

the difference among repeated measurements of the same egg was below the limit of precision. The mean L/B differed between pairs and this difference was significant at $p < 0.1$ as determined from 2-tailed Student's t-test ($t_2 = 3.87$).

Although the statistical evidence was not strong, given the low power of the test and the corroborating data on egg colouration, I conclude that this observation of a clutch of four Bell Miner eggs is likely to be the result of two females laying in the same nest, either through intra-specific brood parasitism or through communal breeding. The latter possibility, however, is less likely than the former since Bell Miner breeding females are very aggressive towards other, potentially parasitic, females thus making the establishment of communal breeding (which requires shared incubation and brooding) difficult. In fact, blood levels of androgens were higher among breeding females than among any other members of the social unit (Poiani 1992). Androgens are sexual hormones believed to be correlated with intra-sexual competition for breeding status (Wingfield *et al.* 1990).

ACKNOWLEDGMENTS

I am grateful to Richard A. Zann, Richard Major and two anonymous referees for their constructive criticisms on the manuscript. This work was financed and supported by the Department of Zoology, La Trobe University, the M. A. Ingram Trust, the Department of Conservation and Environment of Victoria, the Royal Society of Victoria, and the Sir Colin Mackenzie Zoological Park. I was supported by a La Trobe University Postgraduate Scholarship.

REFERENCES

- Clarke, M. F. (1988). The reproductive behaviour of the Bell Miner *Manorina melanophrys*. *Emu* 88: 88–100.
 Poiani, A. (1992). Hormonal, behavioural and ecological aspects of co-operative breeding in the Bell Miner (*Manorina melanophrys*, Meliphagidae). PhD Thesis, Department of Zoology, La Trobe University, Melbourne, Australia.
 Smith, A. J. and Robertson, B. I. (1978). Social organization of Bell Miners. *Emu* 78: 169–178.
 Wingfield, J. C., Hegner, R. E., Dufty, A. M., Jr. and Ball, G. F. (1990) The "challenge hypothesis": theoretical implications for patterns of testosterone secretions, mating systems, and breeding strategies. *Amer. Nat.* 136: 829–846.

A. POIANI

Depart. of Zoology, La Trobe University, Bundoora, Vic. 3083.
 Present address: Department of Genetics and Human Variation, La Trobe University, Bundoora, Victoria 3083.

Received 22 March 1992

RECOVERY ROUND-UP

This section is prepared with the co-operation of the Secretary, Australian Bird and Bat Banding Schemes, Australian National Parks and Wildlife Service. The recoveries are only a selection of the thousands received each year; they are not a complete list and should not be analysed in full or part without prior consent of the banders concerned. Longevity and distance records refer to the ABBBS unless otherwise stated. The distance is the shortest distance in kilometres along the direct line joining the place of banding and recovery; the compass direction refers to the same direct line. (There is no implication regarding the distance flown or the route followed by the bird). Where available ABBBS age codes have been included in the banding data.

Recovery or longevity items may be submitted directly to me whereupon their merits for inclusion will be considered.

Hon. Editor.

The following abbreviations appear in this issue:

AWSG — Australasian Wader Study Group.
 VWSG — Victorian Wader Study Group.
 WAWSG — Western Australian Wader Study Group.
 WBSROC — Wild Bird Society of R.O.C. (Taiwan).

Australian Pelican *Pelecanus conspicillatus*

170–17233. Nestling banded by M. H. Waterman on North Pelican Island, Coorong, SA on 9 Nov. 91. Recovered dead 80 km SSW of McKinlay, Qld on 20 Aug. 92. 1 590 km N.

Grey Teal *Anas gibberifrons*

090–53479. Adult (1+) male banded by P. Schramm near Berri, SA on 3 Jan. 92. Recovered dead (shot) near Kerang, Vic. on 29 May 92. 335 km ESE.

Brown Goshawk *Accipiter fasciatus*

101–03737. Immature (1) female banded by L. C. Currie at Werribee Sewerage Farm, Vic. on 24 May 92. Recovered (released alive with band) near Hurstbridge, Vic. on 10 Nov. 92. 852 km E.

Little Eagle *Hieraaetus morphnoides*

130–45001. Banded by S. E. Firth at Jindabyne, NSW on 8 Nov. 66. Recovered dead at Black Mountain, ACT on 13 Oct. 92, over 25 years 11 months after banding. 134 km NNE.

(This bird was captured in Canberra and relocated to Jindabyne prior to banding and release in 1966.)

Double-banded Plover *Charadrius bicinctus*

- 041-61917. Adult (2+) banded by VWSG at Stockyard Point, Westernport, Vic. (38°22'S, 145°32'E) on 7 Mar. 92. Recaptured at Ahuriri River, South Island, New Zealand (44°27'S, 169°57'E) on 21 Sep. 92. 2 136 km ESE.

Large Sand Plover *Charadrius leschenaultii*

- 051-53130. Immature (1) banded by AWSG at Roebuck Bay, Broome, WA (18°00'S, 122°22'E) on 29 Mar. 90. Recovered dead (shot) at Xuan Thuy Reserve, Red River Delta, Vietnam (20°10'N, 106°20'E) on 22 Sep. 92. 4 589 km NNW.

Terek Sandpiper *Tringa terek*

- NV04265*. Immature (1) banded at Mai Po Marshes, Hong Kong (22°29'N, 114°02'E) on 31 Aug. 88. Recaptured by AWSG at Broome, WA (18°00'S, 122°22'E) on 2 Oct. 92, over 4 years 1 month after banding. 4 591 km SSE.

*Hong Kong band.

Bar-tailed Godwit *Limosa lapponica*

- (a) 071-85111. Immature (1) banded by AWSG at Roebuck Bay, Broome, WA (18°00'S, 122°22'E) on 26 Mar. 88. Recovered dead at Miaogang, Nanhui County, Shanghai, China (31°14'N, 121°28'E) on 12 Apr. 92. 5 474 km N.
- (b) 071-85486. Immature (1) banded by AWSG at Roebuck Bay, Broome, WA (18°00'S, 122°22'E) on 6 Apr. 88. Recovered dead at Miaogang, Nanhui County, Shanghai, China (31°14'N, 121°28'E) on 4 Aug. 92. 5 474 km N.
- (c) 071-86596. Adult (2+) male banded by AWSG at 80 Mile Beach, WA (19°15'S, 121°20'E) on 4 Apr. 90. Recovered dead (shot) at Ocha, Sakhalin, Russia (53°34'N, 142°56'E) in 1992. 8 356 km N.
- (d) 071-87118. Adult (2+) female banded by AWSG at Roebuck Bay, Broome, WA (18°00'S, 122°22'E) on 9 Apr. 90. Recovered dead at Laizhou Bay, Shandong Province, China (37°09'N, 119°00'E) in May 92. 6 141 km N.

Red Knot *Calidris canutus*

- (a) 051-00359. Adult (1+) banded by A. J. Leishman on Kooragang Island, NSW (32°56'S, 151°47'E) on 8 Jan. 77. Recovered dead (shot) at Yakutiya, Abuysky District, USSR (68°20'N, 146°00'E) on 6 June 86, over 9 years 4 months after banding. 11 268 km N.
- (b) 051-25648. Adult (3+) banded by WAWSG at Roebuck Bay, WA (17°59'S, 122°18'E) on 25 Oct. 83. Recovered dead (shot) at Yakutiya, Alekseevsky District, USSR (62°12'N, 133°04'E) in 1987. 8 964 km N.
- (c) 051-26798. Adult (2+) banded by AWSG at Roebuck Bay, Broome, WA (18°00'S, 122°22'E) on 25 Mar. 85. Recovered dead at Zheling, Hangzhou Bay, China (30°48'N, 121°27'E) on 1 May 92, over 7 years 1 month after banding. 5 426 km N.

- (d) 051-28849. Adult (2+) banded by V. W. Smith at Albany, WA (35°05'S, 117°53'E) on 16 Mar. 91. Recaptured at Taramaire, Firth of Thames, New Zealand (37°09'S, 175°19'E) on 4 July 92. 5 082 km ESE.

(The bird was also banded with band no C 46152)

- (e) 051-28862. Adult (2+) banded by V. W. Smith at Albany, WA (35°05'S, 117°53'E) on 16 Mar. 91. Recaptured at Taramaire, Firth of Thames, New Zealand (37°09'S, 175°19'E) on 4 July 92. 5 082 km ESE.

- (f) 051-42981. Adult (2) banded by VWSG at Westernport, Vic. (38°22'S, 145°32'E) on 11 Aug. 91. Recaptured at Taramaire, Firth of Thames, New Zealand (37°09'S, 175°19'E) on 4 July 92. 2 610 km E.

- (g) 051-56741. Immature (1) banded by P. V. Driscoll at Luggage Point, Morton Bay, Qld (27°22'S, 153°09'E) on 17 Nov. 90. Recaptured at Taramaire, Firth of Thames, New Zealand (37°09'S, 175°19'E) on 4 July 92. 2 342 km SE.

(The bird was also banded with band no C 46153)

Great Knot *Calidris tenuirostris*

- (a) 061-39475. Banded by WAWSG near Broome, WA (17°58'S, 122°16'E) on 30 Mar. 82. Recovered dead at Zheling, Hangzhou Bay, China (30°48'N, 121°27'E) on 16 Apr. 92, over 10 years after banding. 5 422 km N.
- (b) 061-41245. Adult (2) banded by WAWSG at Roebuck Bay, WA (17°59'S, 122°18'E) on 28 Oct. 83. Recovered dead at Miaogang, Nanhui County, Shanghai, China (31°14'N, 121°28'E) on 12 Apr. 92, over 8 years 5 months after banding. 5 472 km N.
- (c) 061-41629. Adult (3+) banded by WAWSG at 80 Mile Beach, WA (19°15'S, 121°23'E) on 31 Oct. 83. Recovered dead (shot) at Ocha, Sakhalin, Russia (53°34'N, 142°56'E) in 1992. 8 355 km N.
- (d) 061-43122. Adult (3+) banded by VWSG on Swan Island, Queenscliff, Vic. (38°15'S, 144°40'E) on 1 Oct. 88. Recovered dead at Zheling, Hangzhou Bay, China (30°48'N, 121°27'E) on 10 Apr. 92. 8 045 km NNW.
- (e) 061-69864. Adult (2+) banded by AWSG at 80 Mile Beach, WA (19°15'S, 121°20'E) on 29 Mar. 88. Recovered dead (shot) at Chumikan Village, Khabarovsk, Kraj, Russia (54°40'N, 135°15'E) on 10 Aug. 91. 8 323 km N.
- (f) 061-69906. Immature (1) banded by AWSG at Roebuck Bay, Broome, WA (18°00'S, 122°22'E) on 26 Mar. 88. Recovered dead at Miaogang, Nanhui County, Shanghai, China (31°14'N, 121°28'E) on 22 Apr. 92. 5 474 km N.

Red-necked Stint *Calidris ruficollis*

- (a) 032-12556. Adult (1+) banded by D. I. Smedley at Botany Bay North, NSW (33°57'S, 151°11'E) on 9 Mar. 84. Recovered dead at Laizhou Bay, Shandong Province, China (37°09'N, 119°00'E) in May 92, over 8 years after banding. 8 577 km N.

(b) 033-66642. Adult (2+) banded by VWSG at Werribee Sewerage Farm, Vic. (38°05'S, 144°31'E) on 31 Dec. 88. Recovered dead at Shanghai, China (31°14'N, 121°28'E) in Mar. 92. 8 068 km NNW.

(c) 033-69442. Immature (1) banded by VWSG at Corner Inlet, Vic. (38°41'S, 146°50'E) on 29 Jan. 89. Recovered dead at Laizhou Bay, Shandong Province, China (37°09'N, 119°00'E) in May 92. 8 899 km NNW.

(d) A04696*. Adult (3+) banded by WBSROC at Tatu River-mouth, Taiwan (24°48'N, 120°54'E) on 2 Sep. 89. Retrapped (cannon net) by AWSG at Saltworks, Port Hedland, WA (20°15'S, 118°55'E) on 29 Sep. 92. 5 013 km S.

*Taiwan Bird Banding Centre band. (This is the first Taiwanese band/bird recovered in Australia.)

Curlew Sandpiper *Calidris ferruginea*

(a) 040-71967. Adult (1+) banded by F. W. C. van Gessel on Kooragang Island, Newcastle, NSW (35°50'S, 138°03'E) on 30 Dec. 90. Recovered dead at Miaogang Nanhui County, Shanghai, China (31°14'N, 121°28'E) on 4 May 92. 7 654 km NNW.

(b) 040-90226. Adult (1+) banded by F. W. C. van Gessel on Kooragang Island, Newcastle (32°52'S, 151°46'E) on 26 Oct. 74. Recovered at Polarny, Alaikchovsk, Yakutia, Russia (70°28'N, 147°47'E) on 4 June 79. 11 492 km N.

(c) 040-95316. Adult (1+) banded by VWSG at Werribee Sewerage Farm, Vic. (38°05'S, 144°31'E) on 10 Mar. 79. Recovered dead at Laizhou Bay, Shandong Province, China (37°09'N, 119°00'E) in May 92, over 13 years after banding. 8 764 km NNW.

(d) 041-15629. Adult (3+) banded by VWSG on Swan Island, Queenscliff, Vic. (38°15'S, 144°40'E) on 19 Oct. 85. Recovered dead (shot) at Tanggu near Tianjin, China (38°54'N, 117°37'E) in May 92, over 6 years 6 months after banding. 9 010 km NNW.

(e) 041-60308. Adult (2+) banded by VWSG at Yallock Creek near Kooweerup, Vic. (38°13'S, 145°28'E) on 12 Jan. 91. Recovered dead (shot) at Tanggu near Tianjin, China (38°54'N, 117°36'E) in May 92. 9 033 km NNW.

Bar-shouldered Dove *Geopelia humeralis*

080-97651. Adult (1+) banded by E. K. Pratt at Reserve Creek, Murwillumbah, NSW on 26 Aug. 78. Recaptured at banding place by S. H. Pratt on 20 Aug. 92, over 13 years 11 months after banding.

Blackbird *Turdus merula*

061-06646. Juvenile female banded by J. B. Paton at Beaumont, SA on 26 Jan. 84. Recovered dead at Erindale, SA on 22 Oct. 92, over 8 years 8 months after banding. 6 km NNW.

Grey-headed Robin *Poecilodryas albispecularis*

040-74061. Nestling banded by C. Frith at Paluma, Qld on 21 Nov. 78. Recaptured near banding place by K. G. Rogers on 4 May 92, over 13 years 5 months after banding.

White-browed Scrubwren *Sericornis frontalis*

022-94096. Adult male banded by G. D. Bell at Ku-ring-gai Garden, St. Ives, NSW on 24 June 84. Recaptured at banding place five times, the last occasion by J. W. Hardy on 21 Apr. 91, over 6 years 9 months after banding.

Striated Thornbill *Acanthiza lineata*

014-70895. Adult banded by G. D. Bell at Munghorn Gap Nature Reserve near Mudgee, NSW on 26 Jan. 85. Recaptured at banding place twice, the last occasion by D. J. Geering on 19 Apr. 92, over 7 years 2 months after banding.

White-plumed Honeyeater *Lichenostomus penicillatus*

022-16065. Adult (1+) banded by G. D. Thomas at 'Koraleigh' NW of Finley, NSW on 7 June 85. Recovered (released alive with band) at 'Logie Brae' near Finley, NSW on 18 Nov. 92, over 7 years 5 months after banding. 3 km W.

New Holland Honeyeater *Phylidonyris novaehollandiae*

(a) 031-59745. Immature (1) banded by B. R. Hutchins at Sandy Creek Conservation Park, SA on 5 May 84. Recaptured at banding place on 16 Apr. 92, over 7 years 11 months after banding.

(b) 032-07425. Immature (1) banded by B. R. Hutchins at Sandy Creek Conservation Park, SA on 16 Dec. 84. Recaptured at banding place on 16 Apr. 92, over 7 years after banding.

Silvereye *Zosterops lateralis*

014-78500. Adult (1+) banded by A. J. Leishman at Mount Annan Botanic Garden, Campbelltown, NSW on 5 July 87. Recaptured at banding place twice, the last occasion by M. Sempe on 27 Feb. 93, over 5 years 7 months after banding.

Satin Bowerbird *Ptilonorhynchus violaceus*

090-76148. Green bird banded by L. W. Filewood at Cumberland State Forest, West Pennant Hills, NSW on 29 Mar. 87. Recaptured (adult male) on 20 Sep. 92, over 5 years 5 months after banding.

Pied Currawong *Strepera graculina*

090-03465. Adult (1+) banded by E. G. Reynolds at Mount Wilson, NSW on 3 Jan. 82. Recovered (released alive with band) near banding place on 29 Aug. 92, over 10 years 7 months after banding. 2 km W.