

Extract from Senevet and Abonnenc, 1938, translated from French into English by George C. Steyskal, 1985.

Quelques anophelines de la Guyane Française. Arch. Inst. Pasteur Alger. 16:488-512.

4. Anopheles (Nyssorhynchus) ininii sp. n.

a) Adult

Female unknown.

Description of male.

ANOPHELES FILE

HEAD: Brown; bearing very long erect gray scales in middle part of occiput, slightly split apically. Some white scales anteriorly along eye margins, and some long white hairs projecting from among them.

Proboscis: straight. covered with dark decumbent scales. Palpi slightly longer than proboscis, bearing very long lanceolate scales, a little bristly at extreme base, there a little shorter and more rounded, and decumbent along the rest of the segment. Some pale scales intermixed toward the apex of this part, which also bears some very long setae. Last 2 segments dilated, clavate, covered with pale scales and equally pale setae, except a blackish line along outer border and another transverse line of black scales where the 2 segments meet.

Antennae rather pale, also hairs of the verticils.

THORAX: grayish brown, with 3 velvety black spots, rather small, 2 of them on the sides toward the middle of the mesonotum and the other just before the scutellum, onto which it seems to extend.. Entire surface of mesonotum covered with elongate yellowish scales, a little longer and whitish anteriorly on median line and on prothoracic lobes, where also may be seen a small group of 5-6 deep black lanceolate oval scales. Some long setae along posterior margin of scutellum.

ABDOMEN: brown, posterolateral corners of segments with usual tufts of dark scales. Dorsum with groups of scales forming triangles pointed toward base of segment and composed of scales a little longer and considerably broader than those of thorax. Some rather pale long hairs complete this ornamentation.

Lower side of abdomen here and there with a few white scales among the black ones.

LEGS: pale, covered with quite small brown decumbent scales, leaving some parts of the pale surface, especially on femurs and tibiae, exposed. Each femur

at base with white annulus and a few pale spots.

Protarsus 1 dark; protarsus 2 white, yellowish in apical half; protarsus 3 pale in apical 3/4; protarsi 4 and 5 pale at tips; claws bidentate.

Mesotarsi 1 and 2 with short indistinct annuli.

Metatarsus 2 with basal annulus covering about 15% of the segment; metatarsus 5 with black annulus on basal half.

WING: Costa dark but very largely white-scaled, so that dark parts are reduced to the 3 classical spots visible with the bare eye. White spots located as follows: B1 large; B2 just as large, more than twice the size of the black spot separating them; B3 smaller, almost equal to black spot separating it from B2; M1 and M2 virtually equal to black spot separating them. The latter 3 spots together equal one of the 2 remaining large black spots. S.C. also equal to one of the large black spots around it. Subapical a little shorter, followed by another spot near tip.

1st longitudinal pale as far as 1st black costal spot, there with spot shorter than costal spot. Small black spot at level of spot separating M1 and M2, then reduced a/black spot below 2nd large black costal spot. Farther toward apex it reproduces the costal spots.

2nd longitudinal almost wholly pale; a few black[#]scales below 2nd large costal spot and 1 or 2 others at level of white subcostal spot; a few others also at fork; 2 small agglomerations on each branch; tip pale.

3rd longitudinal pale with 2 black spots, one at base a little beyond cross-veins and one subapical.

4th longitudinal pale in whole length except a few black scales here and there; one large black spot just before fork and a little^Y above it; one subapical on each branch.

5th longitudinal equally pale; 2 black spots on anterior branch and one on posterior.

6th longitudinal pale with black subbasal spot and one subapical.

All preceding scales lanceolate, very large on 1st and 2nd longitudinals, shorter on 4th and 5th.

Halteres yellowish.

Length of body exclusive of proboscis: 3 mm. 5; of proboscis: 2 mm; of wing: 3 mm.

b) Male hypopygium.

Coxite elongate, 2.5 times as long as wide, swollen in basal 1/3, then tapering to rounded tip; clasper of about same length, ending in very elongated 3rd segment inserted subapically; a seta nearly as long as last segment, slender, inserted a little before it.

Parabasal spine inserted on a very protruding tubercle, almost a small column, the spine itself almost twice the basal column, relatively slender, bent slightly hookwise at end. Accessory spines inserted toward the most swollen part of the coxite, inner one very flattened and curved into slight hook, outer one a little longer and finer, both appearing thinner than those of tarsimaculatus.

Seta of inner edge a little shorter than preceding ones, inserted a little more apicad, long and filiform; near apex of coxite another present, slightly different and seemingly a 2nd inner marginal seta.

Harpagones with ventral lobe as usual bearing 3 slender, elongated S-curved spines; dorsal lobe joins ordinarily with its homologue to form median cone a little surpassing phallosome and almost devoid of hairs at apex, on sides with 2 large tubercles furnished with very abundant hairs longer than median lobe.

Fig. 3. A. ininii, male hypopygium. A, B - dorsal lobe of harpagones; C - left half of hypopygium; D, E - aspects of coxite.

These 2 lobes differ markedly from those of tarsimaculatus or strodei, because in the latter case they are directed posteriorly rather than anteriorly. The hairs are considerably longer than those of tarsimaculatus.

Fig. 4. Accessory spines of coxite. A - A. tarsimaculatus; B - A. ininii.

Anal membrane markedly exceeding median lobe. Phallosome seems ^{very} strongly

c) Larva

Head elongate; fronto-clypeus with emarginate margins posteriorly forming very sharp median point. Hindmargin of head pigmented as far as level of sutural setae. Distinct median spot not surpassing anteriorly the same sutural setae; farther anteriorly, at level of frontal setae, and slightly behind them, with transverse band.

Clypeal setae:

Anterior: inner a little approximated, about as far apart as half distance between outer setae; all 4 long, very strong, and simple, except possibly some small branches toward middle.

Posterior ? (SIC).

Frontal setae: long and strongly branched.

Sutural setae: very strong, 6 to 7 branches.

Antennae: pigmented, bearing strong spicules, short and pointed.

Mental plate: with one large median tooth, large and a little pointed; 3 lateral teeth and one basal tooth, short and little farther away.

Thorax: Dorsal prothoracic setae anterior.

1: palmate seta with 12 leaflet.

2: powerful, with a dozen branches on each side.

Metathoracic: 1, transformed into rudimentary palmate seta formed of 14 leaflets, long, slender, and pointed.

Fig. 5. Anopheles ininii. A - head of larva; B - comb of 8th segment; C - dorsal seta of nymph.

Pleural setae:

Prothoracic: anterior and posteroventral setae long, strong, and simple. Posterodorsal very strong, shorter, and bifurcate at some distance from base.

Metathoracic: anterior setae long, strong, and simple; posteroventral considerably shorter and more slender, trifurcate. Posterodorsal still shorter and simple.

Abdomen: Segments 2 to 8 with 7 pairs of palmate setae, little developed on segment 2; on segment 5, for example, setae formed of 24 leaflets, lightly pigmented as if striped, with long points.

Lateral setae: On segments 1, 2, and 3 with 6 strong, slightly branched setae, but nearly as long and more slender and simple on the following segments.

Fig. 6. Anopheles ininii. Swimming bladder of nymph: at right, terminal seta of bladder and spine of 8th segment more enlarged.

Dorsal plate: irregular on segment 1, oval on following segments; larger on segment 8. Also found are 2 or 3 small posterior plates as if fused to posterior margin of each dorsal plate.

Comb of 8th segment formed of 4 large teeth and 13 small ones; all denticulate, the small ones all the way to the tip.

d) Nymph

The cast skin of the nymphs of this species has not seemed to us to merit any further description than the accompanying figures.

The type of this species consists of 2 males, their genital armature, and their larval and nymphal skins mounted in preparations. It is preserved under No. G.998 in the Laboratory of Parasitology in the Faculty of Medicine of Algeria. A paratype is also preserved in the same laboratory under No. G.998 S.

The differences between this species and those closest to it are given in the dichotomous key at the end of this paper.

The type locality is St.-Elie Mines, French Guiana, in water at artificial dam, 7-2-38.

5. An. (Nyss.) sancti Elii n. sp.

a) Adult.

Description of male.

Head, at rear with oval, dark brown scales, farther forward with some lanceolate white scales, especially near the inner margin close to the eyes; more

medially and anteriorly these scales replaced by whitish ones extending forward and outwardly between the eyes.

Palpi with 1st segments very elongate, 2 terminal segments capitate. Clubs pale except broad band on outer side and row of black scales at base of segments; L scales black on 1st segment in shape of elongate racquet, a little bristly toward base, more decumbent in apical part? A pale part towards middle of segment seems at first glance at the type to be only a denuded space, but the presence of definite ^{pale} scales shows that it is a very broad whitish annulus.

Antennae pale brown (setae and verticils).

Proboscis dark brown, at base bearing some scales ^{that are} lanceolate and little narrower and more bristly than those of the palpi.

Thorax. Mesonotum in anterior part with 2 bare dark areas, paramedian and separated by median scaled area not surpassing posteriorly middle of mesonotum; posteriorly with 2 other more widely separated and broader bands extend ^{from} middle to ~~the~~ scutellar region; one deeper black spot in median prescutellar space; remaining surface of mesonotum a little more yellowish and covered with scales, these laterally yellowish white, broad, almost fusiform, especially in middle part; farther posteriorly and toward median line more elongate, especially anterior to midline forming small tuft mixed with some pale setae that extend over the head.

PLATE XLV:

Wing of Anopheles ininii n. sp.

Wing of Anopheles sancti Elij n. sp.

Each anterolateral part of mesonotum also with small tuft of fusiform white and black scales.

Scutellum laterally with some white fusiform scales.

~~P~~leura and coxites deep brown, with some fusiform whitish scales, especially on coxites.

Abdomen dark brown, very hairy, abundantly covered dorsally with yellowish

lanceolate or fusiform scales intermixed with some similar black scales. The usual tufts of black scales in posterolateral corners of segments broad, almost racquet-shaped; ventrally with some broad whit^{ish} fusiform or almost racquet-shaped scales.

Legs generally dark brown, wⁱth small pale annulus at base of fore- and midfemora, a little broader on hindfemur, where a black basal annulus is also present.

Protarsus 1 with 2 small yellowish annuli: one at tip and one at base; protarsus 2 yellowish in apical 1/3; protarsus 3 yellowish in apical 2/3. Claws unidentate.

Mesotarsus 2 and 3 with very small indistinct yellowish annulⁱ.

Metatarsus 2 black in basal 1/4, otherwise white, as also 3 and 4; 5 black in basal half, pure white apically.

Wing. Costa with B1 and B2 very large, 3 x size of black spot between them; B3 about size of latter black spot; M1 and M2 a little larger than black spot between them; these 3 spots together about equal to each of the 2 large black basal costal spots. Subcostal spot and following black spot[#] about equal to mentioned black spots. Subapical spot divided into 2 by slightly smaller black spot. Fringe dark, pale spot a apex of each vein, including 6th.

Subcostal and 1st longitudinal pale up to 1st costal spot, where there are black spots somewhat smaller, especially at 1st longitudinal. Scales here short and broad. Intermediate spots and 2nd large costal spot equally produced, but shorter, on 1st longtiudinal; thereafter this vein reproduce^s the costal spots.

2nd longitudinal originating at level of black intermediate spot; entirely pale but bearing following black spots: one at base, one below 2nd black costal but smaller, one before fork, and 2 on each branch. Scales of these spots lanceolate.

3rd longitudinal bearing lanceolate scales, one minute black spot of 3 or 4 scales at base and one subapical.

4th longitudinal white or pale with short fusiform scales at base, more elong-

ated toward apex; one very large black spot before fork, 2 on anterior branch, and 1 on posterior branch.

5th longitudinal with short, white, racquet-shaped scales on basal 1/3, fusiform apically; black spot of racquet-shaped scales a little before fork; 2 small spots on anterior branch at each side of posterior crossvein; one small black spot at tip of each branch.

Fig. 7. Anopheles sancti Elii. Dorsal lobe of harpagones.

6th longitudinal with white scales plainly swollen at base, one subbasal black spot and one subapical.

Halteres yellowish brown at level of stem, club more brownish.

Length exclusive of proboscis 3 mm.

Length of wing 3 mm.

b) Male hypopygium.

Coxite elongated, about 3 times as long as broad. Clasper almost as long, strongly curved inwardly at tip; last ^{segment} segment elongated, subterminal with one thin, slender seta inserted a little before last segment,

Parabasal spine inserted on small, strongly pigmented column; spine longer than basal column, little widened, incurved and with apical hook. Accessory spines larger than in A. ininii, approaching those of tarsimaculatus. Seta of inner edge as in A. ininii, subapical seta also.

Ventral lobe of harpagones of type usually found in Nyssorhynchus, with 3 S-curved appendices.

Dorsal lobe highly specific; prolonged on sides into 2 separated lobes, bristly with short stiff seta; toward apical half both lobes fuse on median line into 2 folded expansions recalling those of A. bachmani. These 2 expansions mark the tip of the phallosome, which is strongly chitinized laterally.

Paraprocts very strongly chitinized. Anal membrane as if truncate at tip.

The type of this species consists of 1 male specimen with hypopygium mounted separately; it is preserved in the collections of the Laboratory of Parasitology

of the Faculty of Medicine of Algeria under no. G 999.

Type locality: St. Elie Mines, French Guiana, in water behind artificial dam,
7 February 1938.

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