

## Reports and Comments

*Animal Welfare welcomes the submission of items for this Reports and Comments section of the journal. These are accepted for publication at the discretion of the Editorial Office and are not peer-reviewed.*

### The capacity of Cephalopods and Decapods to experience pain and suffering

A new report has been produced by Advocates for Animals, *'Cephalopods and Decapod Crustaceans: Their Capacity to Experience Pain and Suffering'*, calling on the UK government to include such species in the definition of 'animal' in the new Animal Welfare Bill (for England and Wales) and Animal Health and Welfare (Scotland) Bill. In the UK, the common octopus (*Octopus vulgaris*) is currently the only invertebrate included in the Animal (Scientific Procedures) Act 1986. In summarising the research on the capacity of cephalopods (octopus, squid, cuttlefish and nautilus) and decapod crustaceans (lobster, crab, crayfish) to experience pain and suffering, the report argues that the available scientific evidence is such that these species should be given the benefit of the doubt and be included in the new legislation.

The report begins with the executive summary in which the information and evidence contained within the body of the report is outlined. Both contain eight chapters: 'The scope of animal protection law'; 'The need for protection'; 'The assessment of capacity for suffering'; 'What types of evidence can show the capacity for pain and suffering?'; 'Evidence regarding decapod crustaceans'; 'Evidence regarding cephalopods'; 'Public policy and legislation concerning decapod crustaceans and cephalopods'; and 'Conclusion'.

The first chapter begins by describing the protection afforded to cephalopods and decapod crustaceans, or lack thereof, both in the UK and overseas, followed by a chapter outlining the need for protection. Instances that may give rise to suffering, such as catching, trapping, handling, storing etc, are mentioned, predominantly in relation to the use of these species in the food industry. Of particular concern in the report is the handling of lobsters, which are typically boiled alive without anaesthesia or pre-stunning.

The third chapter discusses how we can determine whether animals have the capacity to feel pain. The 'argument by analogy', which assumes that events that produce a particular response in humans (eg pain) are likely to have the same or similar effects in animals with similar physiological and behavioural characteristics, is discussed, with particular focus on how far across the evolutionary spectrum this argument can be used.

In terms of types of evidence that may demonstrate the capacity for pain and suffering, the report lists the following:

- "the animal has a nervous system and physiological mechanisms that make it, in principle, capable of experiencing pain or distress, and;

- the animal behaves in a way that we would interpret as a response to experiencing pain or distress; for example, by trying to escape...;

- related to this, it is thought to be more likely that an animal can experience pain if its brain and nervous system allow it to have more understanding about its environment and what is happening to it. Evidence for this comes from proof of [the] capacity for learning, remembering, generalising, making choices and modifying behaviour to the appropriate circumstances".

The report asserts that although there has been relatively little scientific research on invertebrates, cephalopods and decapod crustaceans fulfil all three criteria. More detailed evidence showing that these animals can experience pain is described, including the role of nociception (we assume in humans and other vertebrates that nociception creates nerve impulses that give rise to relevant sensations and associated fear and distress), the presence of similar neurochemical and physiological responses to stimuli that cause pain in vertebrates (eg opioid molecules), and similarities between stress systems in vertebrates and invertebrates (eg the presence of adrenocorticotrophin in both). In addition, evidence is provided in relation to the nervous and sensory systems, learning and behaviour, and physiological stress during catching, handling and transport.

The report provides a thorough overview of the evidence in favour of the capacity of cephalopods and decapod crustaceans to experience pain and suffering and is well referenced throughout with up-to-date scientific publications and research. However, it cannot be considered a balanced review due to the omission of an assessment on the opposite view, that such species do not have the capacity to experience pain and suffering.

**Cephalopods and Decapod Crustaceans: Their Capacity to Experience Pain and Suffering** (2005). Produced and published by Advocates for Animals, 10 Queensferry Street, Edinburgh, Scotland EH2 4PG, UK. 20 pp A4 paperback. Hard copies available free of charge from the address above. Also available to download at <http://www.advocatesforanimals.org/pdf/crustreport.pdf>

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### New website on the use of isogenic strains of mice and rats

Dr Michael Festing, the geneticist, statistician and laboratory animal scientist, and member of the UK Animal Procedures Committee and the Board of the National Centre for Reduction, Replacement and Refinement, has recently launched a website dedicated to the use of isogenic strains of mice and rats in biomedical research. On the website, he discusses the advantages and disadvantages of using such animals along with alternative 'outbred' animals. Isogenic strains are like 'immortal clones' of genetically identical