

Two new Species of *Anagyrus* (Hymenoptera: Encyrtidae)

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An examination of coconut palms on the islands of Saipan, Anatahan, and Alamagan in the Marianas during 1948 revealed infestations of *Pseudococcus saipanensis* Shirawa. This mealybug was found to be parasitized by a new species of *Anagyrus* which is described as follows:

Anagyrus saipanensis Doutt, sp. n.

Female.—Head dorsal view twice as wide as long, anterior margin gently concave between orbits, occipital margin less concave, nearly straight; inner orbits gently diverging anteriorly from posterior ocelli, more strongly divergent posteriorly; frontovertex slightly longer than wide, ratio 6:5, occupying slightly more than one-third width of head; ocelli in equilateral triangle, lateral ocelli slightly more than their own diameter from orbits and equidistant from occipital margin. Head frontal view slightly wider than high, 13:11; eyes hairy, descending three-fourths depth of head; cheeks short, convergent below. Antennal sockets closer to oral margin than to orbits, sockets with upper margins tangential to basal ocular line; scrobes slightly convergent above, separated by rounded facial prominence. Frontovertex, face with minute hairs, very minutely alutaceous, yellowish. Ocelli deep red, eyes purplish black; lower cheeks black.

Antenna as in Fig. 1D; antennal scape flattened, ventral expansion moderate for genus, over twice longer than wide, slightly longer than pedicel and first funicle segment combined, white with diagonal black band across middle and small black areas at base and apex. Pedicel over twice longer than wide, longer than any funicle segment, narrower than funicle segments 5, 6; basal half black, distal half white. Funicle joints increasing slightly in width and decreasing slightly in length distad; funicle 1 black, funicle segments 2, 3, 4, white, funicle 5 variable, usually brown, but nearly white in one specimen, funicle 6 dark brown to black. Club slightly wider than funicle, equal in length to first two funicle segments combined, shorter than scape, shorter than three preceding segments, yellowish.

Pronotum short, testaceous, lighter than mesoscutum; scutum alutaceous, with numerous short hairs, with distinctive sculpturing in specimens mounted in gum damar, Fig. 1E, posterior margin with slight median bulge almost covering tips of axillae which are nearly contiguous; scutellum slightly wider than long, apex sharply rounded, nearly pointed. Abdomen as long as head and thorax combined, narrowly triangular, surface sculptured with fine reticulations; ovipositor shortly exerted. Dorsum of thorax and abdomen light brown, except as noted.

Forewings hyaline, extending to tip of abdomen, densely covered with small setae except for speculum divided centrally into 2 parts by transverse setaceous band of about 6 rows of setae; submarginal vein with row of stiff erect bristles, terminates distally at hyaline break before marginal vein; costal cell present but narrow; stigmal vein longer than marginal and postmarginal veins combined.

Legs white except for testaceous hind coxae; tarsi lightly testaceous, apical segment darker. Spur of middle tibiae slightly shorter than basitarsus, the latter as long as four succeeding segments together.

Male.—Head dorsal view twice as wide as long, anterior margin gently convex between orbits, occipital margin slightly concave; frontovertex wider than long, wider than transverse width of eyes; head frontal view with inner margins of eyes more divergent ventrally than in female, face relatively broader; color and sculpturing as in female.

Thorax similar to female; abdomen very short, triangular. Antenna as in Fig. 1C; scape moderate for genus; pedicel small, normal; first two funicle segments subequal, longer than following segments, funicle segments 3 and 5 subequal, longer than 4 and 6,

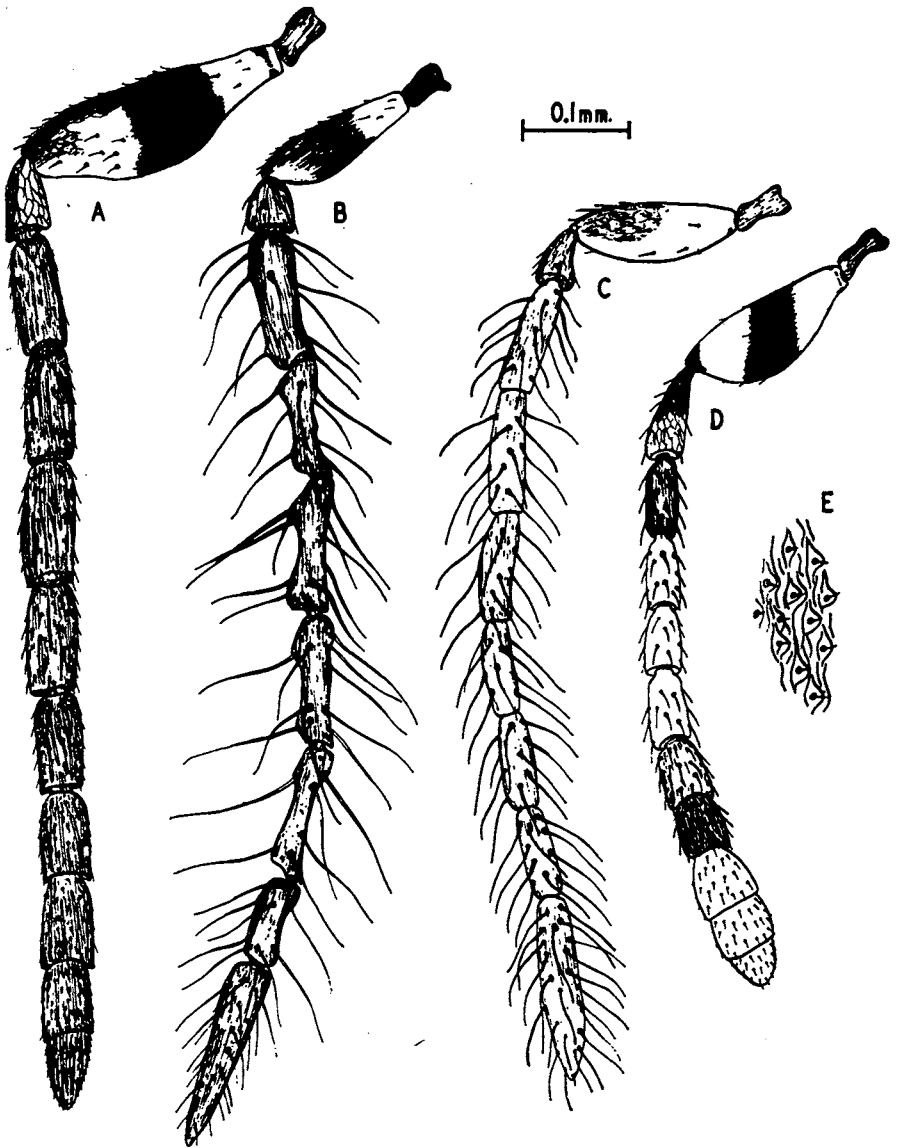


Fig. 1. A. Antenna of female *Anagyrus smithi*. B. Antenna of male *A. smithi*. C. Antenna of male *A. saipanensis*. D. Antenna of female *A. saipanensis*. E. Detail of sculpturing on scutum of female *A. saipanensis*.

the shortest funicle segments; club as long as combined lengths of 2 preceding segments, pointed, no wider than average width of funicle. Funicle with long stiff, brittle setae. Radicle black; scape white except for black area on apical part of dorsal surface; pedicel, funicle, and club dark brown.

Forewings similar to female, but relatively broader; speculum interrupted by narrower setaceous band.

From 5 ♀♀ and 7 ♂♂ reared from *Pseudococcus saipanensis* Shirawa at Alamagan, Marianas Islands, August 4, 1948, R. L. Doutt.

Types and paratypes in the collection of the Division of Biological Control, University of California. A series of paratypes deposited in the entomological collection of the Hawaiian Sugar Planters' Association, Honolulu.

A. saipanensis sp. n. apparently belongs in the subgeneric group including *saccharicola* Timberlake and *swezeyi* Timberlake, from which it may be most easily distinguished by antennal characters. It has fewer affinities with the African *subproximus* group. The antennal characters readily separate *saipanensis* from all the species of Japan given in the key by Ishii (1928).

A common mealybug on cypress around the San Francisco Bay area of California is *Spilococcus implicatus* Ferris. This mealybug is parasitized by *Cirrhencyrtus ehrhorni* (Timberlake), *Pseudaphycus angelicus* (Howard), and by at least one new species of *Anagyrus* which is described as follows:

Anagyrus smithi Doutt, sp. n.

Female.—Head dorsal view over two and one-half times as wide as long, anterior margin convex between orbits, occipital margin concave; frontovertex wider than long occupying about one-half width of head. Posterior ocelli separated by greater distance than that from anterior ocellus to either posterior ocellus. Posterior ocelli located near occipital margin, farther from compound eyes. Head frontal view about as wide as high; eyes descending slightly over one-half depth of head; cheeks relatively long. Antennal sockets about equal distance from oral margin and margin of compound eyes, sockets with upper margins slightly above basal ocular line, sockets separated by rounded facial prominence. Face with reticulate sculpturing. Frontovertex yellowish orange, ocelli red, eyes greyish purple, hairy, cheeks and face black.

Antenna as in Fig. 1A; scape flattened, nearly three times as long as wide, subequal to length of club, white with conspicuous black band across middle and black area extending from band on dorsal surface to apex. Pedicel dusky with black dorsal surface, about equal in length to funicle segment 6. Funicle segments and club dusky, funicle segments of equal width but decreasing in length apically, so that funicle 1 is noticeably longer than funicle 6. Club and funicle of equal width.

Pronotum short, black dorsally becoming orange at lateral margins. Scutum, axillae, scutellum yellowish orange. Axillae large, prominent. Scutellum with two longitudinal rows of three conspicuous black setae near apex. Dorsal aspect of metanotum and propodeum dark. Lateral and ventral areas of thorax yellowish orange.

Wings hyaline. Forewings with hairless streak extending obliquely and posteriorly from beneath stigmal vein towards basal portion of wing. This speculum interrupted by discal cilia before reaching either stigmal vein or posterior edge of wing. Stigmal vein slightly longer than marginal and postmarginal combined. Submarginal vein with distinct hyaline break before attaining marginal vein. Posterior wing with narrow costal cell; discal cilia beneath venation sparse, fine, but coarse and abundant beyond venation to wing apex.

Legs pallid except tibiae and tarsi of hind legs, foretarsi, and last tarsal segments of middle legs, which are dusky. Fore tibia no longer than combined lengths of fore-tarsal segments. Basal tarsal segment on fore and hind legs about equal to combined length of any other two tarsal segments. On middle legs basal tarsal segment relatively long, as long as combined length of following 4 tarsal segments, almost twice length of saltatorial spur.

Abdomen, propodeum, and metanotum concolorous.

Male.—Head dark brown to black. Dorsal structures of thorax similarly colored, but scutum and scutellum with blue and purple reflected highlights. Lateral and ventral aspects of thorax as in female. Abdomen dark brown. Legs colored as in female. Antenna as in Fig. 1B.

This species runs out near *A. nigritus* (Howard) in the key to the species of *Anagyrus* occurring in California published by Compere (1947). *A. smithi* is readily distinguished from *nigritus*, however, by noticeably wider forewings and the obvious color differences.

From 4 ♀♀ and 6 ♂♂ reared from *Spilococcus implicatus* Ferris at Albany, California, November 1, 1950 by L. Andres. Types and paratypes in the collection of the Division of Biological Control, University of California. This species is named in honor of Professor Harry S. Smith.

LITERATURE

- Compere, Harold. 1947. A report on a collection of Encyrtidae with descriptions of new genera and species. Univ. Calif. Publ. Ent. 8 (1):1-24.
- Ishii, Tei. 1928. The Encyrtinae of Japan. Bull. Imp. Agr. Exp. Sta. Japan 3 (2): 79-160.