complicates identification of these animals, which are often dispersed over considerable geographic ranges. The Banners were interested in morphological variability and felt that when enough specimens were available for comparison the variability would cause the combination of many species and subspecies. This can be seen in their early establishment of several subspecies (13), forms (2), and varieties (2) that they believed to be separated geographically, and then their later synonymizing more than half of them as variable species. The Banners also synonymized many previously established subspecies, forms, and varieties.

The purpose of this paper is to give a brief summary of the contributions to the systematic knowledge of the Alpheidae made by the Banners. This is done in tabular form and

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² P. O. Box 542, South Beach, Oregon 97366.

TABLE 1

TAXA DESCRIBED BY THE BANNERS

Genus *Alpheopsis* Coutière, 1896

- (?) *Alpheopsis biunguiculatus* A. H. Banner, 1953 (= *A. biunguiculatus* A. H. Banner, 1953)
Alpheopsis diabilus A. H. Banner, 1956 (= *A. diabolus* A. H. Banner, 1956)
Alpheopsis species A. H. & D. M. Banner, 1966a
Alpheopsis tetrarthri A. H. Banner, 1956
Alpheopsis undicola D. M. & A. H. Banner, 1973
Alpheopsis yaldwyni D. M. & A. H. Banner, 1973

Genus *Alpheus* Fabricius, 1798

- Alpheus amirantei sizou* A. H. & D. M. Banner, 1967
Alpheus arenicolus A. H. & D. M. Banner, 1983
Alpheus arnoa A. H. Banner, 1957
Alpheus astrinx D. M. & A. H. Banner, 1982a
Alpheus australiensis D. M. & A. H. Banner, 1982a
Alpheus australosulcatus D. M. & A. H. Banner, 1982a
Alpheus balaenodigitus D. M. & A. H. Banner, 1982a
Alpheus batesi A. H. & D. M. Banner, 1964
Alpheus brucei D. M. & A. H. Banner, 1982b
Alpheus buchanorum A. H. & D. M. Banner, 1983
Alpheus bunburius D. M. & A. H. Banner, 1982a
Alpheus canaliculatus A. H. & D. M. Banner, 1968b
Alpheus chamorro A. H. Banner, 1956
Alpheus cloudi A. H. Banner, 1956 (= *A. stanleyi* Coutière, 1908)
Alpheus collumianus inermis A. H. Banner, 1956 (= *A. collumianus* Stimpson, 1860)
Alpheus collumianus medius A. H. Banner, 1956 (= *A. collumianus* Stimpson, 1860)
Alpheus collumianus probabilis A. H. Banner, 1956 (= *A. collumianus* Stimpson, 1860)
Alpheus compressus A. H. & D. M. Banner, 1981a
Alpheus cythereus A. H. & D. M. Banner, 1966b
Alpheus dolerus A. H. Banner, 1956
Alpheus foresti A. H. & D. M. Banner, 1981a
Alpheus georgei D. M. & A. H. Banner, 1982a
Alpheus heeia A. H. & D. M. Banner, 1975a
Alpheus heronicus D. M. & A. H. Banner, 1982a
Alpheus hutchingsae D. M. & A. H. Banner, 1982a
Alpheus labis D. M. & A. H. Banner, 1982a
Alpheus ladronis A. H. Banner, 1956
Alpheus lanceostylus A. H. Banner, 1959
Alpheus leptocheles A. H. & D. M. Banner, 1975b
Alpheus lobidens polynesica A. H. & D. M. Banner, 1975a (= *A. lobidens* de Haan, 1844)
Alpheus malabaricus mackayi A. H. Banner, 1959 (= *A. mackayi* A. H. Banner, 1959)
Alpheus malabaricus songkla A. H. & D. M. Banner, 1966b
Alpheus malabaricus trefzae D. M. & A. H. Banner, 1982a
Alpheus moretensis D. M. & A. H. Banner, 1982a
Alpheus nipa D. M. & A. H. Banner, 1985
Alpheus nobili A. H. & D. M. Banner, 1966a
Alpheus papillosus D. M. & A. H. Banner, 1982a
Alpheus parasocialis D. M. & A. H. Banner, 1982a
Alpheus perplexus A. H. Banner, 1956
Alpheus pomatoceros A. H. & D. M. Banner, 1966b (= *A. splendidus* Coutière, 1897)
Alpheus pustulosus A. H. & D. M. Banner, 1968b
Alpheus randalli A. H. & D. M. Banner, 1981b
Alpheus samoa A. H. & D. M. Banner, 1966a
Alpheus soelae D. M. & A. H. Banner, 1987
Alpheus spatulatus A. H. & D. M. Banner, 1968b
Alpheus species A. H. Banner, 1958 (? = *A. brevipes* Stimpson, 1860)
Alpheus species D. M. & A. H. Banner, 1982a
Alpheus species 1 A. H. Banner, 1956 (= *A. lanceostylus* A. H. Banner, 1959)

TABLE 1 (continued)

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- Alpheus* species 2 A. H. Banner, 1956 (= *A. obesomanus* Dana, 1852)
Alpheus species 3 A. H. Banner, 1956
Alpheus species No. IV A. H. & D. M. Banner, 1968a
Alpheus species A D. M. & A. H. Banner, 1979 (= *A. compressus* A. H. & D. M. Banner, 1981a)
Alpheus species B D. M. & A. H. Banner, 1979 (= *A. foresti* A. H. & D. M. Banner, 1981a)
Alpheus stantoni D. M. & A. H. Banner, 1987
Alpheus stephensoni D. M. Banner & C. R. Smalley, 1969
Alpheus strenuus cremnus D. M. & A. H. Banner, 1982a
Alpheus sudara A. H. & D. M. Banner, 1966b
Alpheus supachai A. H. & D. M. Banner, 1966b
Alpheus tasmanicus D. M. & A. H. Banner, 1982a
Alpheus tungii A. H. & D. M. Banner, 1966a
Crangon albatrossae A. H. Banner, 1953 (= *A. albatrossae* [A. H. Banner, 1953])
Crangon brachymerus A. H. Banner, 1953 (= *A. brachymerus* [A. H. Banner, 1953])
Crangon edmondsoni A. H. Banner, 1953 (= *A. coetivensis* Coutière, 1908)
Crangon gracilis var. *simplex* A. H. Banner, 1953 (= *A. gracilis* Heller, 1862)
Crangon hailstonei var. *paucispinata* A. H. Banner, 1953 (= *A. hailstonei* Coutière, 1905)
Crangon latipes A. H. Banner, 1953 (= *A. lottini* Guérin, 1829)
Crangon oahuensis A. H. Banner, 1953 (= *A. oahuensis* [A. H. Banner, 1953])
Crangon platyunguiculata A. H. Banner, 1953 (= *A. platyunguiculatus* [A. H. Banner, 1953])
Crangon pseudopugnax A. H. Banner, 1953 (= *A. pseudopugnax* [A. H. Banner, 1953])
Crangon tuihilli A. H. Banner, 1953 (= *A. crockeri* [Armstrong, 1941])
Thunor microscaphis A. H. Banner, 1959 (= *A. microscaphis* [A. H. Banner, 1959])
Thunor species 1 A. H. Banner, 1956 (= *A. microscaphis* [A. H. Banner, 1959])
- Genus *Athanas* Leach, 1814
- Athanas dimorphus seedang* A. H. & D. M. Banner, 1966b (= *A. dimorphus* Ortmann, 1894)
Athanas dubius A. H. Banner, 1956 (= *A. areteformis* Coutière, 1903)
Athanas gracilipes D. M. & A. H. Banner, 1979
Athanas locincertus D. M. & A. H. Banner, 1973
Athanas naga A. H. & D. M. Banner, 1966b
Athanas ornithorhynchus D. M. & A. H. Banner, 1973
Athanas phyllocheles A. H. & D. M. Banner, 1983
Athanas near *polymorphus* A. H. & D. M. Banner, 1966b
Athanas polynesia A. H. & D. M. Banner, 1966a (= *A. borradailei* [Coutière, 1903])
Athanas rathionastes A. H. & D. M. Banner, 1960a
Athanas species #1 A. H. & D. M. Banner, 1966b
Athanas verrucosus A. H. & D. M. Banner, 1960a
- Genus *Athanopsis* Coutière, 1897
- Athanopsis australis* D. M. & A. H. Banner, 1982a
Athanopsis brevirostris D. M. & A. H. Banner, 1981
- Genus *Leptalpheus* Williams, 1965
- Leptalpheus pacificus* A. H. & D. M. Banner, 1975a
- Genus *Metabetaeus* Borradaile, 1898
- Metabetaeus lohena* A. H. & D. M. Banner, 1960c
Metabetaeus sp. (?) A. H. & D. M. Banner, 1983
- Genus *Metalpheus* Coutière, 1908
- Alpheus huikau* A. H. Banner, 1959 (= *M. rostratipes* [Pocock, 1890])
Crangon nanus A. H. Banner, 1953 (= *M. rostratipes* [Pocock, 1890])
- Genus *Nennalpheus* A. H. & D. M. Banner, 1981a
- Genus and species nov. D. M. & A. H. Banner, 1979 (= *N. inarticulatus* A. H. & D. M. Banner, 1981a)
Nennalpheus inarticulatus A. H. & D. M. Banner, 1981a

TABLE 1 (continued)

Genus *Neopalpheopsis* A. H. Banner, 1953

Neopalpheopsis hiatti A. H. Banner, 1953 (= *N. euryone* [de Man, 1910])

Genus *Prionalpheus* A. H. & D. M. Banner, 1960b

Prionalpheus brachytomerus A. H. & D. M. Banner, 1971

Prionalpheus sp. A. H. & D. M. Banner, 1960b (= *P. brachytomerus* A. H. & D. M. Banner, 1971)

Prionalpheus sulu A. H. & D. M. Banner, 1971

Prionalpheus triarticulatus A. H. & D. M. Banner, 1960b

Genus *Salmoneus* Holthuis, 1955

Salmoneus bruni A. H. & D. M. Banner, 1966b

Salmoneus tafaongae A. H. & D. M. Banner, 1966a

Salmoneus tricristata A. H. Banner, 1959 (= *S. tricristatus* A. H. Banner, 1959)

Genus *Synalpheus* Bate, 1888

Synalpheus anceps A. H. Banner, 1956

Synalpheus charon obscurus A. H. Banner, 1956 (= *S. charon* [Heller, 1861])

Synalpheus coutièrei A. H. Banner, 1953 (= *S. coutierei* A. H. Banner, 1953)

Synalpheus cretocolatus A. H. & D. M. Banner, 1980

Synalpheus crosnieri A. H. & D. M. Banner, 1983

Synalpheus echinus D. M. & A. H. Banner, 1975

Synalpheus harpagatrus D. M. & A. H. Banner, 1975

Synalpheus mortenseni D. M. & A. H. Banner, 1985

Synalpheus neptunus germanus D. M. & A. H. Banner, 1975

Synalpheus nilandensis forma *alpha* D. M. & A. H. Banner, 1975

Synalpheus nilandensis forma *beta* D. M. & A. H. Banner, 1975

Synalpheus paradoxus D. M. & A. H. Banner, 1981

Synalpheus paralaticeps D. M. & A. H. Banner, 1982a

Synalpheus quadriarticulatus D. M. & A. H. Banner, 1975

Synalpheus readi A. H. & D. M. Banner, 1972

Synalpheus redactocarpus A. H. Banner, 1953

Synalpheus sciro D. M. & A. H. Banner, 1975

Synalpheus somalia A. H. & D. M. Banner, 1980

Synalpheus species near *theo* A. H. & D. M. Banner, 1966b

Synalpheus spongicola D. M. & A. H. Banner, 1981

Synalpheus streptodactylus hadrungus A. H. & D. M. Banner, 1966a (= *S. streptodactylus* Coutière, 1905)

Synalpheus thai A. H. & D. M. Banner, 1966b

Synalpheus tijou D. M. & A. H. Banner, 1982a

Synalpheus tropidodactylus D. M. & A. H. Banner, 1975

Synalpheus tuthilli A. H. Banner, 1959

New Genera Described

Nennalpheus A. H. & D. M. Banner, 1981a

Neopalpheopsis A. H. Banner, 1953

Prionalpheus A. H. & D. M. Banner, 1960b

includes the Banner reference to the contribution or change. The tables are arranged alphabetically by genus and species. Table 1 lists all of the alpheid taxa described by the Banners. Table 2 lists nomenclatural changes made by the Banners and is divided into two parts: (1) changes in specific names, and (2) changes to and from subspecific rank. Table 3 lists "other" changes made or statements of

explanation that assist in the understanding of alpheid systematics.

MATERIALS AND METHODS

The bibliography contains all of the Banner alpheid literature. Tables 1–3 are my interpretation from this literature of the taxonomic

TABLE 2
 NOMENCLATURAL CHANGES MADE BY THE BANNERS
 PART 1. Changes in Specific Names

JUNIOR SYNONYM	SENIOR SYNONYM	REFERENCE
Genus <i>Alpheopsis</i> Coutière, 1896		
<i>Alpheopsis equalis</i> var. <i>truncatus</i> Coutière, 1896	<i>A. aequalis</i> Coutière, 1896	A. H. Banner 1953
Genus <i>Alpheus</i> Fabricius, 1798		
<i>Alpheus Amphitrite</i> White, 1847 (nomen nudum)	<i>A. euphrosyne</i> de Man, 1897	A. H. and D. M. Banner 1977b
<i>Alpheus Audouini</i> Coutière, 1905	<i>A. edwardsii</i> (Audouin, 1827[?1826])	A. H. and D. M. Banner 1973
<i>Alpheus baculifer</i> Coutière, 1908	<i>A. idiocheles</i> Coutière, 1905	A. H. and D. M. Banner 1967
<i>Alpheus braschi</i> Boone, 1935	<i>A. parvirostris</i> Dana, 1852	D. M. and A. H. Banner 1982a
<i>Alpheus bullatus</i> Barnard, 1955	<i>A. architectus</i> de Man, 1897	D. M. and A. H. Banner 1982a
<i>Alpheus cloudi</i> A. H. Banner, 1956	<i>A. stanleyi</i> Coutière, 1908	A. H. and D. M. Banner 1983
<i>Alpheus consobrinus</i> de Man, 1908	<i>A. bucephalus</i> Coutière, 1905	A. H. Banner 1957
<i>Alpheus crassimanus</i> Heller, 1862	<i>A. lobidens</i> de Haan, 1844	A. H. and D. M. Banner 1975a
<i>Alpheus Danae</i> Coutière, 1905	<i>A. malleodigitus</i> (Bate, 1888)	A. H. and D. M. Banner 1983
<i>Alpheus dissodontonotus</i> Stebbing, 1915	<i>A. bidens</i> (Olivier, 1811)	D. M. and A. H. Banner 1982a
<i>Alpheus djiboutensis</i> de Man, 1909	<i>A. djeddensis</i> Coutière, 1897	D. M. and A. H. Banner 1981
<i>Alpheus Doris</i> White, 1847 (nomen nudum)	<i>A. strenuus</i> Dana, 1852	A. H. and D. M. Banner 1977b
<i>Alpheus Doto</i> White, 1847 (nomen nudum)	<i>A. socialis</i> Heller, 1865	A. H. and D. M. Banner 1977b
<i>Alpheus euchirus</i> Dana, 1852 [part]	<i>A. georgei</i> D. M. & A. H. Banner, 1982a	D. M. and A. H. Banner 1982a
<i>Alpheus euchirus</i> Dana, 1852 [part]	<i>A. serenei</i> Tiwari, 1963	D. M. and A. H. Banner 1982a
<i>Alpheus euchiroides</i> Nobili, 1906	<i>A. parvirostris</i> Dana, 1852	A. H. and D. M. Banner 1983
<i>Alpheus Eulimene</i> de Man, 1909	<i>A. styliceps</i> Coutière, 1905	A. H. and D. M. Banner 1983
<i>Alpheus eurydactylus</i> de Man, 1920	<i>A. euphrosyne</i> de Man, 1897	D. M. and A. H. Banner 1982a
<i>Alpheus forceps</i> White, 1847 (nomen nudum)	<i>A. malabaricus</i> (Fabricius, 1775)	A. H. and D. M. Banner 1977b
<i>Alpheus inopinatus</i> Holthuis & Gottlieb, 1958	<i>A. lobidens</i> de Haan, 1844	D. M. and A. H. Banner 1981
<i>Alpheus insignis</i> Heller, 1862	<i>A. diadema</i> Dana, 1852 [as <i>Crangon</i>]	A. H. Banner 1953
<i>Alpheus luciae</i> Barnard, 1947	<i>A. sulcatus</i> Kingsley, 1878	D. M. and A. H. Banner 1982a
<i>Alpheus Lutini</i> Coutière, 1905	<i>A. obesomanus</i> Dana, 1852	A. H. and D. M. Banner 1966a
<i>Alpheus macrochirus</i> Richters, 1880	<i>A. sulcatus</i> Kingsley, 1878	D. M. and A. H. Banner 1982a
<i>Alpheus Malhaensis</i> Coutière, 1908	<i>A. collumianus</i> Stimpson, 1860	D. M. and A. H. Banner 1982a
<i>Alpheus persicus</i> Nobili, 1905	<i>A. malleodigitus</i> (Bate, 1888)	A. H. and D. M. Banner 1966a
<i>Alpheus phrygianus</i> Coutière, 1905	<i>A. malleodigitus</i> (Bate, 1888)	A. H. and D. M. Banner 1966a
<i>Alpheus pomatoceros</i> A. H. & D. M. Banner, 1966b	<i>A. splendidus</i> Coutière, 1897	D. M. and A. H. Banner 1982a
<i>Alpheus praedator</i> de Man, 1908	<i>A. bidens</i> (Olivier, 1811)	D. M. and A. H. Banner 1982a
<i>Alpheus Providencei</i> Coutière, 1908	<i>A. paralcione</i> Coutière, 1905	A. H. and D. M. Banner 1983
<i>Alpheus Seurati</i> Coutière, 1905	<i>A. collumianus</i> Stimpson, 1860	A. H. and D. M. Banner 1983
<i>Alpheus</i> sp. Coutière, 1905	<i>A. lottini</i> Guérin, 1829 [as <i>Crangon latipes</i>]	A. H. Banner 1953
<i>Alpheus</i> sp. Nobili, 1906	<i>A. nobili</i> A. H. & D. M. Banner, 1966a	A. H. and D. M. Banner 1966a
<i>Alpheus</i> sp. de Man, 1911	<i>A. perplexus</i> A. H. Banner, 1956	A. H. Banner 1956
<i>Alpheus</i> sp. Forest & Guinot, 1958	<i>A. lobidens</i> de Haan, 1844 [as <i>A. inopinatus</i>]	D. M. and A. H. Banner 1982a
<i>Alpheus</i> species A. H. Banner, 1958	? <i>A. brevipes</i> Stimpson, 1860	A. H. and D. M. Banner 1966a
<i>Alpheus</i> species 1 A. H. Banner, 1956	<i>A. lanceostylus</i> A. H. Banner, 1959	A. H. Banner 1959
<i>Alpheus</i> species 2 A. H. Banner, 1956	<i>A. obesomanus</i> Dana, 1852	A. H. and D. M. Banner 1966a

TABLE 2 (continued)

JUNIOR SYNONYM	SENIOR SYNONYM	REFERENCE
<i>Alpheus</i> species A D. M. & A. H. Banner, 1979	<i>A. compressus</i> A. H. & D. M. Banner, 1981a	A. H. and D. M. Banner 1981a
<i>Alpheus</i> species B D. M. & A. H. Banner, 1979	<i>A. foresti</i> A. H. & D. M. Banner, 1981a	A. H. and D. M. Banner 1981a
<i>Alpheus Thetis</i> White, 1847 (nomen nudum)	<i>A. lottini</i> Guérin, 1829	A. H. and D. M. Banner 1977b
<i>Alpheus Thetis</i> Miers, 1874	<i>A. lottini</i> Guérin, 1829	A. H. and D. M. Banner 1977b
<i>Alpheus Triton</i> White, 1847 (nomen nudum)	? <i>A. pacificus</i> Dana, 1852	A. H. and D. M. Banner 1977b
<i>Crangon edmondsoni</i> A. H. Banner, 1953	<i>A. coetivensis</i> Coutière, 1908	A. H. and D. M. Banner 1983
<i>Crangon latipes</i> A. H. Banner, 1953	<i>A. lottini</i> Guérin, 1829 [as <i>A. ventrosus</i>]	A. H. Banner 1958
<i>Crangon laysani</i> Edmondson, 1925	<i>A. paralcione</i> Coutière, 1905 [as <i>Crangon</i>]	A. H. Banner 1953
<i>Crangon</i> species MacKay, 1947	<i>A. mackayi</i> A. H. Banner, 1959 [as <i>A. malabaricus mackayi</i>]	A. H. Banner 1959
<i>Crangon tuthilli</i> A. H. Banner, 1953	<i>A. crockeri</i> (Armstrong, 1941)	A. H. and D. M. Banner 1966a
<i>Thunor</i> species I A. H. Banner, 1956	<i>A. microscaphis</i> (A. H. Banner, 1959) [as <i>Thunor</i>]	A. H. Banner 1959
Genus <i>Aretopsis</i> de Man, 1910		
<i>Aretopsis aegyptiaca</i> Ramadan, 1936	<i>A. amabilis</i> de Man, 1910	D. M. and A. H. Banner 1973
Genus <i>Athanas</i> Leach, 1814		
<i>Arete ghardaquensis</i> Ramadan, 1936	<i>A. borradailei</i> (Coutière, 1903)	A. H. and D. M. Banner 1983
<i>Arete intermedius</i> Yu, 1931	<i>A. indicus</i> (Coutière, 1903)	A. H. and D. M. Banner 1960a
<i>Arete Iphianassa</i> de Man, 1910	<i>A. indicus</i> (Coutière, 1903)	A. H. and D. M. Banner 1960a
<i>Arete kominatoensis</i> Kubo, 1942	<i>A. indicus</i> (Coutière, 1903)	A. H. and D. M. Banner 1960a: D. M. and A. H. Banner (1973) remarked that Suzuki (1970) believed <i>A. kominatoensis</i> to be a distinct species
<i>Arete Maruteensis</i> Coutière, 1905	<i>A. dorsalis</i> (Stimpson, 1860)	A. H. and D. M. Banner 1960a
<i>Athanas dubius</i> A. H. Banner, 1956	<i>A. areteformis</i> Coutière, 1903	A. H. and D. M. Banner 1960a
<i>Athanas erythraeus</i> Ramadan, 1936	<i>A. areteformis</i> Coutière, 1903	A. H. and D. M. Banner 1960a
<i>Athanas Naifaroensis</i> Coutière, 1903	<i>A. areteformis</i> Coutière, 1903	A. H. and D. M. Banner 1960a
<i>Athanas polynesia</i> A. H. & D. M. Banner, 1966a	<i>A. borradailei</i> (Coutière, 1903)	A. H. and D. M. Banner 1983
<i>Athanas setoensis</i> Kubo, 1951	<i>A. dimorphus</i> Ortmann, 1894	D. M. and A. H. Banner 1973
<i>Athanas Sibogae</i> de Man, 1910	<i>A. parvus</i> de Man, 1910	A. H. and D. M. Banner (1960a) placed these species in synonymy with <i>A. parvus</i> as the senior synonym. However, Miya and Miyake (1968) believed <i>A. sibogae</i> to be the senior synonym based on page priority [accepted by D. M. and A. H. Banner (1973)]. However, Chace (1988) pointed out that the Banners (1960a) were acting as first revisors and that the choice of senior synonym is based on more than just page priority.

TABLE 2 (continued)

JUNIOR SYNONYM	SENIOR SYNONYM	REFERENCE
Genus <i>Automate</i> de Man, 1888		
<i>Automate Gardineri</i> Coutière, 1902	<i>A. dolichognatha</i> de Man, 1888	D. M. and A. H. Banner 1973
<i>Automate johnsoni</i> Chace, 1955	<i>A. dolichognatha</i> de Man, 1888 [as <i>A. gardineri</i>]	A. H. and D. M. Banner 1966a
<i>Automate</i> sp. de Man, 1911	<i>A. dolichognatha</i> de Man, 1888	D. M. and A. H. Banner 1973
Genus <i>Metalpheus</i> Coutière, 1908		
<i>Alpheus huikau</i> A. H. Banner, 1959	<i>M. rostratipes</i> (Pocock, 1890) [as <i>A. clippertoni</i>]	A. H. and D. M. Banner 1964
<i>Alpheus</i> sp. ? <i>Metalpheus</i> n. gen. Coutière, 1908, 1921	<i>M. rostratipes</i> (Pocock, 1890) [as <i>Crangon nanus</i>]	A. H. Banner 1953
<i>Crangon nanus</i> A. H. Banner, 1953	<i>M. rostratipes</i> (Pocock, 1890) [as <i>A. clippertoni</i>]	A. H. and D. M. Banner 1964
Genus <i>Nennalpheus</i> A. H. & D. M. Banner, 1981a		
Genus and species nov. D. M. & A. H. Banner, 1979		
	<i>N. inarticulatus</i> A. H. & D. M. Banner, 1981a	A. H. and D. M. Banner 1981a
Genus <i>Neopalpheopsis</i> A. H. Banner, 1953		
<i>Alpheopsis hummelincki</i> Schmitt, 1936	<i>N. euryone</i> (de Man, 1910)	D. M. and A. H. Banner 1985
<i>Neopalpheopsis hiatti</i> A. H. Banner, 1953	<i>N. euryone</i> (de Man, 1910)	D. M. and A. H. Banner 1985
Genus <i>Prionalpheus</i> A. H. & D. M. Banner, 1960b		
<i>Prionalpheus</i> sp. A. H. & D. M. Banner, 1960b	<i>P. brachytomerus</i> A. H. & D. M. Banner, 1971	A. H. and D. M. Banner 1971
Genus <i>Salmoneus</i> Holthuis, 1955		
<i>Jousseamea latirostris</i> Coutière, 1896	<i>S. serratidigitus</i> (Coutière, 1896)	D. M. and A. H. Banner 1981
<i>Jousseamea Sibogae</i> de Man, 1910	<i>S. serratidigitus</i> (Coutière, 1896)	D. M. and A. H. Banner 1981
Genus <i>Synalpheus</i> Bate, 1888		
<i>Alpheinus tridens</i> Borradaile, 1899	<i>S. stimpsonii</i> (de Man, 1888)	A. H. and D. M. Banner 1984
<i>Alpheus amboinae</i> Zehntner, 1894	<i>S. stimpsonii</i> (de Man, 1888)	D. M. and A. H. Banner 1975
<i>Alpheus prolificus</i> Bate, 1888	<i>S. charon</i> (Heller, 1861)	D. M. and A. H. Banner 1975
<i>Synalpheus acanthitelsonis</i> Coutière, 1905	<i>S. hastilicrassus</i> Coutière, 1905	D. M. and A. H. Banner 1975
<i>Synalpheus anisocheir</i> Stebbing, 1915	<i>S. tumidomanus</i> (Paulson, 1875)	D. M. and A. H. Banner 1975
<i>Synalpheus Bakeri</i> Coutière, 1908	<i>S. fossor</i> (Paulson, 1875)	D. M. and A. H. Banner 1975
<i>Synalpheus brucei</i> Potts, 1915	<i>S. stimpsonii</i> (de Man, 1888)	D. M. and A. H. Banner 1975
<i>Synalpheus consobrinus</i> de Man, 1909	<i>S. stimpsonii</i> (de Man, 1888)	A. H. and D. M. Banner 1968a
<i>Synalpheus Gravieri</i> Coutière, 1905	<i>S. neomeris</i> (de Man, 1897)	D. M. and A. H. Banner 1975
<i>Synalpheus Helli</i> de Man, 1911	<i>S. charon</i> (Heller, 1861)	A. H. and D. M. Banner 1967
<i>Synalpheus Hululensis</i> Coutière, 1908	<i>S. tumidomanus</i> (Paulson, 1875)	A. H. and D. M. Banner 1968a
<i>Synalpheus jedanensis</i> de Man, 1909	<i>S. iphinoe</i> de Man, 1909	D. M. and A. H. Banner 1985
<i>Synalpheus Mac-Cullochi</i> Coutière, 1908	<i>S. tumidomanus</i> (Paulson, 1875)	D. M. and A. H. Banner 1975
<i>Synalpheus miscellaneous</i> de Man, 1909	<i>S. neomeris</i> (de Man, 1897)	D. M. and A. H. Banner 1985
<i>Synalpheus physoscheles</i> Coutière, 1908	<i>S. triunguiculatus</i> (Paulson, 1875)	D. M. and A. H. Banner 1985
<i>Synalpheus quadridens</i> de Man, 1910	<i>S. quadrispinosus</i> de Man, 1910	A. H. Banner 1958
<i>Synalpheus Sluiteri</i> de Man, 1920	<i>S. paraneomeris</i> Coutière, 1905	D. M. and A. H. Banner 1985
<i>Synalpheus streptodactyloides</i> de Man, 1909	<i>S. streptodactylus</i> Coutière, 1905	D. M. and A. H. Banner 1985

TABLE 2 (continued)

JUNIOR SYNONYM	SENIOR SYNONYM	REFERENCE
<i>Synalpheus striatus</i> Kubo, 1938	<i>S. stimpsonii</i> (de Man, 1888)	D. M. and A. H. Banner 1975
<i>Synalpheus Theophane</i> de Man, 1910	<i>S. tumidomanus</i> (Paulson, 1875)	A. H. and D. M. Banner 1968a
<i>Synalpheus townsendi</i> Coutière, 1909 [part]	<i>S. paraneomeris</i> Coutière, 1905	A. H. Banner 1953
<i>Synalpheus trionyx</i> Coutière, 1908	<i>S. fossor</i> (Paulson, 1875)	A. H. and D. M. Banner 1983

PART 2. Changes to or from Subspecific Rank

FROM	TO	REFERENCE
Genus <i>Alpheus</i> Fabricius, 1798		
<i>Alpheus bis-incisus</i> , var. <i>Malensis</i> Coutière, 1905	<i>A. bisincisus</i> de Haan, 1844	D. M. and A. H. Banner 1982a
<i>Alpheus bis-incisus</i> , var. <i>stylirostris</i> Coutière, 1905	<i>A. bisincisus</i> de Haan, 1844	D. M. and A. H. Banner 1982a
<i>Alpheus bisincisus variabilis</i> de Man, 1909	<i>A. bisincisus</i> de Haan, 1844	D. M. and A. H. Banner 1982a
<i>Alpheus Bouvieri</i> A. Milne-Edwards, 1878	<i>A. leviusculus bouvieri</i> A. Milne-Edwards, 1878	D. M. and A. H. Banner 1982a; A. H. and D. M. Banner (1964) had felt that <i>A. bouvieri</i> should be considered a synonym of <i>A. leviusculus</i>
<i>Alpheus Bouvieri</i> var. <i>Bastardi</i> Coutière, 1898	<i>A. leviusculus</i> Dana, 1852	A. H. and D. M. Banner 1964
<i>Alpheus Bouvieri</i> , var. <i>Hululensis</i> Coutière, 1905	<i>A. hululensis</i> Coutière, 1905	D. M. and A. H. Banner 1982a
<i>Alpheus bucephaloïdes</i> Nobili, 1905	<i>A. longecarinatus bucephaloïdes</i> Nobili, 1905	A. H. and D. M. Banner 1983
<i>Alpheus collumianus inermis</i> A. H. Banner, 1956	<i>A. collumianus</i> Stimpson, 1860	D. M. and A. H. Banner 1982a
<i>Alpheus collumianus medius</i> A. H. Banner, 1956	<i>A. collumianus</i> Stimpson, 1860	D. M. and A. H. Banner 1982a
<i>Alpheus collumianus probabilis</i> A. H. Banner, 1956	<i>A. collumianus</i> Stimpson, 1860	D. M. and A. H. Banner 1982a
<i>Alpheus Edwardsii</i> var. <i>leviusculus</i> Dana, 1852	<i>A. leviusculus leviusculus</i> Dana, 1852	D. M. and A. H. Banner 1982a
<i>Alpheus euphrosyne</i> de Man, 1897	<i>A. euphrosyne euphrosyne</i> de Man, 1897	D. M. and A. H. Banner 1982a
<i>Alpheus gracilis</i> , var. <i>Alluaudi</i> Coutière, 1905	<i>A. gracilis</i> Heller, 1862	D. M. and A. H. Banner 1982a
<i>Alpheus gracilis</i> var. <i>luciparensis</i> de Man, 1911	<i>A. gracilis</i> Heller, 1862	D. M. and A. H. Banner 1982a
<i>Alpheus Hailstonei</i> , var. <i>assimulans</i> de Man, 1908	<i>A. hailstonei</i> Coutière, 1905	D. M. and A. H. Banner 1982a
<i>Alpheus Hailstonei</i> , var. <i>laetabilis</i> de Man, 1908	<i>A. hailstonei</i> Coutière, 1905	D. M. and A. H. Banner 1982a
<i>Alpheus hailstonei</i> var. <i>paucispinata</i> A. H. Banner, 1953	<i>A. hailstonei</i> Coutière, 1905	D. M. and A. H. Banner 1982a
<i>Alpheus leviusculus</i> , var. Bate, 1888	<i>A. batesi</i> A. H. & D. M. Banner, 1964	A. H. and D. M. Banner 1964
<i>Alpheus lobidens polynesica</i> A. H. & D. M. Banner, 1975a	<i>A. lobidens</i> de Haan, 1844	D. M. and A. H. Banner 1981
<i>Alpheus malabaricus mackayi</i> A. H. Banner, 1959	<i>A. mackayi</i> A. H. Banner, 1959	A. H. and D. M. Banner 1975a

TABLE 2 (continued)

FROM	TO	REFERENCE
<i>Alpheus malleodigitus</i> , var. <i>gracilicarpus</i> de Man, 1909	<i>A. malleodigitus</i> (Bate, 1888)	A. H. and D. M. Banner 1966a
<i>Alpheus microstylus</i> var.? de Man, 1911	<i>A. microstylus</i> (Bate, 1888)	A. H. and D. M. Banner 1966a
<i>Alpheus obesomanus japonicus</i> Ortmann, 1890	<i>A. obesomanus</i> Dana, 1852	A. H. and D. M. Banner 1966a
<i>Alpheus pareuchirus</i> Coutière, 1905	<i>A. pareuchirus pareuchirus</i> Coutière, 1905	D. M. and A. H. Banner 1982a
<i>Alpheus pareuchirus</i> var. <i>imitatrix</i> de Man, 1909	<i>A. pareuchirus imitatrix</i> de Man, 1909	D. M. and A. H. Banner 1982a
<i>Alpheus pareuchirus</i> var. <i>Leucothea</i> de Man, 1911	<i>A. pareuchirus</i> Coutière, 1905	D. M. and A. H. Banner 1982a
<i>Alpheus richardsoni</i> Yaldwyn, 1971	<i>A. euphrosyne richardsoni</i> Yaldwyn, 1971	D. M. and A. H. Banner 1982a
<i>Alpheus Stanleyi</i> var. <i>dearmatus</i> de Man, 1910	<i>A. stanleyi</i> Coutière, 1908	D. M. and A. H. Banner 1979
<i>Alpheus strenuus</i> var. <i>angulatus</i> Coutière, 1905	<i>A. strenuus strenuus</i> Dana, 1852	A. H. and D. M. Banner 1966a
<i>Crangon bucephalus</i> var. Rathbun, 1914	<i>A. bucephalus</i> Coutière, 1905	D. M. and A. H. Banner 1982a
<i>Crangon gracilis</i> var. <i>simplex</i> A. H. Banner, 1953	<i>A. gracilis</i> Heller, 1862	D. M. and A. H. Banner 1982a
<i>Crangon langi</i> Schmitt, 1926	<i>A. euphrosyne langi</i> (Schmitt, 1926)	D. M. and A. H. Banner 1982a; the Banners later withdrew this subspecific designation (D. M. and A. H. Banner 1985)
Genus <i>Athanas</i> Leach, 1814		
<i>Arete dorsalis</i> var. <i>Pacificus</i> Coutière, 1903	<i>A. dorsalis</i> (Stimpson, 1860)	A. H. and D. M. Banner 1960a
<i>Arete maruteensis</i> , var. <i>salibabuensis</i> de Man, 1910	<i>A. dorsalis</i> (Stimpson, 1860)	A. H. and D. M. Banner 1960a
<i>Athanas dimorphus seedang</i> A. H. & D. M. Banner, 1966b	<i>A. dimorphus</i> Ortmann, 1894	D. M. and A. H. Banner 1973
Genus <i>Metalpheus</i> Coutière, 1908		
<i>Crangon hawaiiensis clippertoni</i> Schmitt, 1939	<i>M. rostratipes</i> (Pocock, 1890) [as <i>Alpheus clippertoni</i>]	A. H. and D. M. Banner 1964
Genus <i>Synalpheus</i> Bate, 1888		
<i>Alpheus neptunus</i> Dana, 1852	<i>S. neptunus neptunus</i> (Dana, 1852)	D. M. and A. H. Banner 1975
<i>Alpheus stimpsoni</i> var.? Schenkel, 1902	<i>S. stimpsonii</i> (de Man, 1888)	D. M. and A. H. Banner 1975
<i>Alpheus tumido-manus</i> Var. <i>gracili-manus</i> Paulson, 1875	<i>S. tumidomanus</i> (Paulson, 1875)	A. H. and D. M. Banner 1968a
<i>Synalpheus Bakeri</i> var. <i>Stormi</i> de Man, 1911	<i>S. fossor</i> (Paulson, 1875)	D. M. and A. H. Banner 1975
<i>Synalpheus carinatus</i> var. <i>binongcensis</i> de Man, 1909	<i>S. carinatus</i> (de Man, 1888)	A. H. and D. M. Banner 1968a
<i>Synalpheus carinatus</i> var. <i>ubianensis</i> de Man, 1909	<i>S. carinatus</i> (de Man, 1888)	A. H. and D. M. Banner 1968a
<i>Synalpheus charon obscurus</i> A. H. Banner, 1956	<i>S. charon</i> (Heller, 1861)	A. H. and D. M. Banner 1967
<i>Synalpheus fossor</i> , var. <i>propinqua</i> de Man, 1909	<i>S. fossor</i> (Paulson, 1875)	D. M. and A. H. Banner 1975
<i>Synalpheus hastilicrassus</i> var.? de Man, 1911	<i>S. hastilicrassus</i> Coutière, 1905	D. M. and A. H. Banner 1975

TABLE 2 (continued)

FROM	TO	REFERENCE
<i>Synalpheus hastilicrassus</i> , var. <i>acanthitelsoniformis</i> de Man, 1920	<i>S. hastilicrassus</i> Coutière, 1905	D. M. and A. H. Banner 1975
<i>Synalpheus neomeris</i> var. <i>streptodactylus</i> Coutière, 1905	<i>S. streptodactylus streptodactylus</i> Coutière, 1905	A. H. and D. M. Banner 1966a; the Banners later withdrew this subspecific designation (D. M. and A. H. Banner 1975)
<i>Synalpheus nilandensis</i> , var. <i>bandaensis</i> de Man, 1909	<i>S. nilandensis</i> Coutière, 1905	D. M. and A. H. Banner 1975
<i>Synalpheus Nilandensis</i> , var. <i>oxyceros</i> Coutière, 1905	<i>S. nilandensis</i> Coutière, 1905	D. M. and A. H. Banner 1975
<i>Synalpheus pachymeris cargadosi</i> Coutière, 1921	<i>S. pachymeris</i> Coutière, 1905	A. H. and D. M. Banner 1983
<i>Synalpheus paraneomeris</i> , var. <i>halmaherensis</i> de Man, 1909	<i>S. paraneomeris</i> Coutière, 1905	A. H. Banner 1953
<i>Synalpheus paraneomeris oxyceros</i> Coutière, 1909 [nomen nudum]	<i>S. paraneomeris</i> Coutière, 1905	A. H. Banner 1953
<i>Synalpheus paraneomeris</i> , var. <i>praedabunda</i> de Man, 1909	<i>S. paraneomeris</i> Coutière, 1905	A. H. Banner 1953
<i>Synalpheus paraneomeris prolatus</i> Coutière, 1909 [nomen nudum]	<i>S. paraneomeris</i> Coutière, 1905	A. H. Banner 1953
<i>Synalpheus paraneomeris</i> var. <i>prolatus</i> de Man, 1911	<i>S. paraneomeris</i> Coutière, 1905	A. H. Banner 1953
<i>Synalpheus</i> sp., varietas B de Man, 1897	<i>S. fossor</i> (Paulson, 1875)	D. M. and A. H. Banner 1975
<i>Synalpheus Stimpsoni</i> var. <i>Maldivensis</i> Coutière, 1905	<i>S. stimpsonii</i> (de Man, 1888)	D. M. and A. H. Banner 1985
<i>Synalpheus streptodactylus hadrungus</i> A. H. & D. M. Banner, 1966a	<i>S. streptodactylus</i> Coutière, 1905	D. M. and A. H. Banner 1975

contributions made by these two prolific scientists. I hope these tables will be helpful in interpreting the vast alpheid literature and applying the correct species names, which can be quite confusing without access to a great amount of literature.

DISCUSSION

The Banners looked at a large number of specimens from many localities. Over their careers, they established and described three new genera and 116 new species and subspecies, most of which are still considered valid (Table 1). This in itself is a tremendous accomplishment. However, at least equally important is the vast amount of revisionary work they did while studying the publications and type specimens of previous students of the Alpheidae (Tables 2, 3). They constantly re-

viewed and revised their opinions on the taxonomy and nomenclature of the family.

The Banners' lifelong study of the Alpheidae allowed a conformity in technique and comparisons, and a consistent style of describing species that is seldom found in systematics. Their study of original type material and familiarity with and understanding of the work of previous taxonomists added a depth to their revisionary work that is also seldom found.

Although the Banners took great care in describing and diagnosing species, they were reluctant to construct the keys that can be so helpful to those of us with less taxonomic understanding. They felt that keys constructed for incompletely known faunas are misleading (D. M. and A. H. Banner 1979). However, they did construct keys for some of the smaller genera (*Athanas* [A. H. and D. M. Banner 1960a], *Athanopsis* [D. M. and A. H.

TABLE 3
OTHER CHANGES MADE BY THE BANNERS

ACTION	REFERENCE
<i>Alpheopsis diabolus</i> A. H. Banner, 1956: name corrected to <i>A. diabolus</i>	A. H. and D. M. Banner 1964
<i>Alpheopsis?</i> <i>Euryone</i> de Man, 1910: transferred to genus <i>Neopalpheopsis</i>	A. H. Banner 1953
<i>Alpheopsis fissipes</i> Coutière, 1908: transferred to genus <i>Prionalpheus</i>	A. H. and D. M. Banner 1971
<i>Alpheopsis Sibogae</i> de Man, 1910: designated type species of <i>Nennalpheus</i>	A. H. and D. M. Banner 1981a
<i>Alpheopsis</i> sp. de Man, 1922: likely to be a new species	D. M. and A. H. Banner 1985
<i>Alpheus Alope</i> White, 1847: nomen nudum; indeterminate because of poor condition	A. H. and D. M. Banner 1977b
<i>Alpheus avarus</i> Fabricius, 1798: nomen dubium that should probably be suppressed, except that it is the type species of the genus <i>Alpheus</i>	D. M. and A. H. Banner 1982a
<i>Alpheus brevipes</i> Stimpson, 1860: neotype established	A. H. Banner 1953
<i>Alpheus bucephaloides</i> Nobili, 1905: lectotype selected	D. M. and A. H. Banner 1981
<i>Alpheus diadema</i> Dana, 1852: neotype established	A. H. Banner 1953
<i>Alpheus edwardsii</i> (Audouin, 1827[?1826]): neotype established	A. H. and D. M. Banner 1973
<i>Alpheus fasciatus</i> Lockinton, 1878: considered a nomen dubium	D. M. and A. H. Banner 1981
<i>Alpheus Galathea</i> White, 1847: nomen nudum; specimen too broken for identification	A. H. and D. M. Banner 1977b
<i>Alpheus macroskeles</i> Alcock & Anderson, 1894, 1899: name misspelled	D. M. and A. H. Banner 1979
<i>Alpheus macrosceles</i> in 1899	
<i>Alpheus Neptunus</i> White, 1847: nomen nudum; not <i>Synalpheus neptunus</i> (Dana, 1852)	A. H. and D. M. Banner 1977b
<i>Alpheus pacificus</i> Dana, 1852: neotype established	A. H. Banner 1953
<i>Alpheus Rhode</i> White, 1847: nomen nudum; species indeterminate because of lack of small chela	A. H. and D. M. Banner 1977b
<i>Alpheus savigny</i> Guérin, 1857: considered a nomen dubium	D. M. and A. H. Banner 1981
<i>Alpheus Shearmii</i> Alcock & Anderson, 1899: transferred to genus <i>Alpheopsis</i> and holotype redescribed	A. H. and D. M. Banner 1977a
<i>Alpheus tricuspidatus</i> Heller, 1861: considered a nomen dubium	D. M. and A. H. Banner 1985
<i>Arete</i> Stimpson, 1860: put in synonymy with genus <i>Athanas</i> Leach, 1814	A. H. and D. M. Banner 1960a
<i>Arete dorsalis</i> Stimpson, 1860: transferred to genus <i>Athanas</i> Leach, 1814	A. H. and D. M. Banner 1960a
<i>Arete dorsalis</i> var. <i>Indicus</i> Coutière, 1903: transferred to genus <i>Athanas</i> Leach, 1814	A. H. and D. M. Banner 1960a
<i>Athanas hasswelli</i> Coutière, 1908: the Banners believed that the name should be changed to <i>A. haswelli</i> to reflect the correct spelling of W. A. Haswell's name. Chace (1988), however, did not accept this change because there "seems to be no 'clear evidence of an inadvertent error' in the original publication"	D. M. and A. H. Banner 1973
<i>Athanas mascarenicus</i> Richters, 1880: questionably synonymized with <i>A. dorsalis</i> (Stimpson, 1860) until the type specimen is redescribed. Miya (1981) redescribed a syntype and agreed with the Banners' synonymy	A. H. and D. M. Banner 1960a
<i>Betaeus australis</i> Stimpson, 1860: neotype established	D. M. and A. H. Banner 1973
<i>Betaeus trispinosus</i> Stimpson, 1860: neotype established [type of genus <i>Alpheopsis</i>]	D. M. and A. H. Banner 1973
<i>Crangon</i> Weber, 1795: A. H. Banner did not wish the name <i>Crangon</i> to be suppressed in favor of <i>Alpheus</i>	A. H. Banner 1951
<i>Crangon nanus</i> A. H. Banner, 1953: name changed to <i>Alpheus huikau</i> A. H. Banner, 1959, which is a junior synonym of <i>Metalpheus rostratipes</i> (Pocock, 1890)	A. H. Banner 1959
<i>Crangon hawaiiensis</i> Edmondson, 1925: transferred to <i>Metalpheus</i>	A. H. and D. M. Banner 1975a
<i>Neopalpheopsis hiatti</i> A. H. Banner, 1953: type species of genus <i>Neopalpheopsis</i> [synonym of <i>N. euryone</i> (de Man, 1910)]	A. H. Banner 1953
<i>Prionalpheus triarticulatus</i> A. H. & D. M. Banner, 1960b: type species of genus <i>Prionalpheus</i> A. H. & D. M. Banner, 1960b	A. H. and D. M. Banner 1960b
<i>Salmeoneus</i> Holthuis, 1955: genus redefined	D. M. and A. H. Banner 1981
<i>Synalpheus biunguiculatus</i> (Stimpson, 1860): neotype established	A. H. Banner 1953
<i>Synalpheus neptunus</i> (Dana, 1852): neotype established	D. M. and A. H. Banner 1972; A. H. and D. M. Banner 1974

TABLE 3 (continued)

ACTION	REFERENCE
<i>Synalpheus tumidomanus</i> var. <i>exilimanus</i> Coutière, 1909: subspecies name a mistake in transcription of <i>Alpheus tumido-manus</i> Var. <i>gracili-manus</i> Paulson, 1875	A. H. and D. M. Banner 1968a
<i>Thunor baculifer</i> (Coutière, 1908): transferred to <i>Alpheus</i> (= <i>A. idiocheles</i>)	A. H. and D. M. Banner 1966a
<i>Thunor idiocheles</i> (Coutière, 1905): transferred to genus <i>Alpheus</i> ; A. H. Banner (1956) had previously transferred this species to <i>Thunor</i>	A. H. and D. M. Banner 1966a
<i>Thunor microscaphis</i> A. H. Banner, 1959: transferred to genus <i>Alpheus</i>	A. H. and D. M. Banner 1966a
<i>Thunor rathbunae</i> (Schmitt, 1924): transferred to genus <i>Alpheus</i> ; Chace (1972) did not agree with this transfer	A. H. and D. M. Banner 1966a

Banner 1981], *Metalpheus* [D. M. and A. H. Banner 1982a], *Prionalpheus* [A. H. and D. M. Banner 1960b, 1971], *Salmonaeus* [D. M. and A. H. Banner 1981], and the *Obesomanus* group of *Alpheus* [A. H. and D. M. Banner 1966a]). They also constructed locality keys for Hawaii (A. H. Banner 1953), the Malayo-Thai area (A. H. and D. M. Banner 1966b), and Australia (D. M. and A. H. Banner 1973, 1975, 1982a). As always, care should be exercised in using keys because they may not be current and/or not include all species.

The Banners had planned to prepare a monograph of the family Alpheidae (A. H. and D. M. Banner 1983), a plan that probably would have included a complete set of keys (D. M. Banner, pers. comm.) as well as the other information they had accumulated through their studies. Though it is unfortunate that they were unable to complete this important summary of their lifelong studies, the vast amount of information they accumulated is available in their many publications.

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