

Sensorial organs in Phthiraptera (Insecta)

Soler Cruz M D and Serra Domínguez M J

Departamento de Parasitología.Fac. de Farmacia. Univ. de Granada.Granada.España.

The parasitic insects are a very important group of species in human Parasitology because they can produce important parasitic disease in man but can also transmit other parasitic diseases. These species possess sensorial structures in the antennae to be able to find the host.

In the present work we have studied the sensorial structures of Haematopinus suis (Anoplura:Haematopinidae).

Twenty specimens, both male and female, were examined. All the specimens were put in 70% ethyl alcohol. We gave the specimens three washes of 10 min. first in bidistilled water and then in ether, to remove the particles adhering to the cuticle. The dehydration was carried out by lyophilization (without water) at -40°C and 125 bars. The samples were mounted on SEM stubs with double-sided adhesive tape and silver conductive paint. The optimum time for sputter-coating with gold in the presence of argon gas was 2 min. The material was examined on a Zeiss DSM 950 SEM at 15 to 25 KV. Photographs were taken with a Polaroid system using 52 Polapan snapshots.

In the apex of fifth antennal segment (Photo 1) this species has twelve sensillum basiconicum of two different sizes. Pores were not on side nor in the tip of these sensillum (Photo 2). On the dorsal side of the fifth antennal segment it showed the sensillar complex with a sensillum coeloconicum and two pore organ (Photo 3). These had typical grooves (Photo 4). In the fourth antennal segment another sensillar complex was found with only a sensillum coeloconicum (Photo 5). We also observed in the second antennal segment a structure like a sensillum campaniform (Photo 6).

We have found some differences with the description made by Miller 1971. The sensorial complex of the fourth antennal segment was formed by a pore organ and a sensillum coeloconicum. Clay 1969, 1970, 1972, worked on the sense organs of the antenna of several species of Amblycera, Rhynchophthirina and Ischnocera. This author said that these species showed considerable diversity in the form of the antennal sense organs, even within the genera, but there is a similarity in the sense organ in the Ischnocera, Rhynchophthirina and Anoplura, but great differences with Amblycera. Slifer 1970, 1976, 1977, thinks that the sensillum basiconicum may be thick-walled pegs chemoreceptor if they had pores in the tips of the pegs or thin-walled pegs with several pores in the wall. The author said that they may be contact chemoreceptors to strong odors.

Th. Clay Bull. British Mus. Nat. Hist. (1969) 24, 1-25.

Th. Clay Bull. British Mus. Nat. Hist. (1970) 25, 75-98.

Th. Clay Pacific Insect (1972) 14, 339-408.

F. H. Miller Jr. New York Entomological Society (1971) 79, 19-26.

E. H. Slifer Ann. Rev. Ent. (1970) 15, 121-142.

E. H. Slifer N. Y. Ent. Soc. (1976) 84, 159-165.

E. H. Slifer and S. S. Sekhon J. Morphol. (1977) 151, 315-324.

Acknowledgements. The material examined is from British Museum Natural History. I am very grateful to Dr. C. H. C. Lyal of the British Museum Natural History for his great assistance during my visit to London. I would like to thank the Junta de Andalucía who gave me a grant for my visit. And also I would like to express my gratitude to the Electron Microscopy Unit of the Technical Services of University of Granada. This work has been supported by a grant from Dirección General de Investigación Científica y Técnica (DGICYT, Project no. PS 90-0228).

