

**THE DISTRIBUTION AND ECOLOGY OF THE MOSQUITOES,  
IN THE RED SEA GOVERNORATE, EGYPT\***

By

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ABSTRACT

A survey of the mosquito fauna was conducted in the Red Sea Governorate (RSG), Egypt. Eight mosquito species were found and their distribution and ecology investigated. *Culex pipiens* and *Aedes caspius* were common in urban areas while a malaria vector, *Anopheles sergentii* was found in a single restricted area. *A. detritus* was found for the first time in the RSG. No *Cx. quinquefasciatus* were found, indicating that the overlap between *Cx. pipiens* and *Cx. quinquefasciatus* probably occurs south of this area. Larval habitats are described for the various mosquitoes and the potential for these mosquitoes in disease transmission is discussed.

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Table (1)

Distribution and breeding site characteristics of mosquito species  
in the Red Sea Governorate.

Location	Type of breeding site	Salinity (gcl/l)	pH	<u>Ae. caspius</u>	<u>Ae. detritus</u>	<u>An. multicolor</u>	<u>An. sergentii</u>	<u>An. ainshamsi</u>	<u>Cx. pipiens</u>	<u>Cx. pusillus</u>	<u>Cs. longiareolata</u>
Saint Anthony's Monastery	Brackish water spring	14.6	7.5								+
Saint Paul's Monastery	Potable water tank	ND**	7.0								+
	Spring water basin	ND	7.2								+
Ras Ghareb	Sewage drain	10.8	7.3	+							
	Cess pit	4.8	7.4								
19 km south of Ras	edge of salty lake	77.5	6.0			+		+			
Ras Shoukeir	Burrow pits, edge of salty pool or water channels	33.5	7.0	+				+			
Hurghada	Cess pit	0.8-5.35	7.0								+
	Seepage water	14.5	7.2	+							
El Quseir	Cess pits	2.5	8.8			+			+		
Wadi El-Ambag 8 km west of El Quseir	Spring water pool	0.27- 0.55	7.5	+			+				
Wadi El Gabal	Small salty pool	43.75	6.5	+							
Marsa Alam	Cess pit	2.88	7.7			+		+			+
	Potable water tank	1.25	7.0								
Wadi El Gemal	Salty water pool	32.00	7.0	+							
Abu El Ghoson	Cess pit	12.5	6.5	+							
Bernice	Cess pit	6.75	7.5					+			+

\*\* ND = not determined.

*Anopheles sergentii* (Theobald) : This mosquito was found uniquely in a breeding place 8 km west of El Quseir (Wadi El Ambag). Larvae were found in association with *Cx. pusillus* and *Ae. caspius* during the winter and spring seasons. A full description of the locality and the breeding place is given by Gad et al. (1984).

*Anopheles (Cellia)* spp. : This mosquito was first collected by Amin Gad (1967) from Ras Shukeir (28°08'N and 33°06'E) and identified as *An. stephensi* (Liston). However, the speciation of this mosquito has been controversial. Dr. P.F. Mattingly (Entomology Department, British Museum, London) identified the mosquito as similar to *An. dancalicus* Corradetti (Corradetti, 1940). During this survey we have found larvae of this mosquito in the type locality as well as a similar area 14 km north. Morphological studies on this mosquito indicate some similarity to *An. salbaii* (Maffi and Coluzzi, 1958). Biological, ecological as well as morphological findings indicate that this mosquito is not *An. stephensi* and may in fact be a new species. Studies designating this mosquito as a new species will be published separately and will provisionally be referred to in this paper as *An. ainshamsi*.

### 3. Genus *Culex* Linnaeus

#### Subgenus *Culex* Linnaeus

*Culex pipiens* (Linnaeus) : This mosquito was found to breed in cess pits near human dwellings at the six main coastal towns (Ras Ghareb, Hurghada, Safaga, El Quseir, Marsa Alam and Bernice). The water was characterized by a relatively high sewage content, it was slightly basic and contained various amounts of salts, table 1. It was also found in the South Galala plateau at Saint Anthony's Monastery at an altitude of about 1000 meters. In this area *Cx. pipiens* was found to breed with *Cs. longiareolata* in brackish water collected in a deep rocky depression formed within the mountain itself. This breeding site was located one km east of the monastery and was completely shaded by dense vegetation and palm trees. In cess pits