

The Culicidifauna of the arid region: Systematic and ecology.

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The mosquito family, Culicidae, consists of 41 recognized genera and roughly 3546 species, many of which are carriers of disease pathogens that have been deadly to tens of millions of people for generations and domestic animals for centuries. These include the well-known human illnesses dengue, encephalitis, yellow fever, and filariasis, among others. There are numerous capture techniques that can be used to sample Culicidian populations, capture net, Catching using human bait and Harvesting the larvae, each of this methods has benefits and drawbacks. The study's goals, the environment, and lastly the available resources all influence which approach is used. Based on records published from 1903 to 2021, an updated checklist of Algeria's mosquito species (Diptera: Culicidae) is offered. It is quite certain that 53 species from seven genera, including *Aedes* (15 species), *Anopheles* (15 species), *Coquillettidia* (2), *Culex* (14), *Culiseta* (5), *Orthopodomyia* (1), and *Uranotaenia*, exist in the nation (1). Provisionally recognized as existent in Algeria are two additional species, *Culex simpsoni* Theobald, 1905, and *Uranotaenia balfouri* Theobald, 1904. Also the practical uses of image-based automatic categorization of vector mosquitoes, such as the early identification of potential diseases transmitted by mosquitoes, have been studied for decades. To obtain strong classification performance, photos of mosquitoes with specific postures and body features, such as flatbed wings, are frequently needed. However, the classification accuracy of prior systems has never been near to that of human specialists. Deep convolutional neural networks (DCNNs) are the most advanced method for extracting visual information and categorizing things, and as a result, there is a lot of interest in using DCNNs to categorize vector mosquitoes from simple to obtain photos.

Keywords: Culicidifauna; mosquito wings; systematic; ecology; geometric morphometrics; DCNNs.