

SIX NEW SPECIES OF *ARETAS* (HEMIPTERA: MIRIDAE) FROM
THE SOCIETY ISLANDS AND ONE FROM THE
PHILIPPINES*

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The genus *Aretas* was founded by Distant¹ for a single species, *A. imperatorius* from Ceylon. The second species, *A. sanguinarius* Dist.² was described from the Seychelles Islands. In 1935,³ I described a third species, *A. rubroscutellatus* from the Samoan islands, but placed it as a variety of *A. sanguinarius* Dist.

In working over a collection of Miridae from Bernice P. Bishop Museum, six additional species of *Aretas* have been recognized among material collected in the Society Islands by A. M. Adamson. Study of this material reveals that the male genital claspers furnish good characters for the separation of species within the genus. While the present series of specimens is rather limited, the material is sufficient to indicate that color characters are rather definite for each species, and may be used for separation of species in a key.

Among material from the Philippine Islands sent me some years ago by Professor C. F. Baker, a beautiful new species has been recognized and named *A. bakeri* in honor of that indefatigable worker. Judging by the records of known species, the genus *Aretas* is typically of island distribution in the Pacific Ocean. It is interesting to note that six species are recognized from the Society Islands, but not a single representative is to be found in the material on hand for study from the Marquesas Islands.

Aretas adamsoni, new species (fig.1,a).

Male. Length 3.2 mm., width 1.21 mm. *Head*, width .65 mm., vertex .30 mm. at front margins of eyes; top of head very slightly convex, without longitudinal sulcation although with a faint triangular impression on base of vertex. *Rostrum*, length 1.17 mm., reaching to middle of hind coxae. *Antennae*: segment I, length .43 mm., cylindrical or perceptibly thicker near base, dark reddish brown to blackish, pale pubescent with a few erect hairs in length equal to diameter of segment; II, 1.3 mm., slender, yellowish, tinged with reddish at base, with fine pale pubescence; III, .64 mm., slender, pale; IV, .52 mm., pale. *Pronotum*, length .34 mm., width at base .82 mm., slightly sinuately concave on basal margin, calli scarcely evident, disk slightly convex, pleura moderately inflexed.

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¹ Distant, W. L., Ann. Mag. Nat. Hist., VIII, 4:451, 1909.

² Distant, W. L., Linn. Soc. London, Trans., 16:175, pl. 13, fig. 12, 1913.

³ Knight, H. H., Insects of Samoa, Hemiptera, (2), 206, 1935.

Color pale yellowish, head except vertex, lateral one fourth of pronotal disk and extending over the sides slightly, basal angles of clavus and corium, edge of embolium, diamond-shaped spot on apex of clavi, quadrate patch on apical area of corium, basal edge and apex of cuneus, veins in membrane, bright red; first antennal segment dark reddish brown to blackish. Sparsely clothed with fine pale pubescence. Genital structures distinctive, male claspers as shown in the figure.

Female. Length 3.4 mm., width 1.25 mm. *Head*, width .61 mm., vertex .34 mm. *Antennae*, segment I, length .44 mm.; II, 1.25 mm.; III, .66 mm.; IV, .61 mm. Slightly larger and more robust than the male but very similar in structure, color, and pubescence.

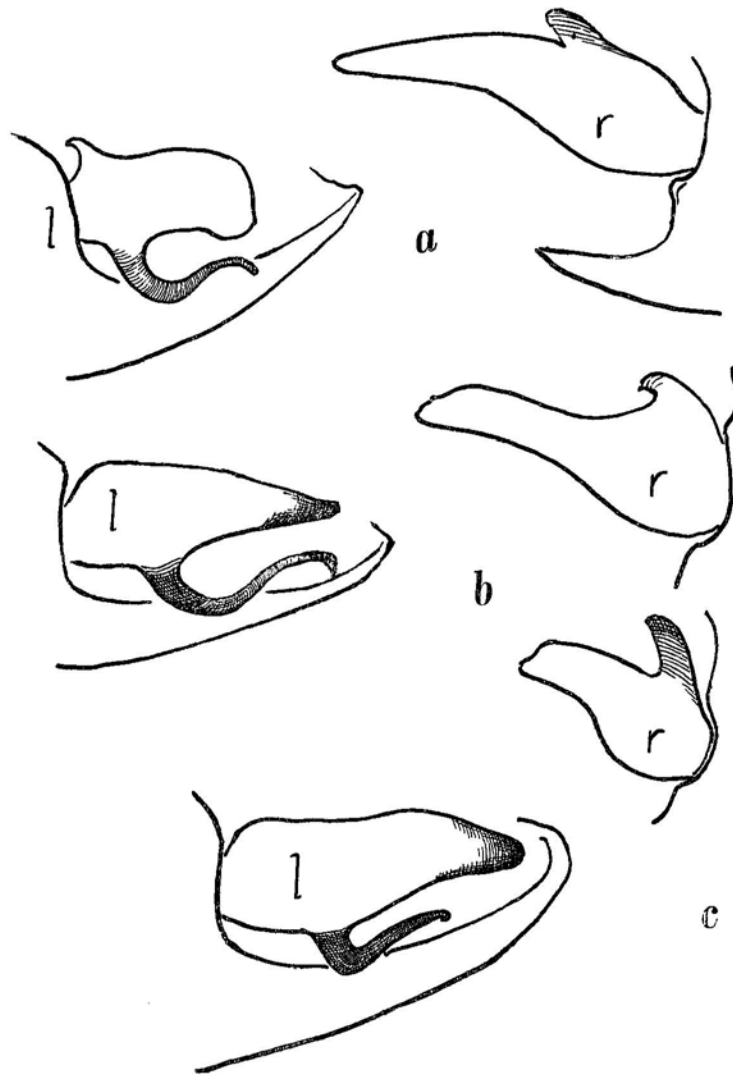


FIGURE 1.—Male genital claspers of new species of *Aretas*: a, *A. adamsoni*; b, *A. rubroclavus*; c, *A. nigribasicornis* (l=left and r=right clasper).

Coloration suggestive of *A. imperatorius* Dist. but smaller in size and with different arrangement of red color pattern; genital structures distinctive.

Tahiti, Society Islands. Holotype male (Bishop Museum), allotype female, one male and two female paratypes collected by A. M. Adamson, Papenoo Valley, 10 km. from sea, alt. 150 m., Oct. 23, 1928.

Aretas tahiticus, new species (fig. 2, *b*).

Male. Length 2.9 mm., width 1.17 mm. *Head*, width .62 mm., vertex .26 mm.; top of head scarcely convex, impressions not evident. *Rostrum*, length 1.13 mm., extend-

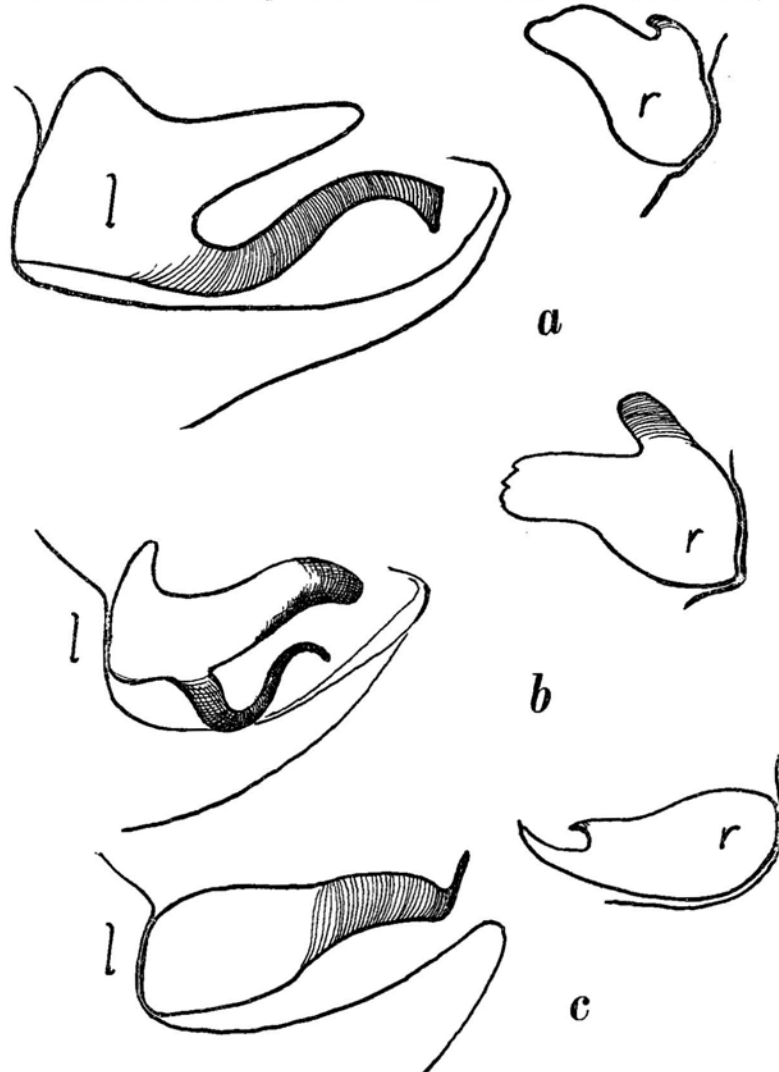


FIGURE 2.—Male genital claspers of new species of *Aretas*: *a*, *A. flavus*; *b*, *A. tahiticus*; *c*, *A. bakeri* (*l*=left and *r*=right clasper).

ing slightly beyond hind coxae. *Antennae*: segment I, length .43 mm., nearly cylindrical, dark red, pale pubescent, two or three erect, pale bristles on inner margins, length of bristles greater than diameter of segment; II, 1.17 mm., cylindrical, more slender than segment I, pale with reddish tint; III, .56 mm., pale; IV, .48 mm., pale. *Pronotum*, length .35 mm., width at base .84 mm., only slightly sinuate at base, disk nearly flat, front margin slightly elevated, calli outlined by an impressed margin.

Color pale yellowish, head except on vertex and lower face, lateral one fourth of pronotal disk and extending slightly over sides, basal angles of clavus and corium, tip of clavus, spot on inner apical angles of corium, and veins in membrane, bright red; first antennal segment dark red, the cuneus uniformly yellowish, membrane pale brownish. Sparsely clothed with fine pale pubescence. Genital structures distinctive, male claspers as shown in figure.

Female. Length 3.1 mm., width 1.21 mm. *Head*, width .58 mm., vertex .30 mm. *Antennae*: segment I, length .43 mm.; II, 1.17 mm.; III, .60 mm.; IV, broken. Slightly larger and more robust than the male but very similar in structure, color, and pubescence.

Allied to *A. adamsoni*, and coloration very similar but differs distinctly in structure of the male genital structures; distinguished by its smaller size, longer rostrum, and cuneus without a red apex.

Tahiti, Society Islands. Holotype male, allotype female, collected by A. M. Adamson, Hitiaa, alt. 1,000 ft., 3 miles from the sea. In Bishop Museum.

Aretas tahiticus* var. *rubromarginatus, new variety.

Male. Length 3.5 mm., width 1.26 mm. *Head* width .65 mm., vertex .30 mm. *Rostrum*, length 1.12 mm., reaching to middle of hind coxae, therefore shorter than in *A. tahiticus*. *Antennae*: segment I, length .45 mm.; II, 1.34 mm.; III, .60 mm.; IV, .52 mm. *Pronotum*, length .143 mm., width at base .91 mm. Male genital structures nearly identical with those of *A. tahiticus*, not sufficiently different to erect a species on this basis.

Red coloring more extensive than in *A. tahiticus*; embolium and outer margin of corium except apex, from thence extending across on inner apical angles of corium, and apex of cuneus, bright red. Antennal segment I dark red, base of II reddish, the pronotum and head with red as in *A. tahiticus*.

Structurally very near if not identical with *A. tahiticus* but color pattern strikingly different; perhaps only a color variety; however it may represent a good species. With the study of large series of specimens and knowledge of host plants we may be able to determine the correct status of such forms.

Tahiti, Society Islands. Holotype male, collected by A. M. Adamson, Hitiaa, 4 miles from sea, alt. 1,000 ft., Nov. 20, 1929.

Aretas nigrbasicornis, new species (fig. 1, c).

Male. Length 3.5 mm., width 1.34 mm. *Head*, width .74 mm., vertex .38 mm. at front margins of eyes, top of head rather flat, frons abrupt above base of tylus. *Rostrum*, length 1.17 mm., extending slightly beyond hind coxae. *Antennae*: segment I, length .52 mm., black, pale pubescent, length of a few hairs equal to diameter of segment, slightly thicker (.086 mm.) on basal third and tapering apically; II, 1.66 mm., cylindrical, .06 mm. thick, yellow, sometimes tinged with red, clothed with fine pale pubescence; III, .78 mm., slender, pale; IV, .74 mm., pale. *Pronotum*, length .45 mm., width at base 1 mm., slightly sinuately concave on basal margin, calli evident as slight swellings, disk only very slightly convex, pleura moderately inflexed.

Color uniformly pale yellowish, antennal segment I black, eyes dark, tip of cuneus fuscous; clothed with simple pale pubescence; tibial spines pale. Membrane clear, veins pale yellowish. Genital structures distinctive, male claspers as shown in figure.

Female. Length 4.3 mm., width 1.5. *Head*, width, .73 mm., vertex .43 mm. *Antennae*: segment I, length .58 mm.; II, 1.64 mm.; III, .90 mm.; IV, broken. Large and more robust than the male but very similar in structure, color, and pubescence.

Distinguished by the pale yellowish color and black first antennal segment; probably greenish yellow in life.

Tahiti, Society Islands. Holotype male in Bishop Museum, collected by A. M. Adamson, Papeari, Nov. 9, 1928. Allotype female, collected by A. M. Adamson, Papeari, alt. 500 ft., Nov. 9, 1928, in "dead leaves of *Musa fehi*". Paratype female, collected by A. M. Adamson, Papeari, alt. 600 ft., Nov. 9, 1928.

Aretas flavus, new species (fig. 2, a).

Male. Length 4.02 mm., width 1.38 mm. *Head*, width .75 mm., vertex .34 mm.; vertex with a median longitudinal sulcation, widened a bit just before the basal edge. *Rostrum* (embedded in glue), reaching upon hind coxae. *Antennae*: segment I, length .52 mm., slightly thicker near base, pale pubescent, set with eight or more erect clear bristles, the length of each equal to or exceeding thickness of segment, color uniformly pale, a touch of reddish on extreme tip; II, 1.69 mm., slender, cylindrical, pale, very finely pale pubescent; III, .82 mm., pale; IV, .56 mm., pale. *Pronotum*, length .45 mm., width at base 1.04 mm.; basal margin slightly concave, lateral margins distinct, straight, disk very slightly convex, calli appear as slight swellings outlined by an impressed line; mesoscutum broadly exposed.

Color uniformly pale yellowish, perhaps with greenish tint in life; cuneus with apex fuscous, a minute point of red at tip of embolium. Body and legs clothed with rather long pale hairs and pubescence, more prominent on embolium and lateral margins of pronotum. Membrane and veins pale, perhaps tinged with dusky. Genital structures distinctive, male claspers as shown in figure.

Allied to *A. nigrbasicornis*, but distinguished by the uniformly pale antennae and by structure of the male genital claspers.

Tahiti, Society Islands. Holotype male in Bishop Museum, collected by A. M. Adamson, Papenoo Valley, 10 km. from sea, alt. 150 m., Oct. 23, 1928.

Aretas rubroclavus, new species (fig. 1, b).

Male. Length 3.5 mm., width 1.3 mm. *Head*, width .69 mm., vertex .31 mm.; top of head rather flat, a fine longitudinal groove on median line; frons abrupt above base of tylus. *Rostrum*, length 1.18 mm., barely extending to posterior margins of hind coxae. *Antennae*: segment I, length .52 mm., black, clothed with fuscous pubescence; II, 1.57 mm., slender, cylindrical, pale yellowish, more or less reddish near base, pale pubescent; III, .69 mm., pale; IV, .56 mm., pale. *Pronotum*, length .45 mm., width at base .92 mm.; basal margin broadly concave, lateral margins slightly concave, disk moderately convex, calli outlined by an impressed line, slightly convex, pleura moderately inflexed.

Color pale yellowish, antennal segment I black, eyes brown, face reddish before eyes, lora and spot above base of antennae blackish; lateral margins of pronotal disk and extending slightly over sides, clavus except bordering scutellum, corium bordering clavus, base of embolium, apical half of cuneus, spot on paracuneus, and veins of membrane sanguineous to dark red; membrane dusky, distinctly fuscous within areoles and

bordering veins. Body clothed with prominent, erect, pale pubescent hairs, almost bristle-like on margins above. Genital structures distinctive, male claspers as shown in figure.

Structurally rather closely allied to *A. flavus*, but easily distinguished by red on pronotum, clavus, and cuneus.

Moorea, Society Islands. Holotype male in Bishop Museum, collected by A. M. Adamson, Opunohu Valley, two miles from sea, Nov. 30, 1928. Three male paratypes taken with the type.

***Aretas rubrocuneatus*, new species.**

Female. Length 3.85 mm., width 1.43 mm. *Head*, width .78 mm., vertex .39 mm.; yellowish, median line of vertex and margins of lora red, eyes brown. *Rostrum*, length 1.34 mm., just attaining posterior margins of hind coxae. *Antennae*: segment I, length .47 mm., clothed with erect, pale pubescent hairs, pale yellowish, a touch of red on apex; II, 1.56 mm., slender, cylindrical, pale yellowish, reddish on extreme tip; III, broken. *Pronotum*, length .45 mm., width at base 1.04 mm.; basal margin broadly sinuate, leaving mesoscutum broadly exposed, lateral margins straight, disk moderately convex, anterior margin and calli slightly elevated. Coloration pale to yellowish, cuneus, paracuneus, veins of membrane, basal half of scutellum except median line, spot on base of clavus, and more or less on mesoscutum, sanguineous. Membrane clear with tinge of brownish.

Allied to *A. flavus* but distinguished by the red on cuneus, paracuneus, scutellum, and base of clavus.

Tahiti, Society Islands. Holotype female in Bishop Museum, collected by A. M. Adamson, Tuauru River, one mile from sea, alt. 50 ft., Sept. 5, 1928.

***Aretas bakeri*, new species (fig. 2, c).**

Male. Length 4.7 mm., width 1.7 mm. *Head*, width .87 mm., vertex .35 mm.; vertex nearly flat, slightly impressed on median line, sanguineous, vertex and middle of frons pale, eyes reddish brown. *Rostrum*, length 1.5 mm., reaching to hind margins of posterior coxae. *Antennae*: segment I, length .47 mm., slightly thicker (.13 mm.) near base, sanguineous, more yellowish on apex, clothed with several erect, dusky, bristle-like hairs; II, 2.05 mm., cylindrical, honey yellow, pale pubescent; III, .69 mm., yellow; IV, .47 mm., dusky yellow. *Pronotum*, length .56 mm., width at base 1.29 mm.; basal margin very slightly sinuate, lateral margins distinct, nearly straight, disk moderately convex, calli outlined by an impressed line, slightly convex, depressed between; mesoscutum broadly exposed.

Ground color yellowish, first antennal segment, sides of head, broadly on lateral margins of pronotal disk, middle of mesoscutum, median basal triangle on scutellum, clavus except apically, a large spot on apex of corium and base of cuneus, tip of cuneus and veins in membrane, sanguineous; spot on apex of corium becoming dark red to fuscous. Membrane pale, rather evenly tinged with dusky, anal area and vein fuscous. Genital structures distinctive, male claspers as shown in figure.

Female. Length 4.8 mm., width 1.7 mm. *Head*, width .80 mm., vertex .43 mm. *Antennae*: segment I, length .48 mm.; II, 1.99 mm., slightly thicker apically, bearing a few erect pale hairs; III, .65 mm.; IV, broken. *Pronotum*, length .52 mm., width at base 1.25 mm. Slightly more robust than the male but very similar in structure and coloration.

This species keys out in the couplet with *A. rubroscutellatus* Knight by virtue of having reddish on the scutellum, but it is easily distinguished from

all other known species by the larger size, color aspect, and structure of the male genital claspers.

Baguio, Benguet, Luzon, Philippine Islands. Holotype male in my collection, collected by C. F. Baker. Allotype taken with the type. Paratypes: male, taken with types; female, Dapitan, Mindanao, Philippine Islands, collected by C. F. Baker.

Key to Species

1. Antennal segment I predominantly pale.....2
Antennal segment I red or black.....4
2. Cuneus distinctly red3
Cuneus pale, dusky on apex; antennae and body chiefly pale.....**A. flavus**
3. Lateral margins of pronotum, inner margins of corium, embolium, and tip of clavus sanguineous**A. imperatorius** Dist.
Lateral margins of pronotum, corium, and embolium except apex and clavus base, pale yellowish**A. rubrocuneatus**
4. Scutellum pale6
Scutellum red or marked with red.....5
5. Scutellum, clavus, and pronotum red.....**A. rubroscutellatus**
Scutellum pale, red only on middle of base; median one third of pronotum and apex of clavus pale.....**A. bakeri**
6. Antennal segment I reddish to dark red, lateral margins of pronotum red.....7
Antennal segment I black, pronotum and hemelytra pale, tip of cuneus fuscous**A. nigribasicornis**
7. Cuneus pale or with apex only red.....9
Cuneus red on apical half, or at least on inner membrane margin.....8
8. Cuneus red on inner margin bordering membrane; basal half of corium red, apical area only pale.....**A. sanguinarius** Dist.
Cuneus with apical half red; corium red bordering the red clavus but with pale on basal half bordering embolium.....**A. rubroclavus**
9. Cuneus red on apex.....10
Cuneus uniformly pale.....**A. tahiticus**
10. Corium with red on base extending along outer margin, thence transversely to apex of clavus, tip of clavus red.....**A. tahiticus** var. **rubromarginatus**
Corium pale, base only and a quadrate spot bordering tip of clavus, red; a diamond-shaped red spot on apical area of clavus.....**A. adamsoni**