I. INTRODUCTION

Filarial diseases seem to have been known in Egypt since ancient times. Sonnini and Herodotus in their books about Egypt mentioned that elephantiasis was known to ancient Egyptians. Members of the Napoleon campaign recorded that elephantiasis was common in Rosetta, Damietta, Alexandria and Cairo. The first record of microfilaria in the blood of man in Egypt was made by Sonsino 1874. Culex pipiens was proved to be the vector of Wuchereria bancrofti in Egypt by Khalil; Halawani and Hilmy in 1932 (Shawarby et al. 1965).

The disease induces serious morbidity among human populations in several villages in the Nile Delta and therefore, it is considered one of the important public health problems.

Variations in susceptibility to infection among individuals of a vector population or between populations have been observed but rarely interpreted at the genetic level. Knowledge of genetic mechanisms controlling the susceptibility of a vector to infection is limited to associations between mosquitoes and their filarial parasites. Part of this variations is the result of genetic factors and the other as a result of environmental or extrinsic factors. Analysis of the variation is usually

difficult, and much of the literature on the susceptibility of vectors to infections simply records differences between species or between populations of species.

Although the genetic of vectorial capasity of filariids is undoubtedly the best understood aspect of genetic modulation in the filariasis, the field is still at a fairly primitive level of development and offers considerable opportunities for studies basic to understanding the host-parasite relationship. It is of vital importance to any consideration of attempts for the control of filariasis by the replacement of vector populations with filaria-refractory populations.However there is no thorough studies of the factors governing the vectorial potentiality of Cx. pipiens in filariasis transmission. So this study is a trial to identify these factors.

Lymphatic filarial parasite Wuchereria bancrofti can most readily be detected in its mosquito vectors by examining their tissues microscopically. However, demonstrations of transmission of this parasite by its mosquito vectors were usually impaired due to the lack of suitable laboratory recipient hosts. So, the present study aims to identify the different factors governing the vectorial potentiality of Cx. pipiens in filariasis transmission. Also, the inheritance of susceptibility and refractoriness of this vector to W. bancrofti as

well as the differentiation between susceptible and refractory strains of Cx. pipiens to microfilaria infection based on biochemical characters were studied.