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THE OCCURRENCE OF *ANOPHELES MARTERI* IN SYRIA.

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This Anopheline was first found in Syria in the larval stage on 30th August 1941. Up to the time of writing, 11th October 1941, adults and larvae have been taken on several occasions. Isolated larvae have been bred to the adult stage, and larval and pupal pelts preserved. Through the courtesy of Professor S. Adler and Dr. O. Theodor, of the Hebrew University at Jerusalem, I was able to consult the literature regarding the distribution of this species and to confirm its identification. The discovery of *Anopheles marteri* in Syria is a new record.

In their original description (Senevet & Prunelle, 1927) the authors omit one or two details; for example, they do not mention the pale fringe scales at the apex of the wing, and they say that the larva has no palmate hairs on the thorax. These statements are corrected in a subsequent paper (Senevet, 1932); a later publication (Senevet, 1935) gives a full description of adult, larva, and pupa. The egg is described by Hadjinicolaou (1938) who recorded the species from Greece. A Russian paper with a summary in English (Keshish'yan, 1938) describes a new species (*A. sogdianus*) which the author says is near *A. marteri*. This paper was not seen in the original. A description of *A. marteri* as it occurs in Syria follows :—

Adult.—Female : palpi dark brown, smooth, unbanded. Vertical tuft present, with creamy coloured scales. Mesonotum greyish brown, with a faint median dark longitudinal line, ashy grey on each side of line, no scales, hairs only. Femora and tibiae dark. Hind tarsi with no pale bands. Wings unspotted. Apex of wing with a pale fringe spot. Pale fringe spots absent elsewhere. Abdomen with hairs only. Cerci with hairs only.

Male : nothing special to note in external characters. Hypopygium with two parabasal spines; inner, a little shorter but about the same thickness as outer, bent at tip; outer, straight, not bent or hooked; one internal spine about middle of coxite; harpagones with three flattened spines; phallosome long, narrow, with a large number of leaflets.

Pupa.—Paddle narrowing towards apex, where paddle-hair arises; no black spot at tip; a fringe of long hairs on margin except near the bases; length of fringe hairs one-half to three-quarters length of paddle-hair; paddle-hair stout, slightly curved with very small hook at tip; accessory paddle-hair very short, simple, or with one or two branches. Spine short and blunt; III minute; IV–VII increasing in length; VIII with 8–12 branches, some branches may be split into two, accessory hair simple or bifid. Hair B as long as or a little longer than segment, 4–8 branches, some branches may be split into two or three. Hair C about as long as segment; IV–V with 8–10 branches; VI–VII with 4–7 branches. Hair C1 on V1 very short, about one-eighth as long as C, fine, bifid.

Larva.—Fronto-clypeal markings very patchy, indistinct and sometimes absent. Inner clypeal hairs with bases nearly touching, simple. Posterior clypeal hairs simple. Outer clypeal hairs simple. Frontal hairs weak, short, reaching only to bases of posterior clypeals, 4–6 branches. Post-frontal hairs short, simple, or bifid. Apical antennal hair often simple, may have two or three branches, longer than blades. Shaft hair near base, 1–4 branches. Shoulder hairs : inner, ½ length of middle, about nine branches, tubercle inconspicuous; middle, fairly well-developed, 8 branches, tubercle distinct. Propleural hairs three, long, simple; mesopleural two, long, simple. Metapleural hairs two, long, simple. Basal spines small. Thoracic palmate hairs present, leaflets without shoulders, produced into fine filaments,

about 14 leaflets. Abdominal palmate hairs ; I an ordinary branched hair ; II–VII fully developed, about 23 leaflets with shoulders and long terminal filaments. Tergal plates : I wider than II ; II–VII increasing in width ; VIII considerably wider and deeper than VII ; one accessory plate only. Saddle hair thin, simple, shorter than normal, only about as long as or even shorter than the saddle itself, base on saddle. Pecten with 18–24 teeth.

Egg.—" Uniformly black and resembles in some degree that of *A. claviger* (*bifurcatus*). It may be distinguished by the very large floats, which are more than three-fourths of the total egg-length ; the middle of the float at its broadest central part is one and one-half times the width of the ventral surface of the egg, which is seen between the two floats. The number of ribs, counted in the floats of 10 eggs, averaged 26, varying from 23 to 29 ribs per float. The intercostal membrane of the float structure of *A. marteri* is moderately ridged or rough, while that of *A. claviger* (*bifurcatus*) is smooth " (Hadjinicolaou).

Some characters by which *A. marteri* may be distinguished from *A. claviger* and *A. algeriensis* :—

	claviger	*algeriensis*	*marteri*
Adult			
Vertical tuft	present	absent	present
Mesonotal tuft ...	present	absent	absent
Mesonotal clothing ...	golden hairs or scales	long dark hairs	long dark hairs
Apex of wing	fringe scales dark	fringe scales dark	fringe scales pale
Larva			
Fronto-clypeal markings	spots	bands	indistinct
Anterior clypeal hairs	sometimes barbed	sometimes barbed	always simple
Posterior clypeal hairs	branched	branched	simple
Frontal hairs	long	long	short
Abdominal palmate hairs	no filaments	no filaments	long filaments
Pupa			
Spine A	pointed	pointed	blunt
Hairs B and C... ...	short	short	long
Paddle fringe	short spines	short spines	long hairs

The breeding-places of *A. marteri* in Syria are of the same kind as those described by Senevet for North Africa and by Hadjinicolaou for Greece. It is a species which lives in hilly or mountainous country. It has been found in Syria at altitudes of from 400 to 4,000 feet. Larvae and pupae have been found in shaded pools in steep and rocky stream-beds. In the streams are cascades and waterfalls, rapids and torrents, with the shady pools at intervals, sometimes at the sides. The larvae often come out into the open parts of the pools and are easily seen and may be dipped out in numbers. When once disturbed, however, they get among the boulders or under overhanging rocks, and may be missed by the collector.

Seven species of *Anopheles* have now been recorded from Syria. Keys to the identification of these species follow :—

Adults.

1. Spots on wing.....2
   No spots on wing.....5
2. Dark spots in middle of wing only.....*sacharovi*
   Dark and pale spots on costa as well as in middle of wing.....3

3. Costa with fewer than four pale spots.....*hyrcanus*
   Costa with four or more pale spots.....4
4. Hairs and scales on mesonotum.....*superpictus*
   Hairs but no scales on mesonotum.....*sergenti*
5. Mesonotum with golden hairs or hair-like scales on median area and with tuft of pale scales on anterior border.....*claviger*
   Mesonotum with dark hairs only and no scales.....6
6. Tuft of pale scales on vertex, pale fringe scales at apex of wing.....*marteri*
   No tuft of pale scales on vertex, and no pale fringe scales at apex of wing..... *algeriensis*

Larvae.

1. Inner clypeal hairs, bases nearly touching.....2
   Inner clypeal hairs, bases wide apart.....6
2. Outer clypeal hairs tree-like.....3
   Outer clypeal hairs not tree-like.....4
3. Inner clypeal hairs simple ; branched antennal hair arising halfway along shaft ..... *hyrcanus*
   Inner clypeal hairs branched towards end ; branched antennal hair arising quarter way along shaft.....*sacharovi*
4. Abdominal palmate hairs without filaments.....5
   Abdominal palmate hairs with filaments.....*marteri*
5. Dark markings on fronto-clypeus, separate spots ; base of saddle-hair at edge of or off saddle.....*claviger*
   Dark markings on fronto-clypeus, transverse bands ; base of saddle-hair within margin of saddle.....*algeriensis*
6. Dark transverse band on fronto-clypeus about bases of frontal hairs ; main tergal plates wider than gut ; three accessory tergal plates.....*sergenti*
   Small dark spot behind frontal hairs ; main tergal plates not wider than gut ; only one accessory tergal plate.....*superpictus*

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