Perception in pain in fish and other ”cold-blooded animals”

Tobias Wang, section for Zoophysiology, Aarhus University, 8000 Aarhus C, Denmark

Fish are increasingly used for research purposes, and there is also an increased interest in the use of amphibians and reptiles for both basic and applied research. These ectothermic animals have traditionally been viewed as primitive beings, devoid of consciousness and hence with no ability to sense pain. This view is currently changing and most biologists will know agree that stress and tissue injury lead to profound behavioural changes as well as physiological and endocrine responses that are consistent with the sensation of pain or discomfort. In this talk, I will review some of the recent findings on pain perception in fish, amphibians and reptiles, and while I will conclude that these animals are very likely to be sentient creatures, I will also caution that it remains difficult to distinguish between anthropomorphism and hard facts when interpreting experimental data. While most of us would agree to err on the side of safety when dealing with these animals in research, we remain rather ignorant on how to provide analgesia and how to alleviate discomfort both in experimental setting and during the period of housing in our research facilities.