

Swallows and Martins—Observations made in the Far North of South Australia.

By J. Neil McGilp.

Welcome Swallows (*Hirundo neoxena*).—Fair numbers of these birds are present throughout the year, and during my twenty years' residence on Moolawatana Station I have seen little, if any, increase in numbers. Where does the natural increase go? The Welcome Swallow is most numerous about station homesteads, huts, and wells. It nests in all sorts of places, in fact, any old place seems to do—in houses, under verandas, in sheds of all description, down wells and shafts, and in caves in rocks. I have seen a nest built into the timber of a well at a depth of 78 feet from the surface, and quite a number in wells, but not so far down. The nest is built to conform with the situation; sometimes a complete ring is formed in mud pellets, while at other times only portion is made of mud, as in the case of building in a right angle, as is so often noted in shafts. The foundations of the nest are made of mud pellets. These are carried singly by each bird, and a little grass and wet cowdung is often used in the wall of the nest. As the building of the wall advances, a few pieces of grass or hair are brought

along, and the bird carrying it places it around the inside of the nest and then sits in the nest, turning round repeatedly as it presses the grass or hair into shape. Both the birds do this from time to time. Finally a snug lining of feathers, fur, or hair is placed in the nest. The building of the nest takes from twelve to fifteen days, according to the shape of the nest, as where more mud pellets are required in constructing the nest the time taken is about fourteen to fifteen days. The eggs, which vary from three to five, are usually laid early in the morning of each day. It takes thirteen to fourteen days to hatch out the young, and both birds share in the incubating; the sitting bird is frequently fed by its mate. One bird, evidently the male, roosts close to the nest during the night. The young birds are perhaps a little duller in colour than the adults, and they leave the nest in about sixteen to eighteen days after birth, but return to the nest at night and during the heat of the day for over a week. The young, when first leaving the nest, have quite a lot of down showing, especially on the shoulders and head, whilst the outer tail feathers are shorter than the other tail feathers. While the Welcome Swallow takes comparatively all of its food on the wing, I have seen them pick up small ants from the ground on several occasions. It is a purely insectivorous bird.

Fairy Martin (*Hylochelidon ariel*). — They are purely migrants, coming spasmodically—sometimes two years in succession, and at other times arriving after an absence of three or four years. Almost invariably they arrive early in August, and usually commence nesting at once, though I have occasionally seen them pass along without nesting. Strangely enough, on my station there are two well-known "Bottle-Swallow" quarters for nesting—a large overhanging rock and a gigantic gumtree leaning towards the north. This tree has at some time been partly burnt out, and fully a hundred nests are to be seen on the protected side. These Martins breed in colonies, and from observations I feel certain that they go in for community building. Several birds appear to work at one nest. I found it impossible to note whether both owners of the nest assist in the building. The nest is made entirely of mud pellets, which are collected during the early forenoon and late afternoon; no building takes place during the midday heat, possibly because the mud dries so quickly. The nests are about $9\frac{1}{2}$ to 10 inches long from the entrance to the back and about 5 to $5\frac{1}{2}$ inches in diameter through the egg-chamber; the entrance is rather a long neck. The nest is often termed "retort shape." The neck is usually built pointing downwards, so that it is impossible to

see if the nest contains eggs without damaging it. I have known a nest to be built externally in five days, and, as the lining is being carried into the nest as soon as the bowl of the nest is finished, I should say that the nest is completed practically as soon as the external structure is done. The time of building varies somewhat, as another nest took seven days. Often old nests are repaired and used. Grasses and feathers form the lining. Usually nesting operations begin early in August and the birds have all left by November, sometimes leaving complete sets of incubated eggs, and, in two instances, just-hatched young, in the nests. I quote this in all sincerity, though I must admit that something may have gone amiss with the parent birds. The eggs of this Martin vary considerably, even in the same clutch. They are usually slightly spotted, but many pure-white eggs are found. They vary also in shape: some are rounded ovals, others are much depressed at the ends, whilst others again have one end sharply pointed. For some days after the young are hatched one bird sits in the nest with the nestlings, and the family is fed by the other bird; later on both birds feed the young. From rather unsatisfactory observations (through not being able to see into the nest) it appears to take fifteen or sixteen days to hatch out the young, which leave the nest in about eighteen or nineteen days. Young Fairy Martins closely resemble the adults, but the frontal patch on the forehead is much darker in colour. I have known a small colony, about fifteen pairs, of these Martins attempt to build under a veranda, placing the nests on the galvanized iron. When the nests were half-finished a fall of rain and heavy dew caused them to leave their foundations. Two days later the birds were hard again at work, and had almost completed their homes when another dewy night caused a collapse. The birds then started to build against the wall of the house, with satisfactory results. I have noted Pardalotes and Whitefaces building in deserted Fairy Martins' nests, while the Sparrows sometimes use these nests for homes.

White-backed Swallow or Sand-Martin (*Cheramoeca leucosterna*).—They are numerous with us all the year round, and nest in colonies where there is a suitable site, which is usually a soft creek-bank, a weather-worn sandheap, or excavated pit. The nest is in a tunnel about two feet in length, and there is an enlarged chamber at the end. The bird uses its beak to excavate the tunnel, and throws out the dirt with its feet, but I have on a few occasions noticed it carry out large portions of earth or stone in its beak. There is at the end of the tunnel a platform of bark and strips of fibre, and upon that is placed a lining of

leaves. Any sort handy seems to satisfy; I have seen gum, teatree, wattle, and mulga leaves used. The eggs, four or five, usually rest in a slight depression in the leaves. A tunnel, which has been freshly excavated, has the entrance of a rounded shape, but after it has been in use a few days it becomes more like a half-moon in shape, caused by the wings of the bird scraping away the earth at each side as it enters the hole. It lands directly at the edge of the hole when coming to the nest. Nests are found in accordance with the season; that is to say, the birds nest after a good rainfall, though August to November is the usual period if the season has been good. Sometimes the tunnels are dug two weeks before the eggs are laid, but I can give no data as to the length of time of laying, incubation, or young leaving the nest, as it is impossible to gain the information. I have once or twice left the eggs in the nest after enlarging the tunnel sufficiently to admit my arm, but the birds deserted the nest. The young birds are curious objects when they look out of the entrance. The head looks like that of a lizard, and there is a prominent white streak over each eye, while the crown of the head is quite black. The young come to the entrance to sun themselves, but I have never seen the parents feed them there, probably because the strongest nestling would jostle the others out of the position. The parents go right into the hole before feeding, and carry out the excreta with them when they leave for more food. Both parents feed the young, and from observations I believe both share in the incubating and feed each other on the nest. Both birds are often disturbed from the nest, and both roost in the tunnel at night. When not nesting the birds roost in specially-prepared tunnels, which are only a short distance in depth, and then open out into large chambers, from which I have flushed from fifteen to twenty birds just at daylight. This tunnel is often used during the heat of the day, but not by a flock; others seek shelter from the heat in trees. I have never seen the Sand-Martins take food from the ground, though occasionally I have flushed them from the ground. A rather strange thing has often occurred to me whilst observing these birds. I have watched the flock for several minutes, when suddenly they have disappeared in the sky, and I have not been able to follow them even with field-glasses, and they do not return for hours, so far as I could gather. This statement applies only to the birds when they are not nesting.

Tree-Martin (*Hylochelidon nigricans*).—These birds are very numerous, are residents, increase in good seasons, and are usually found about our big gum creeks. The nesting-site is a hole in a tree; with us, one of the eucalypts. I have known them to

use a small knot-hole that led to a hollow cavity in an otherwise green tree, and I have frequently seen them use a large open spout, in which the birds resorted to the usual Swallow-habit of mud building, for they had reduced the size of the entrance to the spout to about an inch and a quarter in diameter. The nest is simply a handful of leaves placed either at the bottom of a hollow or in a depression in a hollow spout; usually with us gumleaves only are preferred on which to deposit three to five eggs. Breeding takes place after good rains, but from August right up to January seem to be the favourite months of the season. The birds usually nest high up in the trees. Both parents feed the young, but I am not certain whether both sit on the eggs, as one bird is noted frequently to feed the other close to the entrance, the bird with the food being visible all the time, and as the nest is sometimes some feet away from the entrance I conclude that the sitting bird leaves the nest to take the food. Both birds enter the hollow for the night. The eggs are usually minutely marked with a few rufous spots. The surface of the shell is glossy, and the shell is very delicate for the size of the egg; in fact, it is the thinnest shell of all the eggs laid by birds which use hollows. I have not observed the birds nesting in holes in banks, although plenty were available.
