Behavior of Emu bird (Dromaius novaehollandiae)

V. R. Patodkar*, S.D. Rahane, M.A.Shejal and D.R.Belhekar

Department of Veterinary Physiology
Krantisinh Nana Patil College of Veterinary Science, Shirwal 412801
Maharashtra Animal and Fishery Sciences University, Nagpur.
* Corresponding author Email: drvrpat@yahoo.co.in

Abstract

Emu is second largest living bird of world belonging to order *Ratite.* This order is of flightless birds with flat breast bone and it includes emu, ostrich, rhea, cassowary and kiwi. Emus are reared commercially in many parts of the world for their meat, oil, skin and feathers, which are of high economic value. The anatomical and physiological features of these birds appear to be suitable for temperate and tropical climatic conditions. Emu is newly introduced species in India. Although emu farming is considered to be economical, we have to study the behavior of emus to increase the profitability by providing housing, feeding and breeding facilities more or less same as that of in wild condition during their rearing in captivity and we will have to carry out comparative study of behavior in captivity as well as in wild condition.
Keywords: Behaviour, Bird, Feeding, Breeding, Housing, Tropical Climate.

General Behavior

Emu is diurnal, meaning they are most active during the day time. Emus are generally docile, occasionally fight among themselves and are curious. Their calls consist of booming, drumming and grunting. The males sometimes make the calls with a sound like “e-moo” and can be heard over long distances. Females make characteristic resonant, booming sound. Booming is created in an inflatable neck sac, and can be heard up to 2 km away. Emu is a fast runner and can reach to a speed up to 50 km/h. It is a good and strong swimmer also.

Newly hatched chicks are cream-coloured with dark brown stripes. They leave the nest at 2-7 days when they are able to feed themselves. During this period, the stripes become fade up and the downy plumage is replaced by dull brown feathers. Emus are fully grown at about one year of age and can gain the breeding capacity at the age of 20 months.

Both the sexes are similar in color and only the females have black feathers on the head and neck during breeding season.

Feeding Behavior

Emu eat fruits, seeds, growing shoots of plants, insects, other small animals, and animal droppings but in wild condition they do not eat dry grasses or mature leaves even if they are available. Emus can satisfy a large portion of their daily energy needs from the digestion of plant fiber. There is no crop, but the mucous membrane is arranged in longitudinal folds in the esophagus. It allows distension of the esophagus, when bulky food items are swallowed. In Captive Emus that are fed with chopped apple, portions of fruit are remained in their distal esophagus for 30 minutes. It suggests that stretching of the esophagus may facilitate the storage of some food in the absence of a crop. The proventriculus has a large lumen which also suggests that it also helps in storage of food in the absence of a crop.

Emu ingest large pebbles—up to 1.6 ounces, to help their gizzards to grind the food. They also often eat charcoal. They move within their range according to climatic conditions. If sufficient food and water is present, birds will reside in that area whereas, the area where these resources are more variable, Emus move from such area to an area where conditions are suitable. They are known to move hundreds of kilometers, sometimes at a rate of 15-25 km per day. They are nomadic, following the rain to feed.

When food is abundant, emus store large amount of fat in the body which they utilize while searching for new food supplies. Sometimes, adult emus will lose more than 50% of their body weight in between food supplies, leading to reduction in body weight from 100 pounds (45 kilograms) to about 44 pounds (20 kilograms.)When food is plentiful, emus store large amounts of fat that they live off of while searching for

new food supplies. Sometimes, adult emus will lose more than 50% of their weight while in between food supplies, dropping from 100 pounds (45 kilograms) to 44 pounds (20 kilograms). Adult emus need about a 5 liter of water per bird per day.

Breeding Behavior

Sexual maturity is reached after 2 to 3 years but breeding in captivity can occur as young as 20 months. Male and female emus pair up in December and January, establishing a territory of about 12 square miles (30 square kilometers) where they mate. The male and female remain together for about five months, which includes courtship, nest building and egg-laying. . During the courtship, both genders start strutting and circling; ruffling out their feathers and cocking their heads in a shy posture. The male starts a mating dance with slow, snake-like back-and-forth movements of his head while circling around the female. The male needs a lot of patient persuasion to get a conquest, otherwise, the female can turn very aggressive. Once the pair is formed, it may last for about five months with a mating at every 1-2 days,

In April, May, and June, the female lays large, thick-shelled dark green eggs, with one nest containing the eggs of several females. When a nest has about eight to ten eggs, the male incubates them, meaning he sits on the eggs to keep them warm until they hatch. Nests can contain fifteen to twenty eggs on one occasion. Male starts incubating the eggs, typically after the last egg is laid so that all the eggs hatch close together. Incubation period is of about 56 days. He does not eat, drink, or pass bodily wastes during incubation. The male survives only on accumulated body fat. He sits on the nest twenty-four hours a day, standing about ten times a day to turn the eggs. During this time, eggs often roll out of the nest and are pulled back in by the male.

The female dominates the male during pair formation, but once incubation begins, the male becomes aggressive to other Emus, including his mate. The female wanders away and leaves the male to perform all the incubation. Sometimes she will find another mate and breed again. This type of mating system, with the female taking successive mates, is called successive or sequential polyandry.

Naturally mated female emus store spermatozoa in the tubules of the oviduct and release them over a period of time, termed the “fertile period”, during which a maximum of 6 eggs can be fertilized. Volume of ejaculate in Emu is ranging from 0.4 to 1.2 ml and each ejaculate contains about 1.2-3.5 × 10^9 spermatozoa.

Nesting Behavior

Nesting takes place in winter. The male builds a nest by placing bark, grass, twigs, leaves, and few feathers in a shallow depression in the ground. The nest consists of a platform of grass on the ground, about 10cm thick and 1-2m in diameter. Five to 15 eggs, measuring 130x90mm, are laid at intervals of 2-4 days. These are dark bluish-green when fresh, becoming lighter with exposure to the sun. The shells are thick, with paler green and white layers under the dark outer layer. When eggs are fresh, they are dark green, but become almost black with time.

Social Behavior

Emus are solitary creatures and although they often travel in large flocks where there is food, this is not a social behavior. Emus are not really social. Exception is of young birds, which stay with their father with certain period of time. Young birds stay close together and remain with the male for four months. They finally leave from them at about six months.

Sleep

Immediately after the sunset, the emu lie down to sleep, although it may rise up to eight times during the night for the purpose of defecation and feeding. On an average, the emu will awaken every one and half to two hours. They rise for a few minute, stands to defecate and feed. This interruption to sleep continues from 10 to 20 minutes. In this manner emu is disturbed from six to eight times a night. The actual duration of complete rest being up to seven hours.

References

1. Campbell A.J. (1902): Emu Eggs, *Emu* Vol 2.
2. Immelmann K. (1960): The sleep of the emu. *Emu* Vol 60:193-195.
3. Malecki I.A. and Martin G.B.(2004): Artificial insemination in the emu (*Dromaius novaehollandiae*): effects of numbers of spermatozoa and time of insemination on the duration of the fertile period. *Animal Science Papers and Reports* 22 (3): 315-323.
4. Reddy A.R. (2007): Commercial Emu and Ostrich rearing, IPSACON.
5. Stefan Anitei, When the Ladies Sing Serenades to the Gentlemen. (http://news.softpedia.com/news/When-the-Laddies-Sing-Serenades-to-the-Gentlemen-39994.shtml).
6. http://animals.jrank.org/pages/367/Emu-Dromaiidae-Behavior-reproduction.html.

* * * * * * * *