

## Some Reflections on Professor Ray Beverton, FRS, 1922-1995

**Dr Daniel Pauly, Visiting Professor of Fisheries, University of British Columbia, Vancouver, BC, Canada, and Director, Life Sciences Division, International Center for Living Aquatic Resources Management (ICLARM), Manila, Philippines.** Dr Pauly wrote the foreword to the 1992 edition of the classic *On the Dynamics of Exploited Fish Populations* by R. J. H. Beverton and Sidney J. Holt

**C**ontrary to widespread belief, being a great scientist and founding a new discipline is not, or at least not only, a matter of having a Great Idea on how Nature works. Rather, to be truly great, scientists must also provide a research programme for their would-be disciples. Such a programme must include useful things for the disciples to do from 9 to 5, and provide criteria for identifying, and rewarding achievements, notably those which expand its range of applicability.

Raymond J. H. Beverton who passed away on 23 July 1995 was by that definition the greatest scientist our field has produced.

He started his scientific career just after the Second World War, at a time when the "biology-orientated" research programme which had, until then, shaped the work of ICES became increasingly perceived as having run its course. This opened the way for the decidedly "mathematical-orientated" approaches explored by H. R. Hulme, R. J. H. Beverton, and S. J. Holt in a series of brilliant contributions, starting in 1947 and culminating ten years later in Beverton and Holt's classic *On the Dynamics of Exploited Fish Populations*.

As for all texts that found a new discipline, this book was not one that could be simply read, then metabolized into the stuff of daily routine. Rather, its conceptual and mathematical language, even its notation, had to be learnt. Opportunities for such learning were provided through courses that Ray Beverton, Sidney Holt, and their first initiates, notably John Gulland and Rodney Jones, gave at Lowestoft and various other laboratories.

I have seen sets of the "work sheets" used in such courses and appreciate how hard won the clarity is of the concepts we now rely on to discuss the dynamics of fish populations, be it the notion of "instantaneous" rates (then also advocated by Bill Ricker, on the other side of the Atlantic), or the various submodels we use to represent processes, such as growth, or the dependence of recruitment on parental stock.

Having mastered the new concepts, and the language expressing them, the course participants then fanned out back to their home laboratories, adapting the new approach to local conditions and species, including translating them into tongues other than English. G. Hempel and D. Sahrhage's work of 1959 "Zur Berechnung des Anteils nicht angelandeter und unter-

massiger Fische im Gesamtfang" (*Archiv Fisch Wiss.* 10:58-67) nicely illustrates this process, which historians of science call "reception".

My acquaintance with Ray Beverton, which later grew into friendship, began in the early 1980s, at a time when the first "cold water" phase of the reception of his work was completed. Some fisheries scientists around the North Sea had moved on to build cathedral-like models, dwarfing in scope the yield isopleth diagrams, which Ray had hoped, as he once told me, "would put some sense into fishing". One of these models erected in 1977 by K. P. Andersen and E. Ursin, consisted of 600 or so coupled differential equations, with uncounted parameters, but was still called "A multispecies extension to the Beverton and Holt theory of fishing..."

My own work, throughout the 1980s, much resembled that done by the participants in the early courses, in that I tried, along with colleagues at FAO, and following earlier leads by D. J. Garrod and J. L. Munro, to apply the Beverton and Holt theory to the diverse, small, fast-growing species which contribute the bulk of tropical coastal fisheries catches. Ray was interested in this work, and wrote, after much reflection, in my copy of his book, that he appreciated that work for "carrying the message far beyond our original horizon". Indeed, the research programme proposed by Ray Beverton and Sidney Holt has now become global.



Prizewinner Professor Jakob Jakobsson

### Prize to Iceland's Jakob Jakobsson

Professor Jakob Jakobsson, Director of the Marine Research Institute, Reykjavik, and former President of ICES (1988-1991), has received the Chorafas Prize given by the Swiss Academy of Sciences for his outstanding scientific contribution towards the sustainable exploitation of natural resources and the protection of the diversity of ecosystems. The prize was awarded to Professor Jakobsson last May during a ceremony at the University of Basel.

*The Times* of London, in its obituary of 3 August 1995, listed many of Ray's accomplishments, and so will the journals devoted to fish population dynamics and related fields, not to mention the Royal Society, of which he became a Fellow in 1975. Thus, rather than overlap with those, I will thank him—also on behalf of many colleagues, I am sure—for having defined the discipline which defined my career, and for giving me work from 9 to 5, and many hours beyond.

I did not give him much in return; only once, indeed, was I able to reciprocate. This was in Rome, sometime in the mid-1980s, when he asked me if I would mind serving as, well... his bodyguard. He was going to buy a brooch for his wife Kathy, and had all this money in his pocket... I never walked so tall: here I was trying to look brawny (being tall did help a bit), protecting Ray Beverton from pickpockets and assorted muggers!

Ray Beverton, the person, may or may not have needed that protection. His legacy does not: it is well capable of defending itself.

### Rooms Named after Beverton

Newly acquired premises on the ground floor at ICES Headquarters (Palægade 4) made possible by the Danish government have permitted the General Secretary, Professor Chris Hopkins, to set aside several attractive rooms, including one meeting room in honour of Ray Beverton. The rooms will symbolize the distinction Ray brought to ICES and the entire discipline of fishery research throughout the world.

### Michael J. Holden Dies

Mike Holden, the former Lowestoft Fisheries Laboratory scientist (UK), died in London at age 66 just before Christmas. During his years at Lowestoft he was a regular contributor to ICES publications. However, in recent years he was best known as the head of the Conservation Unit of the European Commission's Directorate General for Fisheries (DGXIV) from 1979 to 1990, and author of the controversial book *The Common Fisheries Policy: Origin, Evaluation and Future* published in 1994. Mr Holden thought one of his important accomplishments was being the first observer from the Commission to participate in the meetings of the ICES Advisory Committee on Fishery Management. "I was able to show", he later wrote in this newsletter, "that an observer can contribute positively without influencing the science". He was awarded the Order of the British Empire in 1990.