

## Short Communication

# The Subfamily Culicinae (Diptera: Culicidae) in Kerman Province, Southern Iran

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### Abstract

There are some arboviral and parasitic diseases which are transmitted by culicine mosquitoes in Iran. Three genera and eleven species of the subfamily Culicinae (Diptera: Culicidae) were collected by dipping method and identified in Kahnooj district, Kerman province, south-eastern Iran, during October and November, 2003 including; *Culex (Culex) bitaeniorhynchus*, *Cx. (Maillotia) deserticola*, *Cx. (Cux.) laticinctus*, *Cx. (Cux.) perexiguus*, *Cx. (Cux.) pipiens*, *Cx.(Cux.) quinquefasciatus*, *Cx.(Cux.) sinaiticus*, *Cx.(Cux.) theileri*, *Cx.(Cux.) tritaeniorhynchus*, *Culiseta (Allotheobaldia) longiareolata*, and *Uranotaenia (Pseudoficalbia) unguiculata*. In this study, *Ur.unguiculata* was identified in Kerman province for the first time. Fauna and ecology of Culicinae need more investigations in this province.

**Keywords:** Mosquito, Culex, Culiseta, Uranotaenia, Iran

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Near to 70 species and seven genera of mosquitoes have been reported in Iran by now (1-10). West Nile and Sindbis viruses as well as *Dirofilaria immitis* (dog heart worm) and *D. repens* which are transmitted by culicine mosquitoes, have been reported in Iran (11-15). The possibility of some culicine borne arboviral outbreaks like Japanese encephalitis and Rift Valley fever in the WHO Eastern Mediterranean region including Iran is noteworthy (16). While it is necessary to study mosquitoes for providing exact checklist and distribution in Iran, there is little information on the subfamily Culicinae in Kerman province, southern Iran. Three genera of *Culex*, *Culiseta* and *Ochlerotatus* and 17 species of the subfamily Culicinae have been reported in the province (17, 18). As

the authors know, there are no more references on the culicine mosquitoes of Kerman province. Some larvae of culicine mosquitoes were collected from different larval breeding places by dipping method in Kahnooj district, Kerman province, southern Iran during October and November 2003. The larvae were preserved in lactophenol. The permanent microscopic slides of preserved larvae were prepared using Liquid de Faure. Larvae were identified using the keys of Zaim and Cranston (3) and light microscope. Mosquito name abbreviations are cited based on Reinert (19).

Generally, 288 culicine larvae were collected and identified including three genera and eleven species as follows:

*Cx.(Culex) bitaeniorhynchus* Giles, 1901 (0.7%),

*Cx. (Maillotia) deserticola* Kirkpatrick, 1924 (3.1%), *Cx.(Cux.) laticinctus* Edwards, 1913 (0.3%), *Cx.(Cux.) perexiguus* Theobald, 1903 (27.1%), *Cx.(Cux.) pipiens* Linnaeus, 1758 (10.4%), *Cx.(Cux.) quinquefasciatus* Say, 1823 (3.8%), *Cx.(Cux.) sinaiticus* Kirkpatrick, 1924 (6.3%), *Cx.(Cux.) theileri* Theobald, 1903 (3.8%), *Cx.(Cux.) tritaeniorhynchus* Giles, 1901(10.8%), *Culiseta (Allotheobaldia) longiareolata* (Macquart, 1839) (28.5%), *Uranotaenia (Pseudoficalbia) unguiculata* Edwards, 1913(5.2%). This is the first report of *Ur. unguiculata* in Kerman province.

All larvae were collected from natural habitats, generally feeding with seepage water, such as swamps, seepages, streams, river banks, drying river beds, pools, and grasslands. In the studied areas, the type and surface of breeding places were limited because of long period of drought. As the potential vectors of different diseases exist, it is suggested more investigations on Culicinae in Kerman province.

All specimens are deposited in the Medical Arthropod Museum, School of Public Health, Tehran University of Medical Sciences, Iran.

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### References

1. Dow RP (1953). Notes on Iranian mosquitoes. *Am J Trop Med Hyg*, 2: 683-93.
2. Shahgudian ER (1960). A key to anophelines of Iran. *Acta Med Iran*, 3(3): 38-48.
3. Zaim M, Cranston PS (1986). Checklist and keys to the Culicinae of Iran (Diptera: Culicidae). *Mosq Syst*, 18:233- 45.
4. Glick JI (1992). Illustrated key to the female *Anopheles* of southwestern Asia and Egypt (Diptera: Culicidae). *Mosq Syst*, 24(2):125-40.
5. Dinparast-Jadid N, Gordiev M, Townson H (2001). Molecular key to *Anopheles maculipennis* species complex and its application for malaria control in coastal area of Caspian Sea. *3<sup>rd</sup> Iranian Congress on Medical Parasitology, Sari*, p108.
6. Azari-Hamidian S, Joeafshani MA, Mosslem M, Rassaei MR (2002). Taxonomic survey of mosquitoes (Diptera: Culicidae) in Guilan province with reporting of a subgenus new to Iranian mosquito fauna. *15<sup>th</sup> Iranian Plant Protection Congress, Kermanshah*, p319-20.
7. Sedaghat MM, Linton VM, Oshaghi MA, Vatandoost H, Harbach RE (2003). The *Anopheles maculipennis* complex (Diptera: Culicidae) in Iran: molecular characterization and recognition of a new species. *Bull Entomol Res*, 93(6): 527-35.
8. Oshaghi MA, Townson H, Vatandosot H (2000). Genetic variation of the *Anopheles fluviatilis* complex in Iran. *2<sup>nd</sup> Iranian Congress on Malaria, Tehran*, p16.
9. Oshaghi MA, Taghilou B, Moradi MT, Vatandoost H (2004). Detecting the *Anopheles culicifacies* complex, species A and B in Baluchistan using mtDNA PCR RFLP assay, the first report of species B from Iran. *Hakim*, 7(1): 35-42.
10. Gholizadeh S, Tafsiri E, Zakeri S, Dinparast-Jadid N (2004). Molecular identification of a new species to Iranian

anopheline fauna of *Anopheles maculipennis* complex (Diptera:Culicidae). *The 13<sup>th</sup> Iranian Congress on Infectious Diseases and Tropical Medicine, Tehran*, p197.

11. Naficy K, Saidi S (1970). Serological survey on viral antibodies in Iran. *Trop Geogr Med*, 2(2):183-88.
12. Saidi S, Tesh R, Javadian E, Nadim A (1976). The prevalence of human infection of West Nile in Iran. *Iranian J Publ Health*, 5: 8-14.
13. Sadighian A (1969). Helminth parasites of stray dogs and jackals in Shabsavar area, Caspian region, Iran. *J Parasitol*, 55(2): 372-74.
14. Siavashi MR, Massoud J (1995). Human cutaneous dirofilariasis in Iran: A report of two cases, Iran. *Iranian J Med Sci*, 20(12): 85-86.
15. Mobedi I, Javadian E, Abai MR (1991). Introduction of zoonosis focus of dog heart worm (*Dirofilaria immitis*) in Meshkin-Shahr and its importance in Iran. *Proceeding of First Iranian Congress of Parasitic Diseases, Rasht*, p78.
16. WHO (2004). Integrated Vector Management. *WHO Regional Officer for Eastern Mediterranean, Cairo*.
17. Zaim M, Manouchehri AV, Yaghoobi-Ershadi MR (1985). Mosquito fauna of Iran 2-Culex. *Iranian J Publ Health*, 14(1-4): 1-12.
18. Zaim M (1987). The distribution and larval habitat characteristics of Iranian Culicinae. *J Am Mosq Cont Assoc*, 3(4): 568-73.
19. Reinert JF (2001). Revised list of abbreviation for genera and subgenera of Culicidae (Diptera) and the notes on generic and subgeneric changes. *J Am Mosq Cont Assoc*, 17(1):51-55.