

TABANIDAE SPECIES (DIPTERA) IN THE ELAZIĞ PROVINCE OF TURKEY

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ABSTRACT

This study was carried out in order to identify *Tabanidae* species in the Elazığ province between June and September 2003. A total of 434 *Tabanidae* specimens were collected at the localities including the centrum of Elazığ and its districts including Sivrice, Keban and Pertek. Twenty species from three genera were identified during this study. Three species from *Chrysops* (*C. flavipes*, *C. buxtoni*, *C. hamatus*), 11 species from *Tabanus* (*T. autumnalis*, *T. cordiger*, *T. eggeri*, *T. indrae*, *T. leleani*, *T. miki*, *T. oppugnator*, *T. regularis*, *T. spectabilis*, *T. spodopterus*, *T. unifasciatus*), 6 species from *Haematopota* (*H. bigoti*, *H. hennauxi*, *H. kemali*, *H. pallens*, *H. pluvialis*, *H. sewelli*) were identified.

Key Words: *Diptera*, *Tabanidae*, Elazığ, Türkiye.

ÖZET**Elazığ Bölgesinde Tabanidae (Diptera) Türleri**

Bu çalışma, Elazığ yöresinde bulunan Tabanidae türlerinin belirlenmesi amacı ile 2003 yılı Haziran–Eylül ayları arasında yapılmıştır. Tabanidae örnekleri Merkez, Sivrice, Keban ve Pertek ilçelerine gidilerek toplanmıştır. Bu çalışmada toplam, 434 Tabanidae örneğinden 3 cinsine ait 20 tür tespit edilmiştir. Buna göre *Chrysops* cinsinden üç tür (*C. flavipes*, *C. buxtoni*, *C. hamatus*), *Tabanus* cinsinden onbir tür (*T. autumnalis*, *T. cordiger*, *T. eggeri*, *T. indrae*, *T. leleani*, *T. miki*, *T. oppugnator*, *T. regularis*, *T. spectabilis*, *T. spodopterus*, *T. unifasciatus*) ve *Haematopota* cinsinden altı tür (*H. bigoti*, *H. hennauxi*, *H. kemali*, *H. pallens*, *H. pluvialis*, *H. sewelli*) identifiye edilmiştir.

Anahtar Kelimeler: *Diptera*, *Tabanidae*, Elazığ, Türkiye

INTRODUCTION

Tabanidae family belonging to *Diptera* has a worldwide distribution. The presence of many species was reported earlier in Turkey (1-16).

Tabanids are a cosmopolitan family of usually medium to large-sized *Diptera*, commonly known as horse or deer flies. Females of extant forms are blood feeders and obtain their meals from a variety of vertebrate hosts. Males feed on nectar and pollen of flowers (17). The presence of these flies in very large swarms around cattle could lead to the loss of so much blood that there is a large drop in the milk yield and a deterioration in their condition (18, 19).

The causative organisms of disease including anaplasmosis, anthrax, tularemia, brucellosis, trypanosomiasis, equine infectious anemia and vesicular stomatitis are known to be mechanically transmitted by tabanids. Some species are also the vectors of *Loa loa*, *Dirofilaria roemeri* and *Onchocerca gibsoni* (20-23).

Approximately, 3500 species belonging to *Tabanidae* were identified in the world (24), 161 species and 13 subspecies of this species have been determined in Turkey (23, 25).

This study was conducted to identify *Tabanidae* species in the Elazığ, a province at eastern Turkey.

MATERIALS and METHODS

In this study, specimens were collected from Elazığ (Centrum), Sivrice, Keban and Pertek districts between June and September 2003. A total of 434 *Tabanidae* specimens were collected from hosts by hand or by bottles containing cyanide at noon hours.

The specimens were brought to the laboratory and were stretched in their natural position. Later, they were reserved for identification in special boxes, with written protocol knowledge outside surface. Besides Glo tablets were abandoned in boxes to prevent development of the moth-insect.

Tabanidae of specimens were secured to be define eyes of tape and blot in boxes that was moist cotton in the base was held 5-6 hours. Later, each fly was identified eye tape, frontal tape index, figure and bigness of frontal callus, appearance of antenna and palp, to be or not to be figured of the wing, figure of blot over the abdomen, to profit by interested source (7, 16, 26-30).

RESULTS

Twenty species from three genera (*Chrysops*, *Tabanus*, *Haematopota*) were identified in the present study at the region (Table 1). Three species from *Chrysops* (*C. flavipes*, *C. buxtoni*, *C. hamatus*), eleven species from *Tabanus* (*T. autumnalis*, *T. cordiger*, *T. eggeri*, *T. indrae*, *T.*

leleani, *T. miki*, *T. oppugnator*, *T. regularis*, *T. spectabilis*, *T. spodopterus*, *T. unifasciatus*) and six species from *Haematopota* (*H. bigoti*, *H. hennauxi*, *H. kemali*, *H. pallens*, *H. pluvialis*, *H. sewelli*) were identified.

Table 1. Distribution of Tabanidae species according to district

Founding Species	Centrum		Sivrice		Keban		Pertek		Total	
	n	%	n	%	n	%	n	%	n	%
<i>Chrysops flavipes</i>	3	2.77	50	21	-	-	-	-	53	12.21
<i>Chrysops buxtoni</i>	-	-	20	8.40	-	-	4	6.55	24	5.52
<i>Chrysops hamatus</i>	5	4.62	28	11.76	5	18.51	-	-	38	8.75
<i>Tabanus autumnalis</i>	5	4.62	-	-	5	18.51	-	-	10	2.30
<i>Tabanus cordiger</i>	-	-	3	1.26	-	-	3	4.91	6	1.38
<i>Tabanus eggeri</i>	62	57.40	57	23.94	-	-	-	-	119	27.41
<i>Tabanus indrae</i>	3	2.77	-	-	-	-	5	8.19	8	1.84
<i>Tabanus leleani</i>	-	-	10	4.20	-	-	-	-	10	2.30
<i>Tabanus miki</i>	7	6.48	3	1.26	-	-	12	19.67	22	5.06
<i>Tabanus oppugnator</i>	2	1.85	-	-	-	-	1	1.63	3	0.69
<i>Tabanus regularis</i>	5	4.62	10	4.20	3	11.11	-	-	18	4.14
<i>Tabanus spectabilis</i>	7	6.48	6	2.52	6	22.22	-	-	19	4.37
<i>Tabanus spodopterus</i>	1	0.92	-	-	3	11.11	3	4.91	7	1.61
<i>Tabanus unifasciatus</i>	-	-	4	1.68	-	-	5	8.19	9	2.07
<i>Haematopota bigoti</i>	6	5.55	15	6.30	-	-	-	-	21	4.83
<i>Haematopota hennauxi</i>	-	-	7	2.94	-	-	-	-	7	1.61
<i>Haematopota kemali</i>	2	1.85	15	6.30	-	-	7	11.47	24	5.52
<i>Haematopota pallens</i>	-	-	2	0.84	1	3.70	1	1.63	4	0.92
<i>Haematopota pluvialis</i>	-	-	3	1.26	2	7.40	17	27.86	22	5.06
<i>Haematopota sewelli</i>	-	-	5	2.10	2	7.40	3	4.91	10	2.30
Total	108	24.88	238	54.83	27	6.22	61	14.05	434	100

Species identified were given in Table 1, according to working centres, 12 species of Centrum, 16 species of Sivrice, 8 species of Keban and 11 species of Pertek was registered as seen in the table. *T. eggeri* (119 number, 27.41%) was the most abundantly collected species. *C. flavipes* (53 number, 12.21%) second line, *C. hamatus* (38 number, 8.75 %) third line, *C. buxtoni* and *H. kemali* (24 number, 5.52 %) fourth line were taken. *T. oppugnator*, *H. pallens*, *T. cordiger*, *H. hennauxi* and *T. spodopterus* were minimum collected species.

The specimens of *Tabanidae* were collected the most abundantly in Sivrice (238 number, 54.83%) and the least abundantly in Keban (27 number, 6.22%). In 20 species were identified throughout study, 8 species in centrum (*C. buxtoni*, *H. hennauxi*,

H. pallens, *H. pluvialis*, *H. sewelli*, *T. cordiger*, *T. leleani*, *T. unifasciatus*); 4 species in Sivrice (*T. autumnalis*, *T. indrae*, *T. oppugnator*, *T. spodopterus*); 12 species in Keban (*C. flavipes*, *C. buxtoni*, *H. bigoti*, *H. hennauxi*, *H. kemali*, *T. cordiger*, *T. eggeri*, *T. indrae*, *T. leleani*, *T. miki*, *T. oppugnator*, *T. unifasciatus*); 9 species in Pertek (*C. flavipes*, *C. hamatus*, *H. bigoti*, *H. hennauxi*, *T. autumnalis*, *T. eggeri*, *T. leleani*, *T. regularis*, *T. spectabilis*) were not found. *H. hennauxi* and *T. leleani* were present only in Sivrice.

DISCUSSION

Until today, the studies were conducted about *Tabanidae* in Turkey identifying two species of *Stonemyia* genus, 10 species of *Pangonius* genus,

7 species of *Silvius*, three species of *Nemorius*, 9 species of *Chrysops*, 14 species of *Atylotus* genus, three species of *Therioplectes*, 16 species of *Hybomitra* genus, 62 species of *Tabanus* genus, 25 species of *Haematopota*, 6 species of *Dasyrhamphis*, 4 species of *Philipomyia* in order to get total of 161 species and 13 subspecies relating to this genus (1, 3-6, 16, 25, 29-34).

In this study three species from *Chrysops*, 11 species from *Tabanus*, 6 species from *Haematopota* being twenty species were identified. The presence of these species was also reported in earlier studies (1, 2, 13, 35). However, *Atylotus agricola*, *Haematopota crassicornis* and *Tabanus tergestinus* that had been reported in Elazığ (1) could not be identified in this study.

Three species including *Chrysops flavipes*, *C. buxtoni*, *C. hamatus* were identified in Elazığ province of Turkey for the first time. However, the occurrence of the species were recorded earlier from different region of Turkey (1-6, 8-10, 13-16, 23, 25, 31, 32).

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