

THE ECLECTUS PARROT

By Dr Rob Marshall & Tailai O'Brien (photo 1)

Review by Alan Jones BVetMed MRCVS (retired)

I have never read such a comprehensive and detailed book on a single parrot genus as this new impressive volume from Australia. It is also impressive physically, with 740 pages of incredibly detailed, often very scientific, but nevertheless interesting and easily read text. It is lavishly illustrated throughout, with high quality colour photographs, and excellent charts and tables. Weighing in at 2.8 Kg, it is definitely not a pocket reference book! Written by avian veterinarian Dr Rob Marshall and animal behaviourist and photographer Tailai O'Brien, together with several secondary contributors, it was understandably 20 years in its concept, and ten years in actual incubation, before final hatching earlier this year.

The book is divided into nine sections, with the first seven dealing with the natural history, habitat and natural diet of these unique parrots, as well as conservation, aviculture, breeding and hand-rearing, and keeping them as pets. The final two sections are devoted to major diseases and behavioural disorders that affect eclectus parrots, and the book closes with some very useful Appendices. There is considerable repetition throughout the text, but this is no bad thing in such a detailed volume, as the reader may go to one specific section and not read other parts at the time, yet still acquire the necessary information on important subjects such as nutrition, digestion and disease.

Section 1 has four chapters covering the evolution and development of species and sub-species of Eclectus throughout its distribution on the tropical rainforest islands of south-east Asia and northern Australia. Naming and classification of parrots evolves steadily, as identification techniques become more sophisticated. Current thinking, based on molecular DNA research, gives *four* species within the genus, rather than the original classification of one species (*Eclectus roratus*) with some nine sub-species. These are –

Eclectus roratus – the Moluccan Eclectus, with three sub-species –

- E. r. roratus* – Grand eclectus
- E. r. vosmaeri* – Vosmaeri eclectus
- E. r. seramensis* – Seram eclectus

Eclectus riedeli – Tanimbar Eclectus – no sub-species.

Eclectus cornelia – Sumba Eclectus – no sub-species.

Eclectus polychloros – Papuan Eclectus, with five sub-species –

- E. p. polychloros* – New Guinea eclectus (previously red-sided eclectus)
- E. p. biaki* – Biak eclectus
- E. p. solomonensis* – Solomon Islands eclectus
- E. p. aruensis* – Aru Islands eclectus
- E. p. macgillivrayi* – Australian eclectus

Most of these divisions result from separation of populations throughout the various islands of the region. However, interbreeding can occur, and does so particularly in captivity, where species identification is subtle and difficult. Thus, finding pure-bred species in captive collections is vexing. This is discussed in more detail at the end of this section.

The chapters continue with precise descriptions of each species and sub-species, describing eye, beak and plumage colouring, as well as body size. Each is accompanied by simple annotated photographs, making the process much easier to follow (photos 2 & 3). The formation of colour in feathers is also described.

Section 2 has two chapters dealing with field research on the Australian Eclectus (*E. p. macgillivrayi*) and covers in detail the diet of these birds in their natural habitat. This sets the stage for the high fruit/low fibre/low fat/low protein diet required by eclectus parrots, that is emphasised throughout the book. It covers foraging and selection behaviour, and natural feeding times. The second chapter describes breeding behaviour in the wild, highlighting the co-operative polyandry of these birds. The females guard their chosen nest sites in hollow trees (which are in short supply and therefore competitively sought) for many months (July one year through to March of the next), and she is fed and protected (and may even mate with) several males. Up to seven males were reported attending to one female, and in some cases several males would attend more than one female (polygynandry).

This unusual behaviour may explain the unique colour difference between male and female birds, with the green cock birds well camouflaged in the surrounding foliage in which they spend most of their time, while the red hen stands out – both to her mate and as an indicator of an occupied nest site.

Breeding in the wild is hard going, with eggs and chicks subject to predation (45%), nest holes to flooding (13%). At high-risk nest sites, females were recorded as killing male chicks, as female chicks fledge and leave the nest more quickly, thereby reducing the time needed for parental care.

Section 3 also has two chapters, covering the diet of captive eclectus parrots. Secondary authors here are father and son team of Grahame and Lachlan McDonald, aviculturists and conservationists experienced over decades in the keeping of these birds. Other secondary authors throughout the book have unique input as clients or friends of Dr Marshall, all adding to the wealth of knowledge that is presented.

The first chapter describes the various nutrients required in a diet and would be of interest to all bird keepers. The relative merits of cereals, seeds, grains, nuts, pulses, fruits and flowers are analysed, followed by the more specific needs of eclectus parrots with their high-fruit diet.

It also mentions the variation in requirements at different stages like egg-laying, moulting, adolescence. Protein requirements are estimated at 7% for maintenance, 11-12% for moulting, and 15% for breeding. Some commercial diets can contain 20-27% protein, as they are based on requirements for poultry. This is clearly too high for eclectus. Fat content should be no more than 3% for maintenance and 5% for breeding. *Cooking* and feeding many of the ingredients warm certainly aids digestion. Useful charts summarise this information succinctly. *Cultivated* fruits and vegetables available in supermarkets are generally inferior in nutritional content to native rainforest fruits, leading to the next chapter, which covers the cultivation of such fruits and other suitable components in a home

environment. This is obviously specific to an Australian environment, but general information may be extrapolated to other areas of the world.

Section 4 has three chapters, dealing with Conservation of these remarkable birds, with a variety of authors writing about current status and threats to survival; habitat destruction (agriculture, logging, mining); agricultural run-off and pesticides; and climate change. The bird trade is particularly emphasised – both historical legal trading and current illegal smuggling, with the cruelty and welfare issues that are involved. Mortality in such situations can be as high as 90%.

The section continues with the status of the various species in the wild, and current conservation strategies, with a case study of the Australian eclectus.

Section 5 contains four chapters describing conservation-focused aviculture – a section that could be usefully read by any parrot keeper. It covers the ideal living conditions and habitat, describing enclosures, feed and water stations, perches, nest boxes, sprinkler systems, pest control and hygiene. It emphasises the importance of the birds' physical and mental wellbeing. This is followed by the selection of strong and healthy stock, with a focus on producing a pool of genetically pure captive-bred birds of each species and sub-species, for ultimate release into the wild. Selection and breeding protocols are set out in detail, including timing, nutrition, health checks, record keeping and introduction and design of nest boxes. The section has some good examples of the many summary charts, designed by Rob Marshall's son Miller, in which he cleverly uses the colours of eclectus plumage to highlight the different sections (Photos 4,5 or 6,7 – your choice!). There is a complex genetics and breeding plan, but it is clearly described. Good resulting specimens go on to the conservation and release programme, while lesser examples may be sold as pet parrots.

Section 6 follows on neatly from that in a single chapter, by describing hand rearing, again something that will be useful to any parrot breeder. It covers principles, equipment, hygiene, weighing and weight charts, again in great detail and lavishly illustrated. Developmental stages of the chick are described, with step-by-step information and summary tables enabling the reader to follow the process easily. There is repetition of photographs from elsewhere, but this saves cross-referencing and looking back. There is no doubt that hand rearing is a labour-intensive process, if done properly!

Section 7 gives us four chapters describing the parrots as companion birds, once they have been successfully reared. There are strong arguments supporting the benefits of human/animal relationships, regarding human cardiovascular health and mental welfare, as well as social and emotional development. The arguments of Animal Rights groups opposing the keeping of captive animals is countered by the fact that humans have had meaningful relationships with animals over tens of thousands of years. The claim that 'animals have the same rights as humans and should be set free' is in turn countered by the fact that domesticated and hand reared companions do not have the skills to survive in the wild and are dependent on human care to survive. This all, of course, is provided the birds are properly cared for, housed in a suitably sized environment, and fed a nutritionally sound diet. There is discussion of the suitability of eclectus as companion parrots, owing to many of their specific traits.

Transfer to a new home from the breeder and rearer is well described, covering age, selection, transport, feeding, settling in and bonding with the family. The 'strategy of care' is

equally applicable to other parrot species. Again, the importance of a diet specific to eclectus is emphasised, with repetition of information presented before and after, but this means that these essential facts are available to the 'selective reader'. There is a cogent argument against pelleted foods for these birds owing to their need for a low-fibre diet.

Optimum living conditions are described, with temperature and humidity paramount, owing to their adaptation to rainforest living. Prolonged humidity of less than 50% is unsustainable for a healthy bird. Other factors like cage design, placement and hygiene are covered, as well as sleep patterns, exercise, bathing, training and body language. Daily routine in feeding and sleeping times are considered essential, and a regime for monitoring health via droppings, behaviour and appetite is described.

Section 8, with three chapters, carries much more scientific content, and only a scientist will read and understand the full text. However, once again the excellent summary tables and charts simplify understanding for the layperson. This section is not a complete review of all psittacine diseases, but covers the important conditions affecting eclectus parrots, most of which are related to their specific digestive system. As mentioned before, their natural high fruit/low fibre/low protein/low fat diet has influenced the evolution of their stomach and intestines to make alternative diets difficult to digest, resulting in a multifactorial and interlinked complex of conditions including deficiencies of vitamins A and D, calcium, secondary infections, dry skin, poor feathering and feather destructive behaviour. Hypersexuality is another problem in these birds, with male birds resorting to masturbatory behaviour and inappropriate bonding with humans, while females exhibit nest guarding and egg laying, both of which impact on health.

These subjects are covered in comprehensive detail – the section on unravelling the complexities of vitamin A covers 59 pages! – most of which as I said is not essential to the average birdkeeper but improves understanding of the problems.

Parrots affected by gastro-intestinal disorders exhibit signs such as yawning (to release gas), slow blinking, toe tapping and wing flicking as signs of pain, and bubbles in their droppings. Long-standing cases will develop pigment loss, dry skin and feather defects.

Feather destructive behaviour was something I saw many times in eclectus parrots during my time as an avian veterinary practitioner, and now I fully understand why! This chapter (23) starts with a description of normal feather anatomy, structure and growth, and points out that, unlike many other parrots, eclectus do not possess powder down feathers. These structures produce an oily powder that helps protect feathers. Many of their contour feathers are soft 'open barbed', more vulnerable to damage. A dry environment and/or lack of bathing facility will also result in poor plumage. Infectious feather diseases like PBF are not covered here, but most other cases of FDB arise from the deficiency issues, gastro-intestinal problems, environment and nutrition, or hypersexual behaviour.

Precise treatment regimens are provided for the various conditions encountered.

Section 9, finally, with three chapters, deals with behavioural problems, again with emphasis on these specialised parrots, but with general information that would be relevant to all companion birds. Normal behaviour and vocalisations in the wild are first detailed, with survival actions and calls learned and refined with practice, while reproductive behaviour is instinctive. Screaming and biting are natural responses to threat but always preceded by clues from body language. These are commonly missed by parrot carers.

The normal reproductive cycle and behaviour are described, with detailed descriptions of the hormonal changes that take place. These will go awry in captivity, as they are not 'switched off' by natural triggers. Unnatural repetition of reproductive behaviour leads to aggression, regurgitation of food and masturbation in cock birds; and nesting behaviour and aggressive protection of the site in females, through to soft-shelled eggs, egg binding, paralysis, oviduct prolapse, and even death. Such persistent behaviour in turn results in disruption of normal feeding, bathing, preening and resting patterns, which lead to previously mentioned effects on the gastro-intestinal system, with digestive disorders, vitamin deficiencies, and feather destructive behaviour being the end result.

Prevention is better than cure, so detailed management and treatment plans are laid out, covering diet and husbandry, daily routine and exercise, the use of dummy eggs in some cases, or removal to a full breeding situation. The use of GnRH_a (deslorelin) hormone implants are valid in dealing with these cases.

The book finishes with some lavishly illustrated appendices, covering suitable food items for eclectus at various stages of their lives or therapies, plus nutritional analyses of these items. There is a review of recommended supplements of vitamins and minerals, etc., clearly applicable to the Australian market, but similar products are equally available in the UK and Europe.

I like the way each page is laid out in two columns, which makes reading comparatively small text on large (A4) pages so much easier. References are cited at the end of each section – again much easier than a mass at the end of the book. The passion that the authors have for these remarkable birds shines through their writing.

Summary - words I have used repeatedly – comprehensive, detailed, with excellent illustrations. The numerous tables and charts simplify and summarise the salient points and cleverly use eclectus colours for emphasis (Photo 4, 5, 6, 7). This imposing volume should be in the library of all serious eclectus enthusiasts; avian veterinarians; and scientists interested in the evolution, conservation, behaviour, nutrition and breeding of birds.

The book is available from - <http://www.fabfinches.co.uk/>

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