Dedication

This piece of work is dedicated to:

My parents.

My brothers.

My relatives.

Acknowledgement

I would like to express my deep appreciation and thanks to my supervisor Dr. Mohamed Baha Eldin Ahmed Saad who gave me much of his time to accomplish this work through his advice, help, guidance and knowledge.

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أجريت هذه الدراسة فى ولاية الخرطوم (فى ثلاث مدن تمثل العاصمة)، وهى الخرطوم والخرطوم بحرى وأم درمان. تم اختيار أربعة مناطق من كل مدينة لهذه الدراسة اعتمادا على وجود أماكن توالد البعوض فى هذه المناطق.

و قد كان الهدف من الدراسة هو تصنيف البعوض الموجود بالعاصمة الى أجناس وأنواع مع أخذ تمييز الجنس (ذكور واناث) فى الاعتبار. وتم جمع البعوض باستخدام المصيدة الضوئية (مصيدة مدنى) و بعد ذلك تم التعرف على البعوض الذى تم اصطياده.

و قد أثبتت الدراسة وجود أنوفلس أربينسيس و كيولكس كوينكيفاشيتس فى جميع مناطق الدراسة.

من 1000 بعوضة تم جمعها، كانت 494 منها أنوفلس أربينسيس و 506 كانت كيولكس كوينكيفاشيتس والتى تمثل معدل انتشار قدرة 49.4% و 50.6% على التوالى.

وجد أن الخرطوم بحرى لها أعلى معدلات تواجد خلال المدن الثلاث وأقل معدل سجل فى أم درمان. و قد وجد أن هنالك فرق معنوي ذا دلالة احصائية فى معدلات تواجد البعوض بين المدن الثلاث.

جمعت ذكور واناث البعوض من جميع المناطق. كان عدد الذكور 409 وعدد الاناث 591 والتى تمثل 40.9% و 59.1% من مجموع البعوض على التوالى، ولم يشكل ذلك الفرق أى دلالة احصائية معنوية.

ذكور أنوفلس أربينسيس كانت تمثل 41.5% و الاناث 58.5%. أما ذكور كيولكس كوينكيفاشيتس فكانت تمثل 40.3% بينما الاناث تمثل 59.7%.

فى مدينة الخرطوم، كان عدد ذكور أنوفلس أربينسيس يسود أكثر من الاناث فى الصحافة وكان العدد متساويا تقريبا فى سوبا والمعمورة وجبل أولياء، فى المقابل كانت اناث كيولكس كوينكيفاشيتص تسود أكثر من الذكور فى كل مناطق الدراسة ما عدا جبل أولياء حيث كان عدد الذكور يسود أكثر من الاناث.

فى أم درمان، كانت اناث أنوفلس أربينسيس أكثر من عدد الذكور فى مناطق وادى سيدنا والقمائر، بينما كانت أعداد الاناث والذكور متساوية تقريبا فى الفيتحاب والعرضة. بالنسبة لبعوض كيولكس كوينكيفاشيتص، كانت أعداد الاناث تقريبا مساوية لأعداد الذكور.

فى الخرطوم بحرى، كانت اناث كيولكس كوينكيفاشيتص أكثر عددا من الذكور فى كل مناطق الدراسة وكذلك فى حالة بعوض أنوفلس أربينسيس كانت أعداد الاناث تفوق أعداد الذكور فى شمبات والعزبة وحلة كوكو.

وقد خلصت الدراسة الى أن تواجد الأنوفلس أربينسيس والكيولكس كوينكيفاشيتص فى كل مناطق الدراسة فى العاصمة ولكن أكثر تجمعات البعوض وجدت فى الخرطوم بحرى.

وأوصت الدراسة بالحوجة لزيادة عدد الدراسات فى مجال توزيع الأنواع الجديدة من البعوض فى مختلف الفصول بالاضافة الى دورها فى نقل الملاريا.

Abstract

This study was conducted in Khartoum state. in the three towns comprising the capital, Khartoum, Khartoum North and Omdurman. Four areas were selected from each town for the study. According to existence of breeding sites in these localities.

The aim of the study was to classify mosquitoes present in Khartoum State to genera and species with emphasis on gender differentiation.

Mosquitoes were collected using light trap (Medani trap). The trapped mosquitoes were identified.

The study revealed the existence of *Anpheles arabiensis* and *Culex quniquefasciatus* in all examined areas.

Out of the 1000 mosquitoes collected, 494 were *Anopheles arabiensis*, and 506 were *Culex quniquefasciatus* constituting prevalence rates of 49.4% and 50.6% respectively.

Khartoum North was found to have the highest occurrence rate among the three towns and the lowest was reported in Omdurman. The differences were found to be statistically significant.

Males of mosquitoes as well as females were collected in all areas. 409 males were collected and 591 females were collected constituting 40.9% and 59.1% of the total collection respectively. The differences were found to be statistically insignificant.

For *Anopheles arabiensis*, the males constituted 41.5% of the collection and the females constituted 58.5%. *Culex quniquefasciatus* males constituted 40.3% of the total collection while the females constituted 59.7%.

In Khartoum town, the number of *Anopheles arabiensis* males dominated the number of females in Alsahafa and was almost equal in Soba, Almamura and Gabal Awlia, while the number of females of *Culex quinquefasciatus* dominated the number of males in all study areas except in Gabal Awlia where *Culex quniquefasciatus* males dominated the number of females.

In Omdurman, the *Anopheles arabiensis* females dominated the number of males in Wadi Saidna and Algamaer, while the number of females was almost equal to the number of males in Alfetihab and Alarda. For *Culex quniqufasciatus*, the number of females was almost equal to the number of males.

In Khartoum North, *Culex quniquefasciatus* females were greater in number than males in all study areas. For *Anopheles arabiensis*, the number of females dominated the number of males in Shambat, Alezba and Helat KuKu.

The study concluded that *Anopheles arabiensis* and *Culex quniquefasciatus* exist in all localities of Khartoum state but the largest population of mosquitoes was found in Khartoum North.

The study recommended that more studies are needed in order to assess the distribution of new species in different seasons in addition to their role in malaria transmission.

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