

NOTES ON THE HABITS, &c., OF BIRDS BREEDING IN THE INTERIOR OF NEW SOUTH WALES.

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1. FALCO SUBNIGER.

As very little seems to be known of the habits, of this the fiercest and most rapacious of our falcons, perhaps a few notes on the subject would be of interest. I will premise my remarks by stating that I have for many years resided in a locality where these birds, at certain times of the year are tolerably numerous (the Lachlan River), and I have thus had many opportunities of observing their habits, &c. The first thing that strikes an observer with regard to this bird is its extraordinarily swift flight, almost equalling that of *Cypselus*; and the next its powers of endurance on the wing, for like the frigate bird, it passes by far the greater part of the day (at any rate) on the wing, and it is indeed a rare thing to see a black falcon perched.

I have said that it is tolerably numerous at certain times—for here they are undoubtedly migratory, arriving about the beginning of September in company with the small red quail *Turnix velox*, on which it preys; and departing about February. Quail and the young of birds frequenting the plains, such as *Anthus*, *Cincloramphus*, *Ephthiaunra aurifrons*, &c., constitute its chief prey, but only the young, as a rule of any but quail, for great as are the falcons powers of flight, he has more than a match in the adults of any of the above mentioned birds, for they dodge and turn so quickly that the falcon has no chance with them, and so well does he know this, that it is only when rendered desperate by hunger that he will ever attempt to catch one, and much more rarely it is that he is successful, and when unassisted by his mate the chase may be set down as hopeless, for just as he is on the point of clutching his prey, by a sudden turn it eludes his grasp and goes sailing off in quite another direction, whilst the baffled falcon is carried by its

own impetus in the opposite ; it is very rarely indeed that the falcon makes a second attempt after his failure, but I have occasionally seen one do so again and again, with no better success, until at last the pursuit is given up in disgust. On one occasion a lark, *Anthus australis*, defied the united efforts of no less than three falcons, and for a considerable time, the lark simply avoiding by a quick turn each falcon's stroke, but finally it fell a victim, completely tired out. One peculiarity of this bird, not shared by any others of the family, that I am aware of, is its habit when watching for prey of frequently ascending to such a great height as to be invisible, which shows the wonderful power of vision possessed by this bird. Many and many a time when on the plains, miles from any timber, with a flock of sheep, "camped," I have carefully scanned the sky overhead and around to see if a falcon was visible, but not a speck has met my gaze in any direction. On starting to drive the sheep and almost immediately have they disturbed a quail, a rushing sound would be heard overhead, and on looking up a dark object would be seen descending with fearful rapidity, and so compressed or gathered together, as to render any one unacquainted with this bird unable to say what the object was ; when some thirty or forty feet from the ground the descent is arrested, and by a sudden movement and expansion of wings the falcon assumes a horizontal attitude and the chase commences, which as a rule, results in the speedy capture, and the falcon by a series of graceful curves again mounts into the air, devouring its prey as it ascends, an occasional tuft of blood stained feathers slowly wafted earthwards, evidencing its success ; the above operation being repeated when the next quail, or some young bird is flushed. Sometimes however, the falcon is balked by the quarry suddenly dropping into some sheltering salt bush (rarely more than a foot or eighteen inches high), when this is the case the falcon quickly arrests its flight, and closing its wings by a powerful movement shoots perpendicularly into the air for some distance, and then expanding its wings hovers for a short time over the bush in which its prey has taken refuge. Should it be a scanty one and the unfortunate bird

be visible, the falcon slowly descends, alighting on the top of the bush and flapping its outstretched wings, drives the terrified victim out, when it is speedily clutched in the powerful talons of its remorseless foe. Should the bush prove too dense, and the bird not to be seen, the falcon gives it up and mounts skyward again. As an instance of the falcon's rapacity, I enclose the following clipping, which I contributed to the Naturalists Column of the "Queenslander" some years since, merely adding that the hawk mentioned as captured by the falcon was *Elanus scriptus* :—

"As I see that you invite correspondence on the fauna of Australia, permit me to offer my experience on the "Plague of Rats," and also of a species of hawk which accompanied and preyed upon them. In the year 1864, when the Lachlan of the back country was first occupied, these rats were found in incredible numbers all over the vast plains of that region, where they burrowed in the soft soil or made nests of grass in the dwarf saltbushes with which the plains were thickly covered. These vermin were soon found a great nuisance by the destruction they caused in rations, saddles, &c., &c., and although we "legislated" against them and introduced cats, and scattered poison with a liberal hand, still the nuisance was unabated. Things went on in this manner for some six or eight months, when the rats—having, I suppose, fulfilled their mission, whatever that may have been—disappeared, as did also the hawks and owls. The rats and owls have not appeared here since, but the hawks came in small numbers on a subsequent occasion. The plumage of these hawks on the breast and under parts was pure white, the back—with the exception of the shoulder coverts—light grey, almost white, the shoulder coverts black. They spent the greater part of the day on the branches of the dead pine-trees, on which so closely were they packed that, at a distance, and with their breasts turned towards the observer, the branches looked as if covered with snow. They were generally very sluggish and inactive, and would sit for hours motionless. I have often seen the little blackboys knocking them off on one side of a tree with their boomerangs, while those on the other side remained perfectly still, and apparently quite unconscious of

danger. I have frequently fired amongst them with a rifle, killing three or four at a shot, and the others have not stirred."

"As an instance of their sluggishness or stupidity I may mention that I one day saw a black falcon—one of the swiftest and most powerful of our falcons—dash into a number of them perched on a dry pine-tree, close to the house, and clutch one in its sharp talons; both birds fell to the ground, and after struggling for a few minutes the falcon rose heavily and flew off with its prey; the other hawks sat perfectly still all through the performance. This went on for several days, the falcon each time securing a victim. Noticing that the falcon's visits occurred at about the same hour daily, I determined to try and capture both the falcon and his prey. With this object I secreted myself in some thick bushes close to the foot of the tree on which the hawks sat. I had not long to wait, for soon falcon and hawk came struggling down within a few feet of where I was concealed, and I sprang out and caught one of the previously outstretched wings of the Falcon. So fierce was his clutch that I had difficulty in releasing the hawk, which, though severely wounded, had sufficient strength to make off. I cut the falcon's wings and kept him in confinement for some time, but he was so fierce and intractable that I got disgusted with him, and ended his career."

"I fancy these cases of one bird of prey attacking another with the intention of feasting on him are very rare; in all my wanderings I never saw but one other instance of the kind, and in that case the aggressor was a peregrine falcon (1) and the bird attacked a white-fronted owl (2); the latter, however, after a sharp tussle, managed to free himself. But I am digressing, for which I humbly crave pardon; and will now return to the hawks. As I have said, these birds would sit for the greater part of the day motionless, but at a certain hour in the afternoon they simultaneously take wing, and by a series of graceful circles gradually rise to a great height, until their white breasts became mere specs in the blue sky. After gyrating about at that height for

(1) *Falco melanogenys*. (2) *Strix delicatulus*.

some time, they would descend in the same manner and resume their perch, sitting there until dusk, when they would fly out on the plain, over which they might be observed hovering like sea-gulls, and every now and then pouncing down upon a rodent, which they devour whilst on the wing. By sunrise the next morning they all would be on their accustomed perches. The number of rats destroyed by these birds must have been very great, for the ground beneath the trees they frequented was thickly covered with the balls of fur which, like the owl, they have the power of ejecting from their stomachs. The native dogs at that time were very numerous, and used to feed upon the rats (I have taken eleven from the stomach of one dog). Yet, notwithstanding dogs, hawks, owls, cats, and poison, there was no perceptible diminution in their numbers for some months, when all at once it was noticed that both they and the hawks had greatly decreased, and within a week of that time not a rat or hawk was to be seen, and the rats have not appeared since. Where did they go?

“In 1870 (the year of the great floods here) we had a similar visitation, but this time it was mice instead of rats. They made their appearance early in January of that year, but not in great numbers at first; these, I suppose, were the *avant couriers* of the countless swarms which were soon to follow, for by the middle of February the whole country was literally alive with them, and the devastation they made in flour, sugar, and other things was terrible. This invasion lasted for seven or eight months, when they gradually and almost entirely disappeared; but ‘there are still some few remaining who remind of the past.’ A few of the hawks to which I have alluded came with the mice, but did not stay, departing long before the latter. Some idea of the numbers of the mice may be formed when I state that one day being over at the adjoining station my friend informed me that he had taken 4000 dead ones out of the store that morning, the result of one night’s poisoning; he assured me that he had counted them as the men picked them up.”

As another instance, a friend of mine (who is a keen observer) told me that he was driving a small lot of sheep, and a falcon had made several ineffectual efforts to catch a lark, and whilst in pursuit of it some distance ahead of the sheep, they disturbed a black duck, *Anas superciliosa*, from her nest under a cotton bush, and she flew off in the direction the falcon had gone; the latter caught sight of her, and leaving the lark turned and made for the duck, and so great was the concussion when they met that they fell to the ground, and my friend on riding up found both dead.

The black falcon sometimes breeds here but not often, for during my long residence (over 20 years) in this locality I have only met with their nests on four occasions (one only a few days since). It breeds in September and lays four eggs which much resemble those of *Hieracidea orientalis*.

The nest I recently found was a clear case of appropriation, as last year it was occupied by a pair of *Gypoictinia melanosternum*, the falcons had possession however, this year, and the nest contained four eggs. Immediately beneath the edge of the nest a pair of *Xerophila leucopsis* had constructed theirs, which contained young, and the old birds were flying in and out apparently quite unconcerned at the proximity of their dangerous neighbours well knowing that the intercices between the large sticks of which the upper nest was composed afforded them a secure asylum.

The habit of builing beneath the large nests of the hawk family is common with several species of small birds, but although the raven *Corone australis*, constructs a nest as large as many species of hawks, yet these small birds nests are never found beneath them, instinct teaching the builders that their eggs or young would not be safe even there from this cunning bird, and in instances where they have built their nests beneath those of hawks, I have noticed that none are tenanted except in cases where the upper structure has also been occupied by the hawk, the presence of whom effectually keep the crows away.

A large flat-winged Dipterous parasite infests the black falcon. I have seen a somewhat similar insect on the other birds but not nearly so large as that infesting the falcon, it moves about sideways under the feathers with extraordinary rapidity.

2. GLAREOLA-GRALLARIA.

This somewhat singular bird is one of the few migratory species that visit this part of the colony and remain during the intense heat of summer. As a rule it arrives towards the end of September and departs about the end of February. During that interval it breeds, and the places chosen for this purpose, and in fact its habitat during its stay are the bare patches of ground, entirely destitute of vegetation, so frequent on the plains here. Some of these bare patches are of considerable extent, and the surface of the ground is broken up into countless small pieces, from the size of a pea to that of a walnut, giving the appearance of having been chipped over with a hoe. This is partly due to the nature of the soil and to the intense heat and dryness of the climate which causes the surface to crack in all directions and become quite loose. It is on these loose patches that the *Glareola* deposits its eggs, 2 in number. It makes no nest, but simply lays its eggs on the bare surface of the loose broken ground, and so much do they assimilate in form and colour to the surrounding lumps of earth that unless the bird is seen to move off them a person might walk on them and not observe them, and on several occasions I have taken my eyes off the spot for a few seconds and then had considerable difficulty in distinguishing the eggs again. As a rule the eggs are laid in October, but this year, 1884, for the first time, I obtained them in September. Usually it is very shy, but during the period of incubation it loses this shyness and both parent birds will allow themselves to be approached quite closely and seem utterly regardless of danger in their anxiety to protect their eggs or young. In fact I have seen the female bird so loath to quit the eggs that it was only when I touched her with my hand that she would quit the nest, pecking savagely at my hand several times before she did so; the male bird in the mean time laying flat on the ground, with outstretched wings, a few feet off, uttering the most plaintive cries.

The young in the earlier stages are exceedingly helpless, and although the colour of their down so closely resembles that of the

loose pieces of earth amongst which they were hatched that when motionless they are undistinguishable, still their slightest movement would possibly attract the eye of some passing hawk or crow, and to guard against this danger, the old birds conduct them as speedily as possible to one of the numerous holes in the ground to be found all over the plains (the mouth of some deserted burrow is a favourite place) into this hole the young are led and there they remain until they are able to fly. When the young are concealed in one of these holes, one or both of the old birds may always be seen close by and on the approach of danger I have frequently seen both take refuge in the hole and on watching for a short time have seen one or both come cautiously out again only to disappear once more on noticing me. This bird is the only living creature I know of, that seems to revel in the intense heat of mid-summer in this locality for when every other living animal has sought shelter from the withering mid-day sun, it may be observed running briskly about on the bare red patches I have described, when the surface of the ground is so hot that a man could scarcely bear his hand on it, in fact the hotter the day the more this feathered salamander seems to enjoy it. It however, requires a good deal of water for it drinks several times during the day, and often travels many miles going to and returning from the tanks containing water, and numbers can be obtained by waiting at the water until they come to drink.

These birds run with great rapidity when in quest of food, &c., and suddenly pausing, the body undulates for some seconds as if poised on delicate springs when the running is again resumed. Its flight which appears somewhat laboured from the extreme length of wing is nevertheless light and buoyant and is characterised by the same erratic zig-zag motions so noticeable in the *Eurostopodidæ*. Its food consists of insects which are captured both on the ground and on the wing, the bird sometimes running along the ground in pursuit, and springing up to the height of a foot or more as the insect rises, occasionally towering to a considerable altitude as some flying insect attracts its attention returning to the ground in the skimming zig-zag manner before described.



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