Acoustico-lateralis system - pressure change, balance and hearing
Hair cell

- Kinocilium
- Mitochondrion
- Nucleus
- Vesicles of neurotransmitter
- Stereocilia
- Sensory neuron
Inner ear: semicircular canals - change in direction
otoliths - balance, and hearing

Adapted from Hildebrand (3d ed.) 1988.
Otoliths - grow by accretion
Weberian Apparatus - connects swimbladder to inner ear - found in Otophysan fishes - catfish, minnows, suckers.
Accommodation

- Inner surface of retina
- Internal limiting membrane
- Ganglion and bipolar cells
- External limiting membrane
- Zone of visual cells scattered amongst pigment cells

**Low light intensity**
- Dark-adapted
- Areas occupied by portions of pigment cells lacking melanin
- Areas occupied by portions of pigment cells containing melanin
- Contractile parts of visual cells
- Rods
- Cones

**High light intensity**
- Light-adapted
Olfaction

Adapted from Lagler et al. 1977.
Electroreception

Tuberous Organ
(A)

Ampullary Organ
(B)

Adapted from Heiligenberg 1993, 144; drawing by H. A. Vischer.
Magnetic reception

Horizontal component of Earth’s magnetic field

Induced electric current
Startle response -
Mauthner cells

From Eaton and DiDomenico 1986; used with permission.