Introductory Remarks to Symposium 20

Hidden senses

Kristina Corthals and Bart Geurten, Lund (Sweden) and Otago (New Zealand)

The human sensory percept encompasses many sensory modalities, but we are most keenly aware of the Aristotelian senses: vision, audition, taste, olfaction, and touch. Consequently, these senses are also in focus of neurosciences, thereby occluding the role of other senses crucial for the individual fitness in many species.
Fitness is directly dependent on functional navigation in all none-sessile organisms. Depending on the attributes of the habitat different modalities become essential. In cattered visual terrain, snakes enhance their prey detection by using their infrared sense to detect the heat profiles of their warm-blooded prey. In the flat dessert panes visual cues are scarce and ants augment their sensory percept using magneto-reception. To cross large distances in the absence of wings, spiders employ their elector receptors to initialize their wingless flight.
Even in more moderate habitats an unfavorable combination of temperature and humidity levels bear the danger of desiccation to small poikilothermic animals. Therefore hygrosensation is of utmost importance to many species and particularly to insects. Insects use hygro- and thermosensation not only to avoid adverse circumstance, but also to detect hosts. These sensory feats become even more important regarding global warming. Global warming threatens insect species with desiccation and loss of habitats, which extends the home ranges of known insect disease vectors to northern latitudes and higher altitudes.

In this symposium we want to shine light on a range of these occluded, "hidden senses" and discuss their neuronal mechanisms and the parallels uniting them. We have selected a range of scientists working on modalities outside of the Aristotelian senses. Their work illustrates the relevance of the sense to the organism's survival and characterizes the neuronal underpinnings of these rare modalities. The talks will cover hygro-sensation, lectroreception, magnetoreception and infrared sensing.

Symposium 20, Thursday, March 23, 16:15 - 18:15

Symposium 20

Thursday, March 23, 2023
16:15 - 18:15, Lecture Hall 105

Chairs: Kristina Corthals and Bart Geurten, Lund (Sweden) and Otago (New Zealand)

16:15 **Opening Remarks**

16:20 Maximilian Bothe, Graz, Austria
THERMORECEPTION IN RATTLESNAKES – HINDBRAIN PROCESSING AND SENSORY PERIPHERY (S20-1)

16:45 Kristina Corthals, Lund, Sweden
CHARACTERIZATION OF THE HUMIDITY RECEPTOR NEURONS IN *DROSOPHILA MELANOGASTER* (S20-2)

17:10 Ganesh Giri, Malmö, Sweden
UNDERSTANDING THE MECHANISM OF HYGROSENSATION (S20-3)

17:20 Pauline Fleischmann, Wuerzburg
HIDDEN SENSES: THE MAGNETIC COMPASS IN CATAGLYPHIS DESERT ANTS (S20-4)

17:45 Daniel Robert, Bristol, UK
ELECTRORECEPTION IN BEES AND OTHER ARTHROPODS (S20-5)

18:10 **Concluding Remarks**

Symposia