

### Ravens in Winter

By Bernd Heinrich. 1989. Simon and Schuster, New York. 379 pp., illus. U.S. \$19.95.

Why does one food source attract 50 or more ravens and another source nearby only two ravens, or none? *Ravens in Winter* provides some answers – and raises more questions.

Almost alone among northern birds, ravens appear to 'recruit' others to share food sources. It took Heinrich eight winters to prove how they do it, to his satisfaction. He hauled carcasses of road kills and dead farm animals (including sheep, calves, and, once, a whole cow) into the Maine woods to study feeding behaviour. They must have large appetites: the local ravens ate 8 tons of food over four winters.

He found that when a juvenile raven (pink mouth) or an unpaired adult (black mouth) discovers carrion in the territory of a resident pair it will feed on it only when it can return with other ravens, usually the next day. This is probably for "safety in numbers" against attack either by a resident pair of ravens or by predators. Using a unique call, recruitment can bring in birds from as far away as 60 miles from the site. In contrast, when a resident pair discover food on their territory they feed without

"advertising" its presence, though if a number of other ravens do join them, there is little aggression towards the newcomers. This account of his hours of watching baits (initially in an unheated summer cabin for 4 or 5 days at a time), his frustration when there appeared to be no consistent pattern of behaviour, his relish in surviving the cold and the blizzards, and in finally achieving firm results, makes good reading not least because of his enthusiasm for the research. The illustrations, which are small drawings of various plumage displays, are undistinguished except for that of the dominance 'ear display' – similar to the 'ear' tufts of a screech owl.

The final summary chapter puts all the field observations into focus and makes some hypotheses for future research. Although this is a scientific book, readers are spared footnotes and numbered references in the text and they are grouped at the end with 21 graphs. This is an excellent book for ethology students interested in a detailed analysis of one aspect of a well known species.

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### Bird Trapping and Bird Banding: A Handbook for Trapping Methods All Over the World

By Hans Bub. 1978. (Translated from German by Frances Hamerstrom and Karin Wuertz-Schaefer. 1991). Cornell University Press, Ithaca. 330 pp., illus., U.S. \$69.50.

This book is a comprehensive survey of methods for capturing live birds. It is written by an experienced bird-bander who drew from his own knowledge as well as that of numerous colleagues. The breadth of coverage is impressive (indeed, a tribute to people's ingenuity when it comes to catching live birds): fall traps, funnel traps, cage traps, pit traps, mist nets, trammel nets, drop nets, bow nets, clap nets, pull nets, cannon nets, nooses, catching at night, special devices for ducks, raptors, shorebirds, etc. There is even an entertaining description of how one Danish bander catches gulls by hand after burying himself in refuse at a garbage dump!

Excellent details are given on how to build the catching devices, and also on where, when, and how to set them. Such details are the main forte of the book. There is also a short chapter on the holding and handling of birds before, during, and after the banding operations, but the emphasis is on trapping and not on banding per se. Nevertheless, banders will appreciate the list of manuals and periodicals on bird banding at the end of the book, as well as the extensive bibliography (beware, however, that most of it is in German). There is a very useful species index but

no subject index (although the table of contents is so detailed that it can be construed as one).

The book has two limitations. First, although techniques from all over the world are described, there is an understandable bias in favour of European examples. North American readers should not be bothered by this, however, as most of the techniques can be adapted to North American species. Second, this being the translation of a book published in 1978, none of the techniques developed in the last decade and a half are included. However, it is fair to say that new techniques are usually modifications of a basic design, and basic designs are very well covered in this book.

The quality of presentation is high. There are a few typos but this is not unusual in a work of some 370 000 words. No less than 456 figures and photographs accompany the text. Overall this is a fine book that should provide great information, if not inspiration, to ornithologists who wonder how to best capture their favorite species, and to those who seek knowledge on the diversity of bird-catching methods.

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### The Secret World of Animals:

By Kevin Chu, Chris Clark, Peter Tyack and Carl Hopkins. 1991. Canadian Museum of Nature, Ottawa. Audio tape. 1 hr. \$10.95.

*Under the Water* is one in the tapes entitled *The Secret World of Animals*. The tape includes interviews with five scientists (currently working on the sensory system and electrical) of marine and freshwater animals and is accompanied by recordings of marine and freshwater animals. The "authors" discuss aspects of their research and present information on sound production of whales and dolphins to fish and invertebrates based both on the scientific findings and on findings of other researchers. The tape is aimed at a general audience, and is suitable for listening for a wide range of ages.

The aquatic world poses many problems for animals in terms of how they sense their environment. As visibility is limited, sound plays a greater role in communication than in terrestrial systems. For humpback whales, sound is the primary mode of communication. Chu discusses how the sounds might be related to the structure of the songs, and some of the social functions. The speakers review various methods of studying the function of sounds, which provides the listener with information about the processes of sound production as it does about the details of sound production about the sounds of these animals.

### Birds and Islands: Travels in V

By Ronald Lockley. 1991. McClelland & Stewart, Toronto. 237 pp., illus. \$39.95.

Anyone with an interest in natural history and a love of islands will be delighted with this book by veteran natural history writer, Ronald Lockley, who over the years has travelled widely around the world, has chosen to write about some of the islands he has visited. From the Aleutian islands off the coast of Alaska and the Hawaiian islands of the southern Pacific and the Galapagos, this book is sure to entertain armchair naturalists everywhere.

The author's lively writing style will result in some fascinating reading. You will become absorbed in the text as though you were on the occasion when he was precariously perched on a cliff by rope, 250 metres above the