TABLE 1.—Mosquitoes collected within treated and untreated bed nets inside a house in the Klong Toey section of Bangkok, Thailand.

Month or date	No. tests	Av. number of indicated species of mosquitoes entering nets treated with [a]					
		C. p. quinquefasciatus			*A. aegypti*		
		M–1960 (A)	Deet (G)	Untreated	M–1960 (E)	Deet (F)	Untreated
Aug.	2	0	0	25	..	..	..
Sept.[b]	4	..	..	22	0	0	10
Oct.	4	0	0	24	0	0	17
Nov.	5	0	0	26	0	0	15
Dec. 6	1	5	0	29	1	0	8
Dec. 13	1	..	0	29	..	6	16
Dec. 20	1	..	3	30	..	..	..

[a] Nets A and G treated Aug. 16; nets E, Aug. 17; and nets F, Aug. 19, 1966.
[b] Tests made with E and F nets only.

A. aegypti. These periods were chosen because the two species were known to be actively seeking human hosts for blood meals at these hours.

The tests were made by placing the 2 sets of treated bed nets and 2 sets of untreated bed nets in position shortly before the test period. Then two subjects sat within each set of nets for the 2 hours of the test and collected all mosquitoes that entered. These mosquitoes were then counted and identified. When the nets were not in use (between tests), they were hung in the house. Each set of nets was tested once a week until mosquitoes entered the treated nets.

The data are summarized in Table 1. The numbers caught in the untreated sets showed that both species of mosquitoes were actively seeking human hosts during the test period. The average number of adult female, *C. p. quinquefasciatus*, collected in 2 hours within the untreated bed nets ranged from 22 to 30; the average number of female *A. aegypti* ranged from 8 to 16. The bed net treated with deet provided complete protection for 17 weeks against *C. p. quinquefasciatus* and for 16 weeks against *A. aegypti*. The bed net treated with M–1960 provided complete protection against both species for 15 weeks.

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A GYNANDROMORPH OF *Culicoides lailae* KHALAF (CERATOPOGONIDAE: DIPTERA)[1]

SHAHIN NAVAI [2]

In *Culicoides*, intersexes have been recorded from nine species (Callot, 1959; Callot and Kremer, 1963; Dzhafarov, 1960; Navai and Mesghali, 1969; Smith, 1966 and Smith and Perry, 1967) but so far gynandromorphs have been recorded from only three species (Curtis, 1962 and Hawkins, 1962). Herein is a record of a gynandromorph of *Culicoides lailae* Khalaf which has not been described previously.

Four specimens of the gynandromorph were collected in the Caspian littoral. Two were collected on July 11, 1964 in Sari, Iran, together with 10 normal females and 9 normal males in a light trap. The other two were collected on August 25, 1967 in Shirud, Iran, together with 17 normal females and 5 normal males.

The gynandromorphs exhibited female characteristics in the wings and abdomen (Fig. 1). Spermathecae were definitely present and were of the same size as those of the normal female. No eggs were present in the ovaries. The head of the

[1] This study was supported in part by project No. 6395, the Ministry of Health and Plan Organization, Government of Iran.

[2] Research associate, Department of Environmental Health, School of Public Health and Institute of Public Health Research, University of Tehran, Tehran, Iran.

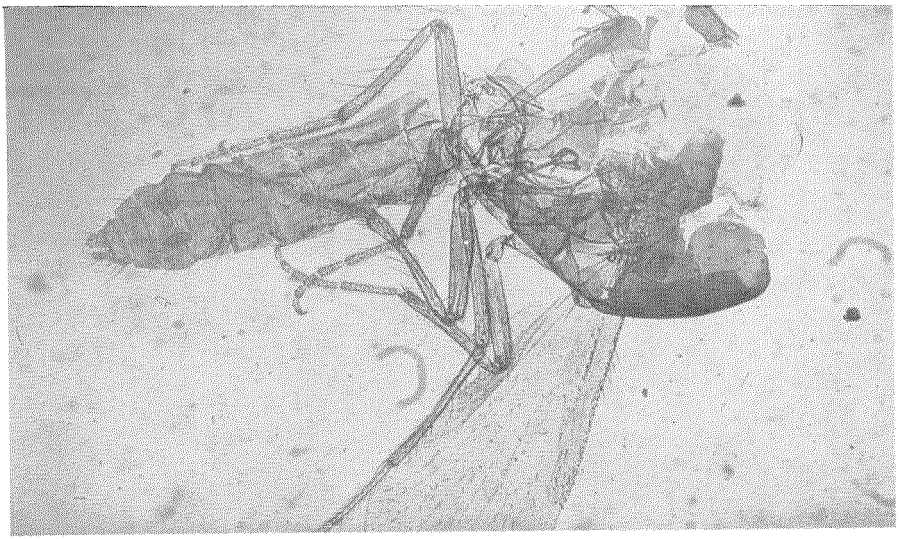

FIGURE 1

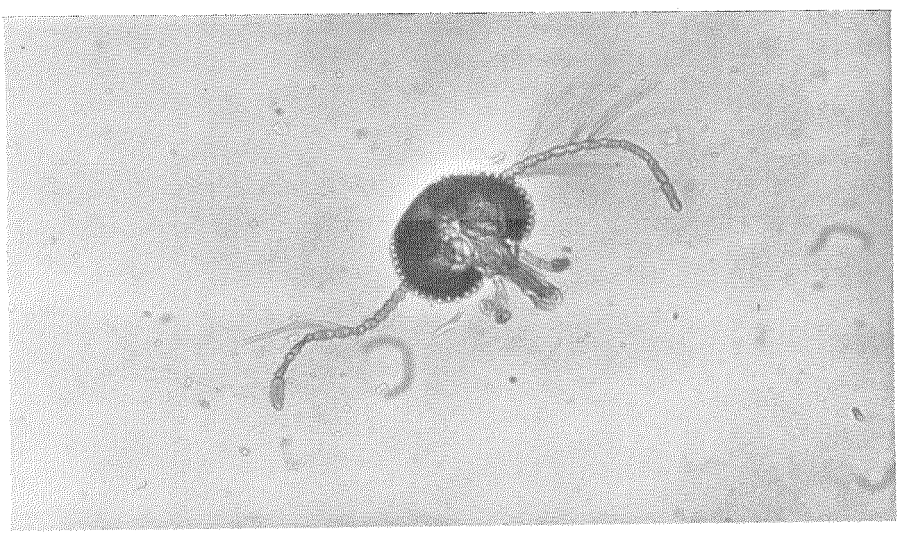

FIGURE 2

gynandromorphs was of the male type (Fig. 2). The mouthparts, antennae, and palpi were similar to those of the normal male.

It has been speculated that sexual heteromorphism can result from parasitism (Callot, 1959; Smith, 1966 and Smith and Perry, 1967). The specimens of gynandromorph examined in this study showed no signs of parasitism.

The gynandromorph specimens are mounted on glass slides in Gater's solution and are deposited in the collection of the Institute of Public Health Research, University of Tehran, Tehran, Iran.

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