

## NOTES

### Recent natural colonisation of the granitic islands by three bird species

R. Gerlach & J. Gerlach  
PO Box 207, Victoria, Mahé,  
SEYCHELLES

Colonisation of new areas is an important part of the evolution of island biotas but is very rarely observed. Many Seychelles bird species are assumed to be relatively recent colonists but all except for the introduced species seem to have been well established by the time the first ornithologists visited the islands. It is generally assumed that the most recent colonist is the Chinese bittern (*Ixobrychus sinensis* (Gmelin, 1788)) which was first observed in 1867 (Benson 1984) and appears to have expanded its range since that date. Recent close monitoring of bird species has revealed the natural colonisation of the granitic islands by grey herons *Ardea cinerea* Linnaeus, 1758 in 1992. The process of colonisation is described below followed by discussions of two further possible natural colonisations; black-crowned night herons *Nycticorax nycticorax* Linnaeus, 1758 and rose-ringed parakeets *Psittacula krameri* Scopoli, 1769.

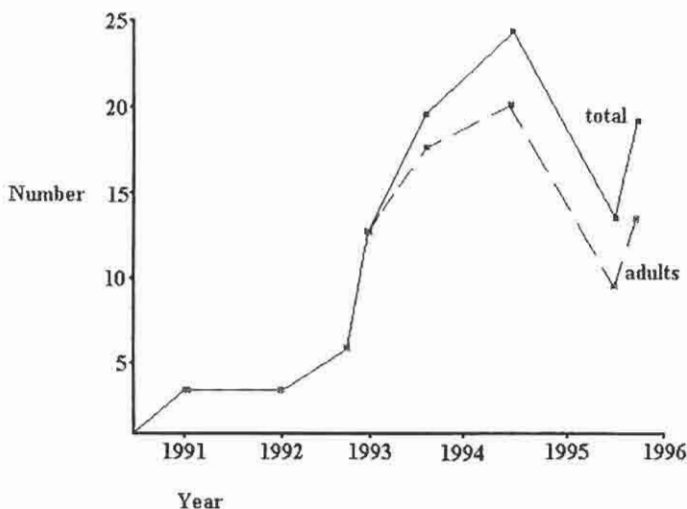
#### Grey herons

Grey herons, being a cosmopolitan species, are found throughout the western Indian Ocean. Historically they were recorded as being present on the granitic islands of Seychelles and were even at one time kept tethered in some gardens for later consumption by the captors (Penny 1974). Over-exploitation, drainage of coastal marshes and reclamation of coastal mudflats led to the disappearance of these birds on all the granitic islands. In the 1970s and 80s they appeared to be a vagrant species and were recorded as such (Feare & High 1977).

Conditions deteriorated for the herons in 1970-72 when the first stage of reclaiming land from the sea covered a large expanse of mudflats that extended from the shoreline along the full length of the then "Long Pier" - the access road to the landing stage and slipways at the pier end. Further reclamation on a much larger scale took place in 1986-87 when the area from Victoria to the airport was reclaimed. This development project was designed to create a series of channels and lagoons between the reclamation and the natural shoreline thus allowing those owners of shore front properties to retain their link with the ocean. The natural colonisation of these lagoons by mangroves (*Rhizophora mucronata* Lam. and *Avicennia marina* (Forssk.) Vierh.) and the evolution of sand bars and new areas of tidal mudflat compensated for the areas lost in earlier developments.

## NOTES

Fig. 1. Grey heron numbers on Mahé 1991-96



The appearance of grey herons in 1991 was at first recorded as the sighting of a vagrant species. The three birds seen did not however depart with the migrants in April and were seen to be breeding on 30th August 1992 (R. Gerlach 1992). The breeding colony which was in the main cattle egret *Bubulcus ibis* (Linnaeus, 1758) colony at Mont Fleuri was regularly monitored and an annual census was instigated (Gerlach 1993). In September 1995 a second breeding colony of egrets and grey herons was recorded on Hodoul island in Victoria harbour (R. Gerlach 1995b) and in 1996 the annual census was abandoned because of the wide dispersal of the herons across Mahé and to the neighbouring islands of Praslin, La Digue and Silhouette, with occasional sightings on Cerf and Cousin (R. Gerlach 1994, 1995a&b; Matyot 1996). The census results are shown in Fig. 1. At present breeding has only been confirmed in the two colonies on Mahé but frequent sightings on Praslin and the continuous presence of herons on Silhouette for over a year suggests that new colonies may be formed in the very near future.

### Black-crowned night herons

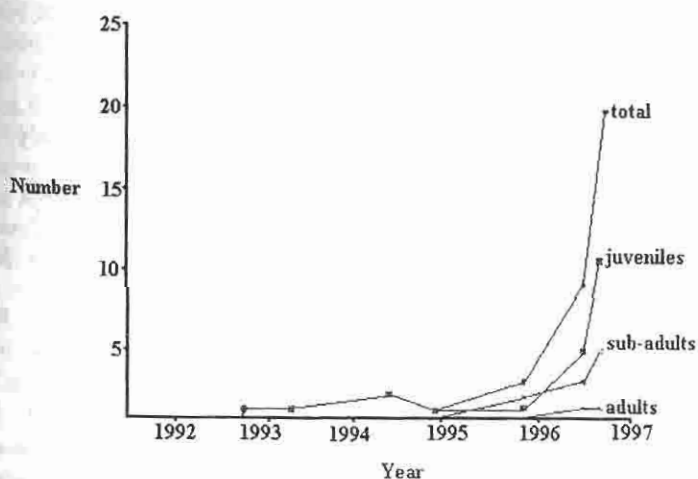
The changing conditions along the shoreline of the east coast of Mahé described above have also created an environment suited to another cosmopolitan species which had never been recorded in Seychelles; the black-crowned night heron. One of the most important contributions to the establishment of this species

## NOTES

was the creation on the reclaimed land of the Roche Caiman Bird Sanctuary. Although the sanctuary is landlocked and is only 2.9 hectares in extent, its wooded surround with areas of permanent water attracted the first night-heron ever recorded in Seychelles, an immature bird recorded on 29th October 1992 (Skerrett 1993). As with the early sighting of grey herons, the first records of night herons were assumed to be vagrants (Skerrett 1996).

Regular sightings of immature birds were made from that date, with two seen in October 1994 (Skerrett 1996). Towards the end of 1995 a group of three night herons in sub-adult plumage were seen at Roche Caiman with one bird in immature plumage. From that date, night herons have been recorded throughout the year (1996 and into 1997). The most significant number recorded to support the assumption of a natural colonisation event was on 17th August 1996 when 19 birds were recorded at North-east Point (R. Gerlach 1996). Sightings have also been made at various places around Mahé and on Silhouette. To date no breeding site has been discovered but the age structure of the birds seen in August 1996 indicates that a small nucleus of breeding adults exists. In December 1996 and January 1997 the number of sub-adults recorded increased as the number of immature birds decreased. This coincided with the first record of adults in December 1995, indicating a seasonal moult. The observations are summarised in Fig. 2.

Fig. 2. Black-crowned night heron numbers on Mahé 1992-6



## NOTES

### Rose-ringed parakeets

Historically Seychelles supported a parakeet species (the endemic subspecies of Alexandrine parakeet, *P. eupatria* Linnaeus, 1758 *wardii* (Newton, 1867)) which was driven to extinction by 1905 (Lionnet 1984). Sightings of ring-necked (rose-ringed) parakeets on Mahé over the past 23 years have always been assumed to relate to escaped cage-birds. Records of a 'Green Madagascar Parakeet' (Riley & Percy 1958) refer to the failed introduction of grey-headed lovebirds *Agapornis cana* (Gmelin). Parakeet sightings were made on Mahé in the area between Union Vale and Pointe Conan and at St. Louis and recently a single bird has been recorded on Silhouette (Matyot 1996).

Current records date from 1974/5 when two birds were recorded at Pointe Conan and Union Vale (R.&G. Gerlach & F. Butler-Payet *pers. comm.*). Two birds were recorded regularly at St. Louis in 1987/8 (A. Skerrett *pers. comm.*). The most recent sightings are of a single bird on Silhouette since May-June 1995 (Matyot 1996) and up to five birds on Mahé (Pointe Conan). In February 1997 a male was seen feeding in a cultivated guava (*Psidium guajava* L.). The black, red and blue collar and blue cheeks and nape identified it as *P. k. borealis* Neumann, 1915 from the north of the Indian subcontinent (Cramp 1985). Five birds have been seen at Pointe Conan with three having short tails indicating that there are a pair and three juveniles (G. Adam *pers. comm.*). The origins of these birds are uncertain. The general assumption that they are escaped cage birds is not supported by the veterinary department's records which show that no permits have ever been issued for *Psittacula* (P. Boudane *pers. comm.*). However imports are known to have occurred as shown by the observation of two yellow parakeets seen in a cage at the Jardin du Roi (R. Lucking *pers. comm.*). Illegal importation is also a possibility. With approximately ten years between each record, it seems unlikely that three separate escapes can have occurred. The Silhouette record must also cast some doubt on this theory. Accidental introduction by birds arriving on ships is possible and is the probable route by which Indian house crows *Corvus splendens* Vieillot, 1816 colonised Seychelles prior to their apparent extinction (Feare & Watson 1984).

*Psittacula* are not known to undertake regular migrations but *P. krameri* has a scattered distribution, due to introductions and occasional range expansions (Cramp 1985; Ripley 1961). That these range expansions can extend as far as the western Indian Ocean is shown by the presence of endemic *Psittacula* descended from Asian species (*P. eupatria wardii* in Seychelles and the different species of *P. krameri* descendants in the Mascarenes). From the distribution pattern of wild parakeets and the frequency of Asiatic vagrants recorded in Seychelles it is possible that the present records represent natural colonists. The most likely interpretation of the records is that colonisation by one or two birds of the same sex has taken place in the past. In 1995 the opposite sex arrived, enabling a breeding pair to establish. Evidence for natural colonisation is more speculative than for the heron species but should be considered as valid in the event that the present population becomes

## NOTES

permanently established. The presence of rose-ringed parakeets in Seychelles fills the ecological niche made vacant by the extermination of the Seychelles parakeet. The ecological roles of the different *Psittacula* species are very close and differences are restricted to dietary separation as a result of different bill sizes. Bill lengths of museum specimens of Seychelles parakeets (24-34mm) are intermediate between *P. eupatria* (32-42mm) and *P. krameri* (21-25mm). Consequently either species would be appropriate ecological replacements for the extinct Seychelles form. Details of the Seychelles parakeet's ecological role are limited to brief notes on the behaviour of captive birds (Lionnet 1984) and the Kreol name for the tree *Brexia madagascariensis* (Lam.) Ker Gawl. ('bwa kato') which implies that its fruit was consumed by parrots. It has not been recorded as a component of the diet of the extant black parrot *Coracopsis nigra* Linnaeus, 1766 and the name probably refers to the green parakeet. This tree species is now very rare which may be partly the result of the loss of a significant dispersal agent. The only way to determine the significance of parakeets in the ecosystems of Seychelles is to monitor the current process of establishment of rose-ringed parakeets. If a viable population develops as a result of this colonisation this could restore a significant part of the natural seed dispersal and pollinator niche which is essential to the preservation of the islands' ecosystems (J. Gerlach 1997).

### References

- Benson, C.W. 1984 - Origins of Seychelles land birds. In: Stoddart, D.R. (Ed.). *Biogeography & ecology of the Seychelles Islands*. W. Junk, The Hague.
- Cramp, S. (Ed.) 1985 - *Handbook of the Birds of Eaurpe, the Middle East and North Africa*. Vol. 4. Oxford University Press, Oxford. 960pp.
- Feare, C.J. & High, J. 1977 - Migrant shorebirds in the Seychelles. *Ibis* **119**; 323-338
- Feare, CJ & Watson, J 1984 - Occurrence of migrant birds in Seychelles. In: Stoddart, D.R. (Ed.). *Biogeog. & ecol. of the Seychelles Islands*. Junk, The Hague.
- Gerlach, J. (Ed.) 1997 - *Seychelles Red Data Book 1997*. NPTS, Seychelles.
- Gerlach, R. 1992 - Birds. *Birdwatch* **4**; 2-3 1994 - *Birdwatch* **12**; 3-4  
1995a - *Birdw.* **15**; 2-3 1995b - *Birdw.* **16**; 2-3 1996 - *Birdw.* **20**; 2-3
- Lionnet, G. 1984 - Extinct birds of the Seychelles. In: Stoddart, D.R. (Ed.). *Biogeography & ecology of the Seychelles Islands*. W. Junk, The Hague.
- Matyot, P. 1996 - News from Silhouette. *Birdwatch* **18**; 16-18
- Penny, M. 1974 - *The birds of Seychelles*. Collins, London. 160pp.
- Ridely, M & Percy, R 1958 - Exploitation of sea birds in Seychelles. *Col.Res.Stud.* **25**
- Ripley, S.D. 1961 - *A Synopsis of the Birds of India and Pakistan*. Bombay Natural History Society, Bombay. 700pp.
- Skerrett, A. 1993 - Seychelles Bird Records Committee. *Birdwatch* **6**; 7-811  
1996 - Night herons at Roche Caiman. *Birdwatch* **19**; 5-6