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## Nesting of the Australian Goshawk (*Accipiter fasciatus*)

By P. SLATER, Perth

In September 1959, Michael Morcombe, my wife and I found three nests of the Australian Goshawk in the Wongong Valley, between Armadale and Byford about 23 miles from Perth. A hide was constructed near one of these nests, which was built in a Marri (*Eucalyptus calophylla*) on the third branch, 60 feet from the ground.

The nest was found on September 19, 1959. Both the male and the female were bringing sticks at the rate of about one every two minutes, and placing them on the nearby horizontal branch, between four upright suckers which were about one inch in diameter. The first indication that the eggs had been laid came when we flushed the sitting male bird on October 1. This was the only occasion on which the male bird was observed at the nest during the incubation period. The female returned after about ten minutes.

On October 3 we began hammering pegs into the tree to form a ladder to enable us to climb to the nest. The incubating female did not leave, and we ceased work at a height of 20 feet. On October 24 we had reached the nest, and the female did not leave until one of us appeared above the side of the nest. There were three eggs in the clutch. We pegged several boards between a fork and added small sections of the hide each day until October 29, on which date there were only two eggs left. On our next visit, October 31, both eggs had hatched. Since the hide was completed, we did not disturb the birds again until November 6, when I entered the hide for our first close observation session.

The chicks were covered with white down and had black eyes and beak, pale blue ceres and legs. The male came to the nest almost immediately, stayed a few moments then left. The female arrived at 9.15 a.m. and brooded until 12.50 p.m. when the male, carrying something large, flew into a nearby tree. He called with a loud, slow throaty whistle which is difficult to describe but which was unlike the normal chattering cry. The call was repeated about ten times. The female

left the nest and flew towards him and, as she approached, his call changed to the typical Goshawk chatter. She landed beside him and after passing the food to her the male bird flew away. The female fed on the carcase for about ten minutes and then returned to the nest with half a small rabbit in her talons. Small strips of meat were torn off and the chicks reached up and took them from her beak. After feeding the young birds with about half of the food the parent began to tear off larger pieces, eating all offal, fur and bones herself. One chick secured a long piece of the intestine but the adult snatched it back and swallowed it herself. When the chicks were satisfied they settled down in the nest and the Goshawk ate the remainder of the rabbit with the exception of the skin, which she carried from the nest and dropped. Then she returned to the nest to brood again. The male bird brought another rabbit to the same tree at about 6 p.m., passing it over to the female who returned to the nest with the food. The young birds were fed until 6.20 p.m. when the female ate the remainder of the rabbit, skin and all and then brooded the nestlings again.

On November 10 the chicks had changed colour slightly, from white to pale yellow. Further observations showed that food was brought to the nest four times daily, the first meal at about 6 a.m., the second (usually something small, such as a mouse, bird or rabbit leg) at 9 a.m., the third at 1 p.m. and the final meal at 6 p.m. When the chicks were older, food was sometimes brought at about 4 p.m.

On November 15 the first feathers were beginning to show through the down on the scapulars, breast and wings. The chicks' crops were bulging when I entered the hide at 9 a.m., but the female returned at 9.07 a.m. with a small, plucked bird. The head, which was still on the carcase, was offered first. When the bird was eaten, the two chicks settled down and the Goshawk stood at the edge of the nest. A cloud of flies gathered around the nest and the bird spent a few minutes snapping at these pests. She left the nest at 9.20 a.m. and returned at 9.26 a.m. with a small sprig of fresh leaves of the Flooded Gum which she, apparently deliberately, brushed over each chick in turn several times before working it into the structure of the nest. She then squatted down and one of the chicks nestled under her feathers. From 10.20 a.m. until 10.30 a.m. she brooded both nestlings and then one young bird crawled out and sat on the edge of the nest, followed shortly by the second bird. At 11.06 the nest was in sunlight and both chicks were panting. The parent bird stood up, spread her wings and tail, and the chicks sheltered under this canopy until 12.30 p.m. when I left the hide.

On November 16 a rabbit leg was brought to the nest at 9.40 a.m. and after eating it the chicks were shaded until 1.20 p.m. During the next hour portion of another rabbit was fed to the nestlings after which they settled down in the nest while the female stood on one leg at the edge of the nest.

At 6.15 p.m. another rabbit was eaten and at 7.15 p.m. the female flew away with the rabbit skin, returning almost immediately to brood the young birds again.

By November 21 the chicks had increased enormously in size, the difference in bulk between the two birds making it obvious that one was a male, the other a female. They were almost fully feathered and they spent a lot of time standing and moving about the nest. A Grey Fantail was observed to swoop over the nest several times; I thought at first it was harrassing the hawks, but closer observation revealed that it was catching flies. Beneath the nest, in clear view of the female Goshawk, a Quenda (*Isoodon obesulus*) spent most of the day, which was overcast and very dull, digging for food. No move in its directoin was made by the Goshawk, but when she left to take food from the male at 1.27 p.m. the Quenda scurried under a tiny bush where it stayed motionless for over an hour, its rump clearly visible. At 6.45 p.m. a plucked and beheaded pigeon was fed to the chicks, one of which took a complete leg and swallowed it after much struggling. About half the pigeon was carried away and dropped. I picked it up later for identification and it proved to be the Common Pigeon (*Columba livia*). A Little Eagle flew past the nest and the female Goshawk attacked it, joined later by the male. They drove the Eagle down the valley for about a mile, and the female then returned to the nest alone.

On November 28 the chicks were fully feathered with some down still on the crown and wing coverts. The tail feathers appeared to be half-grown, approximately 3 inches in length. The male came twice to the nest, once while the female was away and once in her presence.

On December 2 the chicks perched in nearby branches but came to the nest to be fed. On subsequent days they ventured further from the nest, returning to be fed. The food was still brought by the female. She flew straight to the nest and both chicks came immediately, the first one to arrive grabbing the prey and collapsing over it, raising the hackles and giving the high-pitched squeak common to most hawks in such situations. The lucky chick usually waited until the female left, turned its back on the other fledging and commenced its meal. If the second chick made any move to take the food, the first would again collapse over it with wings outspread.

On December 14 I caught one bird for a friend who is interested in falconry—this enabled me to observe its development. The tail grew to full length during the third week of December. The eyes, which were black until about November 6 when they turned brown, slowly paled until they became yellow during the third week of January.