light, especially at sunset, to determine migratory direction (*Nature* 364:523–525, 1993). Furthermore, through studies of the ontogeny of orientation behavior in young Savannah Sparrows, Ken Able's research has demonstrated that birds can learn to use the celestial rotation of stars at night (*Nature* 347:378–380, 1990) and of polarized skylight during the day (*Nature* 364:523–525, 1993; *Journal of Comparative Physiology A* 177:351–356, 1995) to calibrate magnetic orientation. These experiments clearly illustrate how the development of the birds' compass capabilities during the first few months of life results from a complex interplay of experience with specific stimuli, specifically the stars and polarized light, and other capabilities, such as the magnetic "sense" (*Journal of Experimental Biology* 199:3–8, 1996).

Ken Able has recently extended these kinds of experiments to mature sparrows, and has shown that they too can calibrate their magnetic orientation during the migratory period when exposed to clear day and night skies (*Nature* 375:230–232, 1995). Thus, birds appear able to utilize locally available information and recalibrate their compass direction at various times during their life, and not just during a critical sensitive period at an early age, thus enabling them to respond to spatial and temporal variability encountered in their environment. From a practical point of view, this also means that such research can now be done with older birds, obviating the time-consuming and often difficult process of hand-rearing the young birds needed for ontogenetic studies.

Ken Able also has written a number of important reviews that have critically and succinctly analyzed recent developments in studies of avian orientation and navigation (e.g. *Trends in Ecology and Evolution* 8: 367–371, 1993; *Progress in Neurobiology* 42:449–473, 1994) as well as in the historical development of the field (*Condor* 97:592–604, 1995). His impressive ability to synthesize and analyze diverse experiments and findings has contributed greatly to the understanding of bird orientation and navigation, as well as to the dispersion of that knowledge.

Because of his success in unraveling some of these mysteries of bird orientation and navigation, and his record of excellence in field and laboratory research, the American Ornithologists' Union takes great pleasure in presenting the William Brewster Memorial Award for 1996 to Ken Able.

Award criteria.—The William Brewster Memorial Award is given to the author or co-authors (not previously so honored) of the most meritorious body of work on birds of the Western Hemisphere published during the 10 calendar years preceding a given AOU meeting. The award consists of a medal and honorarium provided through the endowed William Brewster Memorial Fund of the American Ornithologists' Union.

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Elliott Coues Award, 1996:

Ellen D. Ketterson

The American Ornithologists' Union is pleased to present the 1996 Elliott Coues Award to Ellen D. Ketterson. Dr. Ketterson's research has had a major and important impact on studies of birds in the Western Hemisphere through her application of physiological, behavioral, and ecological approaches to the study of bird distribution, migratory patterns, and reproductive systems.

Through studies focused largely on the Dark-eyed Junco, Dr. Ketterson has made many significant and profound advances in understanding the year-round ecology of migratory species. She was among the first to focus attention on the importance of the wintering period in the annual cycle and life history of migratory passerines. Her research with Val Nolan and other colleagues and students has clarified how behavioral dominance and physiological properties, correlated with age and sex, act to determine the distribution of individuals across their winter range (*Ecology* 57:679–693, 1976; *Auk* 99:299–308, 1982; *Current Ornithology* 1:357–402, 1983; *Ecology* 71:1267–1278, 1990). In a series of innovative studies, her research group also has examined the survival value of site fidelity in wintering birds (*Animal Behaviour* 35:1744–1753, 1987; *Animal Behaviour* 40:580–586, 1990; *Ethology* 87:123–133, 1991) and the influence of migration and winter survival on life-history patterns (*Auk* 99:243–259, 1982; *Ecology* 74:1183–1190, 1993).

Recently, Dr. Ketterson and Dr. Nolan have pioneered an approach to avian physiological, behav-

ioral, and evolutionary ecology that they term "phenotypic engineering." By manipulating hormone levels of free-living birds and examining the impact of these changes on bird fitness, it has been possible to evaluate the adaptive variation in such hormonally mediated traits as territoriality and spacing, mating patterns, breeding success, and survival (*American Naturalist* 140:980–999, 1992; *Condor* 94:364–370, 1992; *Animal Behaviour* 47:1445–55, 1994). Although still in the development stage, this promising approach has already provided important new insights into the tradeoffs between mating effort and parental care and between survival and reproductive success (*Ibis* 138: 70–86, 1996).

For these innovative and very important contributions to avian biology, the American Ornithologists' Union appropriately and happily honors Ellen Ketterson with the Elliott Coues Award.

Award criteria.—The Elliott Coues Award is given for meritorious contributions having an important influence on the study of birds in the Western Hemisphere, but which have not been recognized through a Brewster Award. Contributions to ornithology not eligible for recognition with a Brewster Award by virtue of its geographic limitations may be honored through a Coues Award, as may works including important innovative ideas that through brevity of publication outside the primary ornithological literature may not have been selected based on Brewster Award criteria. However, the Coues Award is not necessarily limited to such works. The work consists of a certificate and an honorarium provided through the endowed Ralph W. Schreiber Fund of the American Ornithologists' Union.