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Editorial

# Hormonal control of salt and water balance in vertebrates—A symposium

As part of a two-day symposium dedicated to the hormonal control of salt and water balance in vertebrates, the first lecture was given by Professor Richard Balment, in honour of the late Professor Ian Chester Jones who founded this series of international meetings of which this was the 15th. The meeting was held in Boston, Massachusetts from May 22 to 27, 2005 and the symposium was organised by Dr. Stephen McCormick from the Conte Anadromous Fish Research Center in Turners Falls and Professor Don Bradshaw from the University of Western Australia.

Ion and water homeostasis is a challenge faced by all animals. The dynamic regulation of water and ion balance is achieved through hormonal control mechanisms. Often, adaptations to severe osmotic environments involve changes in the underlying endocrine control processes of ion and water transport. Although different animals face different challenges, there are many similarities in control mechanisms used to achieve ion and water balance. By comparing hormonal control mechanisms among vertebrates the symposium on "*Hormonal control of salt and water balance in vertebrates*" looked for both general patterns and specific differences that will guide our current understanding and future research in this area. The first day of the two-day symposium brought together leading researchers in the comparative endocrinology of ion transport in fish, amphibian, and mammals. The second day continued with papers on fish, reptiles and birds including the role of mineralocorticoids in ion homeostasis.

The Ian Chester Jones lecture was introduced by Don Bradshaw

The Ian Chester Jones Lecture

It is indeed a pleasure for me to introduce the Ian Chester Jones Lecturer for 2005, being a former student of Chester's, and an admirer of the research work of today's recipient.

Many people here to today will retain a vivid memory of Ian Chester Jones—a man in many ways larger than life—and one who had an enormous influence on the development of our discipline of comparative endocrinology. Chester was educated in Liverpool, where he graduated with First Class Honours in Zoölogy in 1941 and he returned to the University as a Lecturer in 1946 after his service in the war. He then spent 2 years with Roy Greep at the Harvard Medical School, returning to Liverpool where he organised the First International Conference on Comparative Endocrinology in the Department of Zoölogy in 1954. Today of course we meet to hold what is the 15th meeting in this series started by Chester.

Chester's international standing was consolidated with the publication of his research monograph, *The Adrenal Cortex*, in 1957 which has remained an authoritative

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source to this day and it is fitting that the last paper he published in 1994 was on the development of the mysterious "X-Zone" in the adrenal gland of the marsupial possum where he resolved the long-standing problem of the nature of cell growth in the gland (Chester-Jones et al., 1994).

Chester would have been delighted today that the lecture in his honour is being given by one of his former students, Richard Balment, and one whose primary research interest has been fish.

Richard Balment will be known to many here today. He is a superb comparative endocrinologist who has made a major contribution to our understanding of the hormonal control of kidney function in both lower vertebrates and mammals. He was supervised for his PhD by both Chester and Ian Henderson—a formidable team indeed! The modest entry describing Richard's research interests available on his website notes that .... "*My main research activity examines hormonal regulation of epithelial transport of ions and water in vertebrates. This is a pivotal adaptive process for the maintenance of body fluid composition and survival in a range of environments. Studies involve fish and mammalian systems, biochemical, cellular, and whole organismal approaches.*"

This translates into an extensive series of publications on subjects as diverse as the electrical activity of caudal neurosecretory cells in flounder (Brierley et al., 2001), changes in plasma levels of AVT and Urotensin II in fish (Bond et al., 2002), non-genomic stimulation of sodium transport via aldosterone in rat inner medullary collecting ducts (Sheader et al., 2002) and the isolation, synthesis, and biological activity of flounder Angiotensin I (Balment et al., 2003)—as well as the biochemical characterisation and immunohistochemical localisation of Urotensin II in the human brainstem and spinal chord (Charrel et al., 2004).

He holds a Personal Chair at the University of Manchester where he is also Dean for International and Graduate Education. He is a Senior Ciba Geigy Fellow in France and also holds the positions of Visiting Lecturer in the University of Zimbabwe and Visiting Associate Professor at Kitasato Medical School in Japan. Those of you who are members of the European Society for Comparative Endocrinology will also know that he is hosting the next meeting in Manchester in August 2006 and extends an invitation to all.

I can think of no more fitting person to present the Ian Chester Jones Lecture at the XVth IFCES meeting in Boston and the title of his talk is appropriately: "*Neuroendocrine regulation of osmoregulatory epithelia.*"

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Don Bradshaw
*University of Western Australia, Australia*
*E-mail address:* don.bradshaw@uwa.edu.au

Stephen McCormick
*USGS Conte Anadromous Fish Research Center*
*Amherst, USA*

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