

PHEROMONES – AN UNIQUE LANGUAGE IN THE NATURAL WORLD

Summary

Chemical signaling is probably one of the oldest forms of communication between living species. The substances known as pheromones are chemicals evoking a natural behavioral response in another member of the same species. They can be divided into few groups depending on their function such as: alarm, sex, epideictic, releaser, primer, territorial, aggregation or trail pheromones. Their presence among insects has been well described, although many vertebrates and plants also communicate this way. To make the chemical communication happen between organisms, pheromones have to reach proper receptors located on the surface of the recipient cells. In vertebrates chemosensory organ for pheromones is called vomeronasal organ (VNO). It is located ventrolaterally to the nasal septum. VNO is a tube-like structure lined with a sensory epithelium. The primary receptor neurons of the organ are bipolar with axons that terminate in the accessory olfactory bulb. Semiochemical sig-

nals are then transmitted to the emotional centre of the brain. Because of the fact that pheromones are detected subconsciously, VNO is often called "the sixth sense". VNO is well developed in most mammals. The presence of this organ has also been confirmed in about 50% people. Research conducted on animal pheromones was essential to give a better understanding of the mechanisms underlying animal behaviour. This knowledge can be used in order to for example protect endangered species. Pheromones can be also used commercially. The classical example are perfumes, where natural animal pheromones are now replaced by synthetic ones. In addition, for the last decades there have also been attempts to use pheromones in flight against insect.

To sum up, the world of the pheromones is very diversified and still posses a lot of secrets. Surely, a lot of discoveries in this discipline is still ahead of us.