RECENT LITERATURE

Compiled by M.J. IMBER
STIS, Department of Conservation, P.O. Box 10-420, Wellington, New Zealand

This section is intended to draw *Notornis* readers' attention to papers and articles about New Zealand birds which have appeared elsewhere. It covers both publications in New Zealand and abroad on New Zealand birds studied in New Zealand, and selectively those on native birds studied elsewhere (e.g. seabirds). It may include articles of a more general nature relevant to New Zealand ornithology.

The intention is to abstract all relevant papers. As some papers/articles may be missed, particularly if published in small journals, authors are invited to send reprints or copies of their works to the compiler.

E-mail: mimber@doc.govt.nz

Evolution and systematics

Enigmatic phylogeny of skuas (Aves: Stercorariidae). B.L. Cohen, A.J. Baker, K. Blechschmidt, D.L. Dittmann, R.W. Furness, J.A. Gerwin, A.J. Helbig, J. de Korte, H.D. Marshall, R.L. Palma, H.-U. Peter, R. Ramli, I. Siebold, M.S. Willcox, R.H. Wilson, R.M. Zink. *(Institute of Biomedical and Life Sciences, Div. of Molecular Genetics, University of Glasgow, G11 6NU, Scotland; Email: b.l.cohen@bio.gla.ac.uk)* Proc. R. Soc. Lond. B 264: 181-190. 1997.

The skuas are a monophyletic group, closely related to gulls. On morphological and behavioural evidence skuas are divided into two widely divergent genera, consistent with observed levels of genetic divergence: *Catharacta* (large-bodied, with one exception Southern Hemisphere breeding), and *Stercorarius* = jaegers (smaller, only Northern Hemisphere breeding). Genetic and parasitological (Phthiraptera) evidence shows that the Pomarine Skua (*S. pomarinus*), already recognised as rather intermediate, is much more closely related to *Catharacta*, especially to the northern Great Skua (*C. skua*), than to the two jaegers: Arctic (*S. parasiticus*) and Longtailed (*S. longicaudus*). Three possible explanations that might account for this discordant aspect of skua phylogeny are explored; none can be discounted. Resolution of this enigma awaits further work.

The adaptive zone of the Genus *Gerygone* (Acanthizidae) as shown by morphology and feeding habits. A. Keast, H.F. Recher. *(Dept. of Biology, Queen's University, Kingston, Ontario K7L 3N6, Canada.)* Emu 97: 1-17. 1997.

The species-rich Australo-Pacific genus *Gerygone* comprises small-bodied, specialist insectivores that mainly glean and snatch prey from foliage. Species tend to be ecologically and morphologically similar, so evolution has largely been allopatric with specialisation to different habitats. The greatest evolutionary shifts occur in the insular species, *G. igata* and *G. albofrontata*, which are morphologically and ecologically distinct from other *Gerygone*.

Sympatric flightless rails *Gallirallus dieffenbachii* and *G. modestus* on the Chatham Islands, New Zealand; morphometrics and alternative evolutionary scenarios. S.A. Trewick. *(Dept. Zoology, University of Otago, PO Box 56, Dunedin, New Zealand.)* J. Roy. Soc. N.Z. 27(4): 451-464. 1997.

These extinct rails were sympatric on at least three islands of the Chatham group. Morphological and genetic evidence indicates that they evolved from the same flying ancestor, putatively the Banded Rail *(G. philippensis)*. Evidently both Chatham rails were flightless. The ancestors of *G. modestus* hypothetically were the latest colonists, as this species became more specialised through competition with the generalist *G. dieffenbachii,* presumed derived from earlier colonists.

On the skewed sex ratio of the Kakapo *Strigops habroptilus*: sexual and natural selection in opposition? S.A. Trewick. *(School of Biological Sciences, Victoria University, PO Box 600, Wellington, New Zealand.)* Ibis 139(4): 652-663. 1997.

Extreme sex ratio skew in favour of males [2:1] existed before human colonisation of New Zealand. Relatively small, solo parent females may suffer the consequences of parental investment over the long chick-rearing period. Brood reduction may favour the survival of dominant male siblings.

Conservation

Impacts of introduced common wasps *(Vespula vulgaris)* on experimentally placed mealworms in a New Zealand beech forest. K. Barr, H. Moller, E. Christmas, P. Lyver, J. Beggs. *(Univ Otago, Dept Zool, POB 56, Dunedin, New Zealand.)* Oecologia 105: 266-270. 1996.

This introduced social wasp may compete with native birds for honeydew and invertebrates in New Zealand forests. Experimentally hidden mealworms persisted longer at two sites following wasp poisoning than at two sites where wasps were not poisoned. Mealworms persisted longer in the morning than in the afternoon within all study sites. An unusually low mealworm removal rate during a morning trial before wasp poisoning heavily influences the results of this experiment. They may also remove cached food items that would otherwise be retrieved by the South Island robin (*Petroica australis australis*) during cold or dark feeding conditions.

Impact of brodifacoum poisoning operations on South Island Robins *Petroica australis australis* in a New Zealand *Nothofagus* forest. K.P. Brown. *(Ecosystems Consultants, PO Box 6161, Dunedin, New Zealand.)* Bird Conservation International 7: 399-407. 1997.

Banded and radio-tagged adult Robins were monitored during operations targeting stoats *Mustela erminea* and rats *Rattus rattus*. With covered bait feeders, 29 of 30 survived; with freely broadcast bait, 12 of 23 survived; with non-treatment, 18 of 21 survived. Thus aerial application of this poison probably puts Robins at risk. Further research must determine whether benefits to Robin populations from

predator control by brodifacoum outweigh actual losses of some Robins from poisoning.

Behaviour

Social manipulation causes cooperation in Keas. S. Tebbich, M. Taborsky, H. Winkler. *(KLIVV, Savoyenstr. 1a, A-1160 Wien, Austria.)* Animal Behaviour 52: 1-10. 1996.

In captivity, dominant Keas (*Nestor notabilis*) forced subordinates to cooperate in a food finding task.

General biology

Morphometrics and breeding biology of the whitechinned petrel *Procellaria aequinoctialis* at sub-Antarctic Marion Island. A. Berruti, J. Cooper, I.P. Newton. *(Durban Nat Sci Museum, Box 4085, Durban 4000, South Africa.)* Ostrich 66: 74-80. 1995.

Aspects of adult morphometrics and the breeding biology of the summer-breeding Whitechinned Petrel are based on a study conducted in 1980/81, along with additional observations in 1990/91. These petrels are similarly sized and breed in a similar manner to other studied populations of the nominate race. The eradication of cats at Marion Island in 1991 should lead to a slow population recovery.

Ecology

Habitat use and selectivity by the Brown Kiwi *(Apteryx australis mantelli)* in a patchy environment. B. Taborsky, M. Taborsky. *(Konrad-Lorenz Inst., Savoyenstr. 1a, A-1160 Wien, Austria.)* Auk 112: 680-689. 1995.

Studied in the Waitangi Forest - native and introduced vegetation habitat types. Nocturnally they preferred native forest and seral vegetation over pine forest, marshes, pasture and roads. They roosted preferentially in marshes and successional vegetation. Nests were preferentially in or within 25 m of native or seral vegetation. Minor changes in forest management practices, such as wider road margins and preserving remnants of native forest and marshes, could greatly improve the survival and reproduction of kiwi.

Food studies

Fish and squid in the diet of king penguin chicks, *Aptenodytes patagonicus*, during winter at sub-antarctic Crozet Islands. Y. Cherel, V. Ridoux, P.G. Rodhouse. *(Ctr Etud Biol Chize, CNRS, F-79360 Villiers en Bois, France.)* Marine Biology 126: 559-570. 1996.

The diet of king penguins rearing chicks (during austral winters 1990, 1991 and 1992) showed that both fishes and squid are important components of the winter diet. Juveniles of the demersal onychoteuthid squid *Moroteuthis ingens* form the bulk of the cephalopod diet, and this was the main prey by reconstituted

mass (57%). Myctophids (lantern-fishes) accounted for most of the fish diet, constituting together 32% by mass. The three main species of myctophids eaten in summer by king penguins were either very rare in winter (*Electrona carlsbergi*) or accounted for a smaller proportion of the diet (*Krefftichthys anderssoni* and *Protomyctophum tenisoni*). Five other myctophids, which are rarely consumed in summer, contributed 24% of the diet by mass in winter. Both the known ecology of the fish and squid prey and the barely digested state of some items suggest that in winter breeding adults forage in the outer shelf, upper slope and oceanic areas in the close vicinity of the Crozet Islands to feed their chicks.

Instream habitat use by blue duck (*Hymenolaimus malacorhynchos*) in a New Zealand river. K.J. Collier, M.D. Wakelin. *(Niwa, POB 11-115, Hamilton, New Zealand.)* Freshwater Biology 35: 277-287. 1996.

The feeding habitat of this river specialist was characterized in terms of water depth and velocity on eight occasions over a 13-month period in a river in the central North Island using video to record activity and relocate feeding sites. Of the five feeding activities identified ('pecking', 'grazing', 'head-dipping', up-ending' and 'diving'), adult blue duck used mostly head-dipping (> 60% of feeding events on all dates), although diving or grazing from submerged surfaces of exposed boulders comprised major proportions of feeding behaviour (up to 33%) on occasions. Variations in feeding behaviour between dates partly reflected changes in antecedent flow conditions and the annual cycle of the birds. Grazing and diving occurred in significantly faster water (mostly 0.3-0.45 m s(-1)) and at significantly different depths (mean= 0.10 and 0.55 m, respectively) than head-dipping (0.20 m depth and 0.28 m s(-1) velocity). Adult feeding depths and velocities at four sites on different dates averaged 0.20 m and 0.31 m s(-1), respectively. Most feeding by 3-4-week-old ducklings occurred over a similar distribution of water velocities to adults but over a wider range of depths. Adult birds fed in significantly shallower and lower velocity water than was available on the two dates that comparisons could be made. Ducklings also fed over a slower range of water velocities but were not selective in terms of water depth. Energetically more expensive search methods were employed at times of high apparent energy demand to access flow microhabitats where larger bodied prey were more likely to be encountered. These data indicate that, like other aquatic organisms, river birds can be influenced by basic hydraulic elements of river flow, but show at the same time that adult blue duck can accommodate variable biotic environments efficiently.

The food of Cook's Petrel *Pterodroma cookii* during its breeding season on Little Barrier Island, New Zealand. M.J. Imber. *(S & R Div., Dept. of Conservation, PO Box 10-420, Wellington, New Zealand.)* Emu 96: 189-194. 1996.

Food samples from 69 Cook's Petrels comprised cephalopods, fish, crustaceans and tunicates, in that order, plus 38% by volume of dietary oil. Cranchiids, *Spirula spirula*, and histioteuthids were the main cephalopods eaten; myctophids the main fish prey; decapod prawns the main crustaceans. There was seasonal variation in

the occurrence of two cephalopods. These petrels mainly selected smaller, and therefore immature, cephalopods, and the diet was dominated by small, mesopelagic, bioluminescent prey, most of which could have been taken by active feeding at night.

Regulation of food provisioning in the Antarctic Petrel *Thalassoica antarctica*. S.H. Lorentsen. *(Norwegian Inst Nat Res, Tungasletta 2, N-7005 Trondheim, Norway.)* Journal of Animal Ecology 65: 381-388. 1996.

There was a strong correlation between the average meal size delivered to a chick and its growth rate. Adult body condition at the time of hatching was strongly correlated with the average size of meals delivered to individual chicks. Male and female body condition at the time of hatching and average body condition of the pair at the first incubation shift and at hatching significantly influenced the body mass of the chick on day 30. Male body condition and the average body condition of the pair correlated significantly with the growth rate of the chick. The difference in body mass at the age of 30 days of chicks from parents with good body condition compared with chicks from parents with poorer body condition was nearly double that expected. The results strongly suggest that the effort spent during the chick-rearing period, and thus reproductive success, is regulated by the body condition of the parents.

Miscellaneous

The Reischek collection (of skeletons). [in German with English summary] E. Bauernfeind. Stapfia 41: 51-69. 1995.

Reischek's collection of skeletons [mainly or entirely from New Zealand] in the Natural History Museum, Austria.