

A NEW MOTH FLY OF THE GENUS *PSYCHODA*
FROM CRABHOLES ON THE KENYA COAST

(Diptera: Psychodidae)

By CHARLES L. HOGUE¹

ABSTRACT: A new species of Psychodidae, *Psychoda martini*, is described and figured. Material consists only of adult males and females collected on the Kenya Coast from land crab burrows of two species, *Cardisoma carnifex* and *Sesarma meinerti*.

The number of *Psychoda* species known from the vast Ethiopian Region is estimated to be 40, including available undescribed species (Satchell, 1955, Tonnoir, 1939). This appears to be far less than what the actual fauna must be judging from the size of the genus in other much smaller and ecologically less diverse areas, viz: Papuan Region, 80; Philippines, 51; Borneo, 38; Micronesia, 23 (Quate, 1967: 211). It is, therefore, not surprising that another new species was recognized, especially since it comes from a coastal locality in contrast to the inland and mountain origins of its African cogeners.

Psychoda martini Hogue, new species

Figures 1-7

DESCRIPTIONS (terminology mainly after Quate, 1955: 108-114).

Adult female:

General.—Typical, unicolored *Psychoda*.

Size.—Average for *Psychoda*; measurements in mm as follows (= means lengths; ranges in parentheses; N = 10 = random sample from type series).

Wing length 1.55 (1.53-1.60)

width .64 (.55-.68)

Legs	fore	mid	hind
femur	.33 (.29-.37)	.39 (.31-.435)	.39 (.36-.415)
tibia	.29 (.22-.34)	.51 (.46-.54)	.57 (.475-.635)
tarsus 1	.25 (.21-.27)	.27 (.24-.30)	.24 (.215-.27)
2	.08 (.07-.09)	.08 (.065-.09)	.08 (.065-.085)
3	.06 (.05-.065)	.06 (.05-.06)	.06 (.05-.065)
4	.05 (.045-.06)	.05 (.04-.05)	.05 (.045-.05)
5	.06 (.05-.07)	.06 (.05-.065)	.06 (.055-.06)
Palpus 1	.06 (.05-.075)		
2	.13 (.10-.15)		
3	.16 (.13-.17)		
4	.19 (.165-.21)		

¹Senior Curator of Entomology, Los Angeles County Museum of Natural History.

Coloration.—Uniformly grayish brown without markings or pattern of any kind.

Head (Figs. 3, 6).—Eye bridges four facets wide, separated by a width of four facets. Antenna (Fig. 3) 16 segmented, per cent proportions 100: 67: 177: 140: 133: 133: 130: 127: 123: 117: 117: 117: 110: 73: 3: 3: 3. Scape 1.5 times as long as broad, pedicel spherical, flagellar segments with necks approximately 1.5 times longer than bulbs, except 13 in which neck is slightly shorter than bulb; 14-16 clearly separated; a single small sensory cone on 13; a pair of Y-shaped sensory filaments on each of segments 3-13. Palpal segment per cent proportions 100: 218: 266: 316.

Wing.—2.42 times as long as wide. Both wing forks complete, ratio of $R_{2+3}:R_3 = .75$, $M_{1+2}:M_2 = .38$.

Genitalia.—As figured (Fig. 2); subgenital plate shallowly U-shaped, basal part broad.

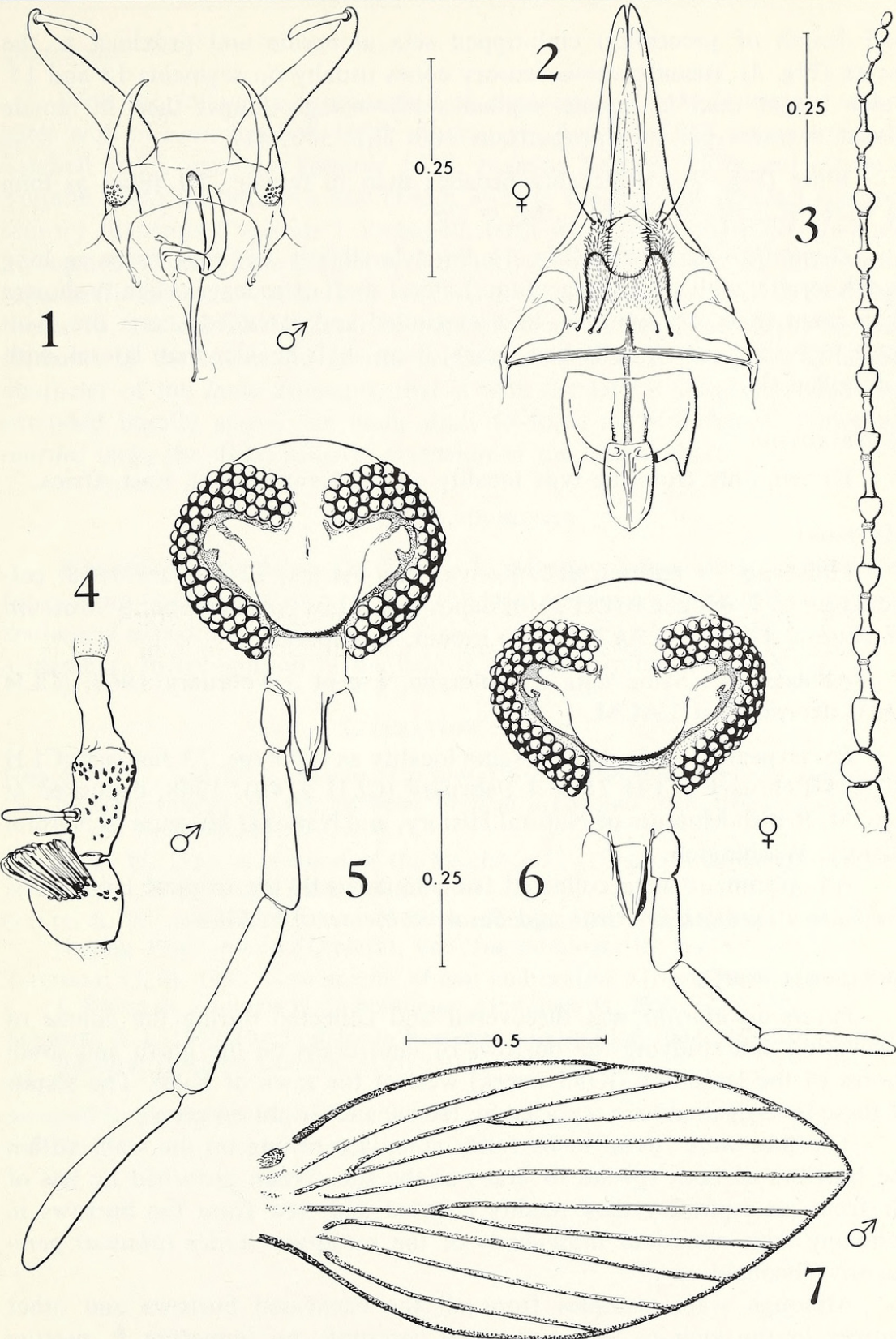
Adult male:

General.—Similar to female in coloration and basic structure.

Size.—Slightly smaller than female; measurements in mm as follows (= means lengths; ranges in parentheses; N = 10 = random sample from type series):

Wing length 1.44 (1.34-1.58)		width .70 (.64-.75)	
Legs	fore	mid	hind
femur	.34 (.315-.365)	.39 (.355-.40)	.40 (.365-.43)
tibia	.25 (.235-.38)	.49 (.455-.515)	.56 (.50-.60)
tarsus 1	.29 (.265-.30)	.29 (.270-.295)	.26 (.245-.270)
2	.09 (.08-.09)	.09 (.075-.095)	.08 (.07-.09)
3	.06 (.055-.065)	.06 (.055-.065)	.06 (.055-.065)
4	.05 (.045-.055)	.05 (.04-.05)	.05 (.045-.05)
5	.06 (.055-.065)	.06 (.055-.06)	.06 (.055-.065)
Palpus 1	.08 (.075-.09)		
2	.21 (.175-.23)		
3	.28 (.25-.29)		
4	.33 (.275-.365)		

Head (Figs. 4, 5).—Eye bridges separated by a width of two facets. Pedicel of antenna provided with an isolated, drosomesal dense patch of 25 to 30 slender scales with sharply recurved tips (Fig. 4); basal flagellar segment with a conspicuous dorsal, round-tipped seta projecting perpendicularly from its base at about the proximal third of the bulb, and a second smaller (one-



FIGURES 1-7. *Psychoda martini*, new species. Fig. 1. genitalia of male; Fig. 2. genitalia of female; Fig. 3. antenna of female (sensory filaments not shown); Fig. 4. pedicel and basal flagellar segment of antenna of male, mesal view; Fig. 5. head of male; Fig. 6. head of female; 7. wing of male.

half length of preceding) club-tipped seta alongside and proximal to the larger (Fig. 4). Inconspicuous sensory cones usually on segments 13 and 15. Palps longer than in female, segments increasingly longer than in female distad, segment per cent proportions 100: 261: 350: 412.

Wing (Fig. 7).—Noticeably broader than in female, 2.1 times as long as wide. $R_{2+3}:R_3 = .58$, $M_{1+2}:M_2 = .39$.

Genitalia.—As figured (Fig. 1). Surstyle slightly less than twice as long as 9th tergite, with single tenaculum. Lateral shaft of aedeagus slightly shorter than main shaft, tip subulate, base expanded and extended across the main shaft to form an oval, collarlike flange; main shaft heavier than lateral, with a rounded tip.

DISTRIBUTION

Known only from the type locality on the Kenya Coast, East Africa.

MATERIAL

Holotype ♂: Kilifi Creek, Kenya, East Africa; 23 January 1968; collected by C. L. Hogue (CLH 210); deposited in Los Angeles County Museum of Natural History (LACM); slide mount, in euparal.

Allotype ♀: Same data as holotype, except 3 February 1968; (CLH 211); deposited at LACM.

Paratypes: 15 ♂♂, 41 ♀♀; same locality as holotype, 23 January (CLH 210), 3 February (CLH 211), 4 February (CLH 214B), 1968; deposited at LACM, British Museum of Natural History, and National Museum of Natural History, Washington.

All specimens were collected from burrows of the tropical land crabs, *Cardisoma carnifex* (Herbst) and *Sesarma meinerti* de Man.

BIOLOGICAL NOTES

Psychoda martini was discovered and collected during the course of excavating and studying the burrows of land crabs on the north and south shores of the large bay (Kilifi Creek) west of the town of Kilifi. The results of these investigations are reported by Hogue and Bright (in press).

The flies were found to be fairly abundant resting on the walls within the burrows of both species of crabs at the site. When disturbed by jets of air from an aspirator, they readily crawled and flew from the burrows in company with abundant individuals of the mosquito *Aedes* (*Skusea*) *pembaensis* Theobald.

Although water samples from all the excavated burrows and other sources in the vicinity were examined carefully, no immature *P. martini* were discovered.

All collections were made during midday and afternoon hours of warm humid days. Seasonally, the time was in the mid-dry period of the year.

DIAGNOSIS

With the following combination of characters, *Psychoda martini* segregates with *filipenis* Satchell 1955, *scuticopenis* Satchell 1955, *angustisternata* Satchell 1955, *maxima* Tonnoir 1939, *reducta* Tonnoir 1939 and *modesta* Tonnoir 1935 in Satchell's key (1955: 345) to the tropical African species: sensory filaments ("ascoids") Y-shaped, both wing forks complete, antenna 16-segmented in which the three diminutive terminal segments are clearly separated from each other and with sensory cones on at least one of segments 13, 14 and 15. It disagrees with all these in the shape of the various elements of the male and female genitalia, being most like *filipenis* in the character of the male aedeagus, that is with the lateral shaft expanded and extended basally across the main shaft to form an oval flange. However, *martini* lacks the distal filiform extension of the lateral shaft.

ACKNOWLEDGMENTS

I would like to thank Dr. Purvis L. Martin of San Diego, California, for making possible the discovery of this new species by sponsoring a general zoological expedition to Kenya, in January-February of 1967 of which I was a member. In recognition of his help it is estimably named for him.

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