

# LITERATURE REVIEW

Compiled by D. Purchase.

This section is compiled from journals which are often not available to non-professional ornithologists in Australia. The following criteria are used to select papers for review:

- They relate to species which occur in Australia and its Territories;
- They provide details of techniques which may be of use in Australia;
- They provide details of studies that may be of general interest to Australian ornithologists.

Journals perused: *Ardea* 75(2); *Auk* 104(3), 105(1,2); *Bokmakierie* 40(1); *J. Field Ornithol.* 58(4); *Living Bird* 7(1); *Malayan Nature Journal* 41(4); *Notornis* 34(4); *Ornith. Beob.* 85(2), supplement 7; *Ostrich* 58(4), 59(1); *Safring News* 16(2), 17(1); *Wilson Bull.* 100(1,2).

## AUSTRALIAN SPECIES

**Wing-spreading in Chilean Blue-eyed Shags (*Phalacrocorax atriceps*).** Rasmussen, P. C. and Humphrey, P. S. (1988). *Wilson Bull.* 100: 140-144. (Wing-spreading was previously thought not to occur in Blue-eyed Shags. It serves primarily to dry feathers.)

**Effects of spacing and synchrony on breeding success in the Great Frigatebird (*Fregata minor*).** Reville, B. J. (1988). *Auk* 105: 252-259. (Colonies were subdivided into clusters of up to 22 nests. Clusters differed in degree of synchrony of breeding activities.)

**Cattle Egrets in Fiordland National Park 1973-1987.** Morrison, K. (1987). *Notornis* 34: 315-316. (Numbers recorded each winter varied from 0 to 28 and have increased in recent years.)

**The influence of diet quality on clutch size and laying pattern in Mallards.** Eldridge, J. L. and Krapu, G. L. (1988). *Auk* 105: 102-110. (A poor diet resulted in reduced clutch size, egg size, laying rate, number of nesting attempts and eggs laid.)

**Temporal variation in prey preference patterns of adult Ospreys.** Edwards, T. C. (1988). *Auk* 105: 244-251. (Ospreys exhibited distinct preference patterns.)

**The social structure of the Weka (*Gallirallus australis*) at Double Cove, Marlborough Sounds.** Beauchamp, A. J. (1988). *Notornis* 34: 317-325. (The study group comprised territorial pairs, and non-territorial adults and subadults.)

**Crow predation on Coot eggs: effects of investigator disturbance, nest cover and predator learning.** Salathe, T. (1987). *Ardea* 75: 221-229. (Regular nest visits increased predation but this was significant only for daily visits.)

**High levels of energy expenditure in shorebirds; metabolic adaptations to an energetically expensive way of life.** Kersten, M. and Piersma, T. (1987). *Ardea* 75: 175-187. (Basic metabolic rate and existence metabolism were measured in captive Ruddy Turnstones, Grey Plovers and Oystercatchers.)

**Waders (*Charadrii*) and other waterbirds at Langebaan Lagoon, South Africa, 1975-1986.** Underhill, L. G. (1987). *Ostrich* 58: 145-155. (Annual and seasonal fluctuations in population size and composition, biomass and daily energy expenditure are discussed. For waders which breed on the Taimyr Peninsula, Siberia, a three-year cycle was detected which was linked to the three-year lemming cycle.)

**Opportunistic foraging of Ruddy Turnstone on mowed lawn.** Post, W. (1988). *Wilson Bull.* 100: 139. (Turned over and inspected the area underneath clumps of congealed grass ejected earlier from a mower.)

**Ringed recoveries and migration of Greenshank between Europe and Africa.** Tree, A. J. (1987). *Safring News* 16: 51-66. (Discusses 30 recoveries in the context of existing knowledge of Greenshank migration.)

**Merlin predation on wintering Dunlins: hunting success and Dunlin escape tactics.** Buchanan, J. B., Schick, C. T., Brennan, L. A. and Herman, S. G. (1988). *Wilson Bull.* 100: 108-118. (Dunlin were caught on 25 out of 111 hunting flights.)

**A historical explanation for polyandry in Wilson's Phalarope.** Jehl, J. R. (1987). *Auk* 104: 555-556. (In 1923 it was suggested that two-thirds of females did not mate because of diseased ovaries, thereby forcing males to accept polyandry.)

**Male initiation of pair formation in Red Phalaropes.** Tracy, D. M. and Schamel, D. (1988). *Wilson Bull.* 100: 144-147. (Males competed for females — a reversal of courtship roles previously reported for phalaropes.)

**Changes in gull numbers over 25 years and notes on other birds of the Otaki-Ohau coast.** Powlesland, R. G. and Robertson, H. A. (1987). *Notornis* 34: 327-338. (Numbers of Black-backed Gulls (=Kelp Gulls) doubled and Red-billed Gulls (=Silver Gulls) decreased to about one-third.)

**Food size and aggressive interactions between two species of gulls: an experimental approach to resource partitioning.** (1987). *Ostrich* 58: 164-167. (Although Hartlaub's Gulls (0.3 kg) reached prey earlier than Kelp Gulls (1.0 kg) they lost larger items, which they couldn't quickly consume. Thus the division of food resources appeared to be on size.)

**Resource partitioning among sympatric species of terns.** Hulsman, K. (1987). *Ardea* 75: 255-262. (Six species were studied on the Great Barrier Reef.)

**Reproductive success and colony-site tenacity in Caspian Terns.** Cuthbert, F. J. (1988). *Auk* 105: 339-344. (They showed preference for the colony of previous breeding if this had been successful but if unsuccessful they frequently moved to another colony.)

**Experimental evidence for sibling recognition in Common Terns (*Sterna hirundo*).** Burger, J., Gochfeld, M. and Boarman, W. I. (1987). *Auk* 105: 142-148. (Sibling recognition occurred based on experience and vocal cues.)

**Die situation der Flusseeeschwalbe *Sterna hirundo* in der Schweiz und im angrenzenden Ausland 1976-1987.** Bruderer, D. and Schmid, H. (1988). *Orn. Beob.* 85: 159-172. (The number breeding in Switzerland and adjoining areas have increased since the population low in the early 1950's but are only a fraction of the former population. Various man-made breeding sites are described.) In German with English summary.

Status of the Roseate Tern in Canada. Kirkham, I. R. and Nettleship, D. N. (1987). *J. Field Ornithol.* 58: 505-515. (The population in north-eastern North America has decreased over the last 100 years.)

Colonization of a new area by the Marsh Harrier. Altenburg, W., Bruinenberg-Rinsma, J., Wildschut, P. and Zijlstra, M. (1987). *Ardea* 75: 213-220. (Results suggest that predominantly young birds started the colonization process.)

Parent-offspring resource allocation in swallows during nestling rearing: an experimental study. Jones, G. (1987). *Ardea* 75: 145-168. (Balances were placed under Barn Swallow nests to study changes of mass in adults and in nestlings. Food availability was also measured.)

Parental foraging ecology and feeding behaviour during nestling rearing in the swallow. Jones, G. (1987). *Ardea* 75: 169-174. (Documents mass of food delivered to nestlings and mass eaten by adult Barn Swallows.)

Variation in the costs, benefits and frequency of nest reuse by Barn Swallows (*Hirundo rustica*). Barclay, R. M. R. (1988). *Auk* 105: 53-60. (New nests require more energy to build but in old nests parasites were common and reduced chick survival.)

Uterovaginal sperm-storage glands in sixteen species with comments on morphological differences. Shugart, G. W. (1988). *Auk*. 105: 379-384. (Includes House Sparrow.)

Effects of experimental manipulation of testosterone levels on parental investment and breeding success in male House Sparrows. Hegner, R. E. and Wingfield, J. C. (1987). *Auk* 104: 462-469. (Results demonstrate that high levels of testosterone inhibit the expression of parental care.)

Effects of brood-size manipulations on parental investment, breeding success, and reproductive endocrinology of House Sparrows. Hegner, R. E. and Wingfield, J. C. (1987). *Auk* 104: 470-480. (With increased brood size feeding rates of parents increased and nestling mass decreased.)

Conspecific brood parasitism in the House Sparrow. Kendra, P. E., Roth, R. R. and Tallamy, D. W. (1988). *Wilson Bull.* 100: 80-90. (Electrophoresis of egg albumin yielded evidence of conspecific brood parasitism in eight of 94 clutches.)

House Sparrow and Chipping Sparrow feed the same fledgling Brown-headed Cowbird. Scott, D. M. (1988). *Wilson Bull.* 100: 323-324. (It is likely that the cowbird had been reared by the Chipping Sparrow. House Sparrows are rarely parasitized by cowbirds.)

Biochemical systematics within palaeotropical finches (*Aves: Estrildidae*). Christidis, L. (1987). *Auk* 104: 380-392. (Differentiation at 38 presumptive loci was examined among 30 species of palaeotropical finches by protein electrophoresis.)

Asynchronous hatching and food limitation: a test of Lack's hypothesis. Skagen, S. K. (1988). *Auk* 105: 78-88. (There was no differential mortality of nestlings of captive Zebra Finches due to asynchrony or food abundance.)

Duration and temporal pattern of mate guarding in the Starling. Pinxten, R., van Elsacker, L. and Verheyen, R. F. (1987). *Ardea* 75: 263-269. (Males guarded their mates during their fertile period to prevent copulation by other males.)

The frequency of cuckoldry in the European Starling (*Sturnus vulgaris*). Hoffenberg, A. S., Power, H. W., Romagnano, L. C., Lombardo, M. P. and McGuire, T. R. (1987). *Wilson Bull.* 100: 60-69. (In the population examined, vertical thin-layer polyacrylamide gel electrophoresis showed that cuckoldry occurred in the range of frequencies of 2.1% to 8.4%.)

## TECHNIQUES AND ANALYSES

A cast-net for trapping nightjars (and others). Earle, R. A. (1988). *Safring News* 17: 25-28. (Catches species which can be stupefied by spotlight.)

A non-slip device for securing guy lines to net poles. de Swardt, D. (1988). *Safring News* 17: 23. (A hook that can be positioned anywhere on the pole.)

Abrasion and loss of bands from Dry Tortugas Sooty Terns. Bailey, E. E., Woollenden, G. E. and Robertson, W. B. (1987). *J. Field Ornithol.* 58: 413-424. (Band loss from four aluminium alloys became significant at 86% of original weight.)

Are darvic coil colour rings suitable for Cape Gannets? Komen, E. (1987). *Safring News* 16: 83-84. (Describes injuries caused by bands unwinding around the foot. Adhesives may not prevent unwinding and other methods of marking are recommended.)

Extent and severity of nasal saddle icing on Mallards. Byers, S. M. (1987). *J. Field Ornithol.* 58: 499-504. (Icing may occur when windchill approaches  $-18^{\circ}\text{C}$ .)

Dispersal of male Red-winged Blackbirds from two spring roosts in central North America. Knittle, C. E., Linz, G. M., Johns, B. E., Cummings, J. L., Davis, J. E. and Jaeger, M. M. (1987). *J. Field Ornithol.* 58: 490-498. (An acrylally-applied fluorescent pigment was used to mark the birds.)

A model life table for Magellanic Penguins (*Spheniscus magellanicus*) at Punta Tombo, Argentina. Scolaro, J. A. (1987). *J. Field Ornithol.* 58: 432-441. (Analysis of bird band recoveries.)

Jackass Penguin *Spheniscus demersus* movements, inter-island visits and settlement. Randall, R. M., Randall, B. M., Cooper, J., La Cock, G. D., Ross, G. J. B. (1987). *J. Field Ornithol.* 58: 445-455. (Analysis of bird band recoveries.)

An automated method for estimating the number of bird territories from an observation map. Scheffer, M. (1987). *Ardea* 75: 231-236. (Results from the automated method were similar to those achieved by manual interpretation.)

Tropical forest bird counts and the effect of sound attenuation. Waide, R. B. and Narins, P. M. (1988). *Auk* 105: 296-302. (Population densities of canopy-singing species were underestimated by 33-46% by ground observer.)

## PAPERS OF GENERAL INTEREST

Olfactory navigation in homing pigeons: are the current models atmospherically realistic? Waldvogel, J. A. (1987). *Auk* 104: 369-379. (New data on the long-range transport of atmospheric aerosols place limits on the type of olfactory navigation system potentially utilized by homing pigeons.)

Safring statistics for the 1985-1986 and 1986-1987 ringing years. Oatley, T. B. (1988). *Safring News* 17: 15-21. (68 166 birds were banded and 5 979 were recovered.)

The captive breeding controversy. Imboden, C. (1988). *Bokmakierie* 40: 7-9. (Captive breeding programmes are justifiable and valuable from a conservation viewpoint only if their objective is to enhance the species' status and survival in the wild.)

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## REVIEW

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**The Birds of Sumatra.** J. G. van Marle and Karel H. Voous, B.O.U. Check-list No. 10: British Ornithologists' Union, 1988; 265 pp.

This volume is the tenth of the British Ornithologists' Union's ongoing series of checklists of diverse parts of the world. This is the second from Indonesia, following the recently published *The Birds of Wallacea*, by C. M. N. White and M. D. Bruce.

The manuscript was started by J. G. van Marle, and upon his premature death, completed by K. H. Voous. Introductory sections present background information topography, climate, and vegetation, supported by detailed maps, and discuss

aspects of Sumatran ornithology: endemism, zoogeography, breeding seasonality, migration and history of previous work. The bulk of the book is the annotated list of the 600 species recorded from the island. The annotations for each species include the status, habitat, distribution and nesting information as these relate to Sumatra, key references, and, occasionally other notes.

This volume maintains the high standard set in previous ones. It will be a valuable reference for anyone interested in the birds of this part of Southeast Asia.

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## OBITUARY

Dr D. L. 'Dom' Serventy died in Perth on 8 August 1988, aged 84 years, having been born at Brown Hill, Western Australia on 28 March, 1904.

He graduated B.Sc. with first class honours from the University of Western Australia in 1931 and obtained an 1851 Scholarship to the University of Cambridge. After completing his doctorate there in 1933 he returned to Australia to an appointment as assistant lecturer in biology in the University of Western Australia. From 1937-38 he studied fisheries biology at the School of Fisheries, University of Washington, while holding a studentship of the Commonwealth Science and Industry Endowment Fund. On his return he joined the C.S.I.R. Division of Fisheries. In 1951 he transferred to the new Wildlife Survey Section of what was then the C.S.I.R.O., where he stayed until his retirement in 1969.

Dom was a very active researcher and an early conservationist at a time when such people were generally regarded as cranks. He belonged to many organizations, held numerous posts in ornithological and biological societies, and gained major awards for his work.

His list of publications is impressive, beginning with 'Birds of the Pallinup Estuary, Western Australia' in *Emu*, 26: 64-69 (1926), although he had contributed popular articles to the local papers before that. By the time that he graduated he had 15 papers to his credit, most of them on birds and mostly in *Emu*. He had catholic interests but was more than anything a marine biologist and when with the Fisheries Division worked on tuna populations and their associated seabirds, as well as on problems concerning cormorants and fisheries.

Dom Serventy's classic long-term study of the Tasmanian Mutton-bird (Short-tailed Shearwater) was begun when he was in the Fisheries Division, his banding of the birds at Fisher Island, Bass Strait, beginning in 1947. It is the publications that came from this work by which Dom is best known among

seabird biologists. These included a major and oft-quoted account of the migration of the young birds and the gonad cycle of the adults in *Proc. Zool. Soc. Lond.* 127: 489-510 (1956) and an experimental demonstration of an internal rhythm of reproduction (*Nature* 184: 1704-1705 [1959]), both written with A. J. Marshall. At about the same time he devised a method for sexing the birds (*Emu* 56: 219-221 [1959]), which has since been widely used with petrels generally.

His recaptures of banded birds enabled him to unravel the breeding patterns of the mutton-birds and, in due course, to discover the duration of their immaturity. He read an important paper on their egg-laying timetable to the 13th International Ornithological Congress (*Proc. 13th Int. Orn. Congr.*: 338-343 [1963]). Addressing a plenary session of the Congress four years later, he was able to cover a range of aspects concerning the population ecology of the species, including the age composition and timing of the birds ashore, the extent of the pre-laying exodus and mortality patterns (*Proc. 14th Int. Orn. Congr.*: 165-190 [1967]). His most recent publication on this species about breeding success, recruitment and dispersal, based on 30 years' data, was published in 1984 with P. J. Curry (*Emu* 84: 71-79).

Among his major interests was the problem of how Australian inland birds adapt to their arid environment — see his chapter on 'Biology of Desert Birds' in *Avian Biology* Volume 1 (1971). Many other topics engaged his attention from time to time — on Moas and the origins of flight, on the shell deposits created by gulls dropping molluscs to break them, on the histology of the avian testis and on birds zoogeography — for example. He also made valuable contributions to avian nomenclature, correcting some of the errors in this field committed by Gregory Mathews and others.

Dom Serventy had a big influence on young naturalists, inspiring them by his enthusiasm and by contacts in field and study, but also because he produced (with H. M. Whittell) the first handbook to the birds of his state — *The Birds of Western Australia*. This first appeared in 1948, the last, fifth edition in 1976. This work enabled many people interested in natural