Psorophora (Janthinosoma) mathesoni, sp. nov. for "varipes" of the Southeastern U.S.A.[1]

John N. Belkin and Sandra J. Heinemann[2]

Coquillett (1904) had before him 5 females when he described *Conchyliastes varipes.* When Stone and Knight (1955) examined Coquillett's material they found 2 females bearing type labels, one from Mississippi, the other from Mexico. The latter, from Las Penas [now Puerto Vallarta, Jalisco], Mexico, 7-18-03, A. Duges, bearing Coquillett's determination label, was designated as the lectotype by Stone and Knight.

Since the publication of the Mosquitoes of the Americas by Dyar (1928) the name *varipes* has been applied to the species of *Psorophora* from the U.S.A. which has the mesonotum with a broad longitudinal median stripe of dark scales bordered laterally by whitish scales and only the fourth segment of the hindtarsus white-scaled. On 15 August 1972 Bruce Knudsen collected a male of a species of *Psorophora* with the general characteristics of *varipes* near Novillero, Nayarit, Mexico. The junior author prepared a genitalia slide from this specimen and noted that the genitalia did not conform with those of *"varipes"* from the Southeastern U.S.A. but appeared to be essentially identical with those of *Psorophora (Janthinosoma) ferraroi* Duret, 1971, described from El Salvador and represented in our collection by 2 males from near Porto Somoza, Nicaragua. Nothing was done at this time because we believed that it would be better to wait until more material became available. In late October 1975 Dr. Ronald D. Ward of the Medical Entomology Project received a letter from Dr. A. Diaz Najera of the Instituto de Salubridad y Enfermedades Tropicales, Mexico, D.F. with a request to examine the enclosed drawings of the male genitalia of a species of *Psorophora* which appeared to be *varipes* on external characters but did not agree in genitalic characters with the description and illustration in Carpenter and LaCasse (1955). Dr. Ward sent us a copy of the drawings for our opinion and we have reexamined the problem and have concluded that *ferraroi* Duret, 1971 is a synonym of *varipes* Coquillett, 1904 (NEW SYNONYMY) and that the species in the U.S.A. is without an available name.

Therefore we are describing a new species for the so-called *"varipes"* of the Southeastern U.S.A. As no males are available for the Central and Southwestern U.S.A. and the Atlantic slope of Mexico we do not know if the new species extends into this region. *Psorophora varipes* has been found on the Pacific slope from Mazatlan, Novillero, San Blas, Puerto Vallarta, Manzanillo and Acapulco area in Mexico; Corrizo, Guatemala; El Salvador; and Porto Somoza, Nicaragua. It seems very unlikely that *varipes* occurs in Panama or anywhere in South America. This species appears to be associated with mangrove areas and its breeding sites may be in such areas and possibly may contain brackish water.

Psorophora (Janthinosoma) mathesoni, sp. nov.

TYPES: *Holotype* male with genitalia mounted on slide (740702-75) and *Allotype* female with associated pupal skin on slide (SE256), Annie Pond, Florence, Alabama, 25 Aug 1942, J. N.

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Belkin [USNM]. *Paratypes:* 6 females (SE250,251,258-262) with associated pupal skins, 11 males, 1 female same locality, date and collector as holotype and allotype; 1 male (SE314) with associated pupal skin, 11 males (including 6 labelled 273), 8 females (SE312,313,315-320) with associated pupal skins, 1 female same locality and collector as holotype and allotype but 26 Aug 1942; 50 females same locality and collector as holotype and allotype but 25-27 July 1941.

FEMALE (Carpenter and LaCasse, plate 39). *Wing* about 3.0-3.5 mm. In general as described and figured in Carpenter and LaCasse (1955:127-128) for *"varipes"* with the following significant additional details. *Head:* Vertex with broad median longitudinal stripe of white to golden broad decumbent scales and numerous golden short narrow forked scales, followed laterally by a narrow stripe of deep purple broad decumbent scales; sides and lower surface of head capsule with golden broad decumbent scales. Proboscis slender, long, about 1.25 of forefemur; labium predominantly with deep purple scales. Palpus slender, about 0.2 of proboscis, 3-segmented, with deep purple scales. Antenna slightly shorter than proboscis; mesal surface of torus with large patch of white or bluish white broad scales. *Thorax:* Integument shining, moderate to dark brown or blackish. Mesonotum with broad median longitudinal stripe of dark broadened lanceolate scales with slight dark purple tinge, stripe usually wider caudad of scutal suture; sides of dark stripe margined with white to light golden broad scales; anterior promontory with a few light scales on each side of median line; prescutellar space bare, bordered laterally and anteriorly with variable number of white to light golden broad scales. Paratergite bare. Scutellum with white to light golden broad scales on all lobes, more numerous on midlobe. Pleuron with white broad decumbent scales on following areas:*apn;* scattered on upper part of *ppn;* large patch on *ppl;* broad line on upper part of *pcx;* rarely a few scattered on *ssp* and *psp;* on *stp* confluent lower and upper patches extending on lower *pra,* leaving only a triangular bare area in lower part of *stp;* on *mep* lower and anterior patches confluent and widened in upper part. *Pst* with large patch of similar scales. *Legs:* Forecoxa and midcoxa with white broad scales, hindcoxa with a few small narrow golden scales apically. Trochanters with small golden scales. Femora variably golden-scaled from base, most extensively on hindleg, distal part with deep purple scales except for white-scaled knee spots, poorly developed on foreleg. Tibiae with deep purple scales on all legs, tarsi with similar scales except for white-scaled segment 4 of hindtarsus, extent of white scaling apparently variable. *Wing:* All dorsal scales deep purple. *Haltere:* Stem pale, knob with golden scales. *Abdomen:* Laterotergite and posterior part of tergite 1 with white or whitish scales. Tergites II-VII predominantly with deep purple scales except for lateral patches of white to light golden scales, with straight border mesad from base to apex on II, expanded triangularly mesad on apex on III-V, and forming a short broad transverse apical band on VI,VII, the one on VII with darker scales. Sternites II-VI largely golden-scaled, with progressively broader transverse basal band of deep purple scales on distal segments, sternite VII usually with deep purple scales only.

MALE: In general similar to the female in ornamentation but with abdominal sternites II-VII entirely pale-scaled. Size smaller than in female; femora with dark-scaled areas more extensive. Palpus exceeding proboscis by nearly entire length of segments 4 and 5 which are porrect or only slightly upturned; apex of segment 3 usually with only 2 moderately long bristles, segments 4 and 5 with short bristles only. Antennal flagellum moderately densely plumose. Claws not studied. Abdominal segments with only a few long hairs, more numerous on distal segments.

MALE GENITALIA (Fig. 1). In general as described and figured in Carpenter and LaCasse (1955:128) with the following significant and additional details. *Segment IX:* Tergite short; lobe poorly differentiated, with about 10 thin, short setae. Sternite very strongly developed, rounded

apically, usually with 3,4 very short apical setae on each side of midline. *Sidepiece:* More or less cylindrical and without distinct lobes; mesal membrane developed only in basal part; setae and scales as shown in figure. *Claspette:* Width of stem about one-sixth of length; mesal surface of apex with 1 specialized recurved seta strongly widened before its middle and with long acutely pointed apex; mesal and sternal surface of distal half of stem with about 15 setae, the 2 proximal longer and stouter than the following, 4 of these flattened and with frayed broadened apex, others thin and simple. *Clasper:* As figured; with numerous short thin setae; spiniform subapical. *Proctiger:* Cercal setae very small, usually 6,7.

PUPA (Fig. 1). As figured. Pigmentation moderate to heavy, without conspicuous pattern but venter of cephalothorax and middle of abdominal segments V-VII distinctly darker than rest. Chaetotaxy as in Barr and Barr (1969), allowing for slightly different terminology. All the specimens examined by Barr and Barr were from Annie Pond, Florence, Alabama not from Wilson Dam as stated.

LARVA. Not studied because no individual or progeny rearings are available.

SYSTEMATICS. *P. mathesoni* is most readily separated from *varipes* by the following features of the male genitalia: (1) lobe of tergite IX with longer setae; sternite IX with fewer and shorter setae apically; (2) sidepiece without a dense clump of very long bristles near apex on dorsal surface; mesal half of dorsal surface with short setae; (3) claspette shorter, its stem wider; apex of claspette with 1 specialized recurved seta widened before middle and with long acute apex; distal half of mesal surface of stem with about 15 setae, 4 with frayed apex; without other specialized setae; (4) clasper markedly flattened and widened beyond base, recurved laterad. Both males and females are usually distinct from those of *varipes* by the absence of *ssp* scales which are always numerous in *varipes*. The immature stages of *varipes* are completely unknown and those of *mathesoni* are poorly known. Therefore it is impossible to differentiate the pupae and larvae of the 2 species at this time.

Considerable variation in the extent of light scaling of hindtarsal segment 4 has been noted in *"varipes"* by Carpenter and LaCasse. This is not present in our material from northern Alabama. Although it is possible that such variation occurs in *mathesoni*, the possibility that another species is involved should not be overlooked.

REFERENCES

Barr, R. A. and S. Barr. 1969. Mosquito Studies (Diptera, Culicidae). XIII. Pupae of the genus *Psorophora* in North America and Puerto Rico. Am. Entomol. Inst., Contrib. 4(4):1-20.

Carpenter, S. J. and W. J. LaCasse. 1955. Mosquitoes of North America. Berkeley, Univ. Calif. Press. 360 p.

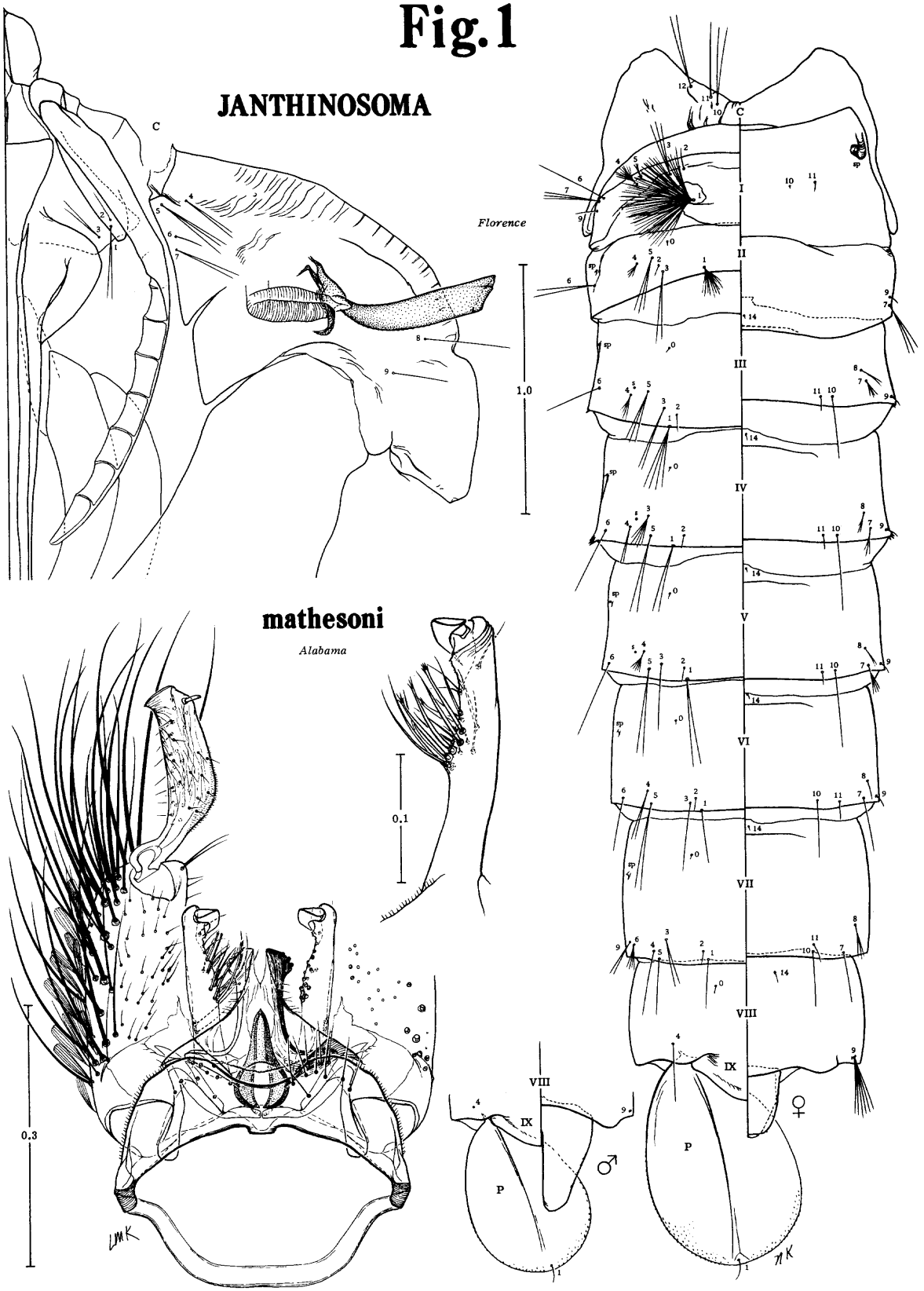
Coquillett, D. W. 1904. Several new Diptera from North America. Can. Entomol. 36:10-12.

Duret, J. P. 1971. Cinco especies nuevas de Culicidos Neotropicales (Diptera-Culicidae). Neotrop. 17:15-28.

Dyar, H. G. 1928. The mosquitoes of the Americas. Wash., Carnegie Inst. (Publ. 387). 616 p.

Stone, A. and K. L. Knight. 1955. Type specimens of mosquitoes in the United States National Museum. I, The genera *Armigeres, Psorophora,* and *Haemagogus.*

Fig. 1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