

The three nests, constructed of locally available weeping willow and sedge were close together, forming a platform on a defoliated low branch with a westerly aspect, 14m above the water. This is a section of the tree not favoured by Pied Shags, possibly because of prevailing westerly winds. Two of the nests of *P. sulcirostris* contained chicks, three rather active black in one, two younger brown in the other. All chicks had prominent pale yellow bills. The third nest was empty.

The parent Little Black Shags soon arrived to feed the chicks, thus confirming identification, later corroborated by Sylvia Reed using 30x telescope. Each chick, immediately after feeding, projected a stream of excreta over the rim of the nest into the water below.

The three older chicks appeared ready to fly on 28 April but did not actually do so until 2 May 1977, presumably because on 28 April Orakei Basin was drained and remained empty until 2 May. The other two chicks flew on 9 May.

Little Black Shags occur in this area all the year round, often roosting in the same tree as the Pied Shags, but their numbers fluctuate according to season. In April-May-June flocks of 200-300 are seen fishing in Purewa Creek, Orakei Basin and Orakei Creek, when Yellow-eyed Mullet are shoaling. Some Pied Shags often join these flocks in fishing. For the rest of the year small numbers of Little Black Shags occur sporadically. Flocks in flight, or when fishing, make no audible calls, but on alighting in the roosting tree, very quiet, low-key, duck-like quacking sounds are heard.

There are no previous records in literature of *P. sulcirostris* breeding in the Orakei area which has been under observation from my window since mid-1970. It will be interesting to see whether they nest here again next autumn.

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#### FIJI SCARLET ROBIN EATING WORMS ON THE GROUND

The Scarlet Robins, *Petroica multicolor*, of Fiji comprise two (or possibly three, if Taveuni has a distinct race) of the 13 or 14 subspecies which are distributed from Australia to Samoa (Mayr 1934).

So far as we know nothing has been published concerning the diet of the Scarlet Robin in Fiji.

In Australia, Macdonald (1973) described Scarlet Robins as "arboreal and terrestrial," but listed only "insects" as their food. Hill (1967) stated that they "frequently dart down to pick up insects and other small fry from the ground." Officer (1969) stated, with some redundancy, that their diet includes "larvae, beetles, moths and insects."

In Fiji, Bahr (1912) noted a pair of Scarlet Robins "on the tops of the highest trees." He added: "Only once did I see one on the ground."

On Viti Levu, on the few occasions when we have actually recorded observations of the Scarlet Robin with an item of food in its bill, it has been at some height above the ground in the forest understorey. For example, on the forested slopes of Joske's Thumb near Suva, one of us (BB) caught sight of a female about 4 m above the ground with what appeared to be a stick insect about 80 mm long (almost as long as the bird herself) in her mouth. On another occasion in the Savura Creek catchment area near Suva, BB saw a male about 10 m above the ground feed a moth or small butterfly to a juvenile.

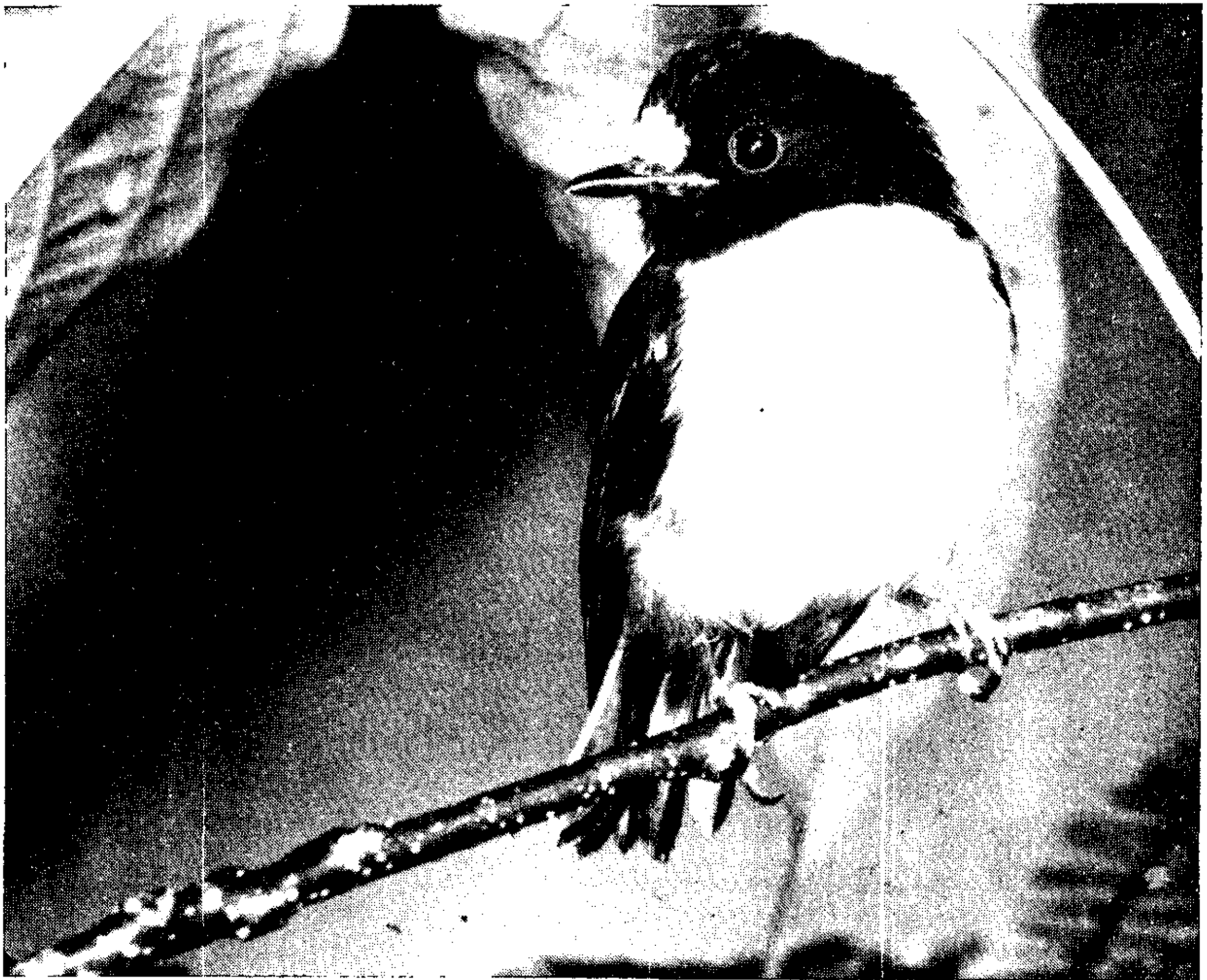


FIGURE 1 — A male Scarlet Robin photographed in the enclosure where we saw it eating worms on the ground. This black and white photograph was copied from the original 35mm Kodachrome slide.

However, we had an excellent opportunity to closely observe a male Scarlet Robin feeding on the ground, albeit in conditions of captivity, on the morning of 2 August 1976, about 8 km south of Navai on the Nadrau Plateau, about 750 m above sea level, in Viti Levu. The bird was confined for photographic purposes for about 3 hours

in an enclosure of mosquito netting about 3.1 m long, 1.8 m wide and 1.5-2.0 m high. Ferns and other plants up to the height of the enclosure were included within it, but the Scarlet Robin spent much of the time either on the ground or within about 300 mm of the ground. He would perch briefly on small dead twigs or roots, then hop rapidly down and along the ground to snap up tiny insects. Twice RB saw him eat worms — a yellowish one about 20 mm long and about 1.5 mm in diameter, and a greyish one about 40 mm long and 20 mm in diameter. In both cases he picked up the worm from amid surface debris, dropped it wriggling on the ground, then picked it up again and swallowed it. For the larger worm he had to swallow several times before the last of the worm disappeared. BB later saw the bird swallow a third small worm. The robin also made a few flycatching flights, and once he flew up from a perch on a low branch to pluck something from the underside of a leaf.

Fergus Clunie (pers. comm.) has confirmed that the foraging behaviour on and near the ground which we observed within the enclosure is "typical of what I've often seen among wild birds. The occasional short flycatching flights and gleaning underside of the leaf is also typical of this sort of activity — they are almost constantly on the go and if in dense undergrowth keep disappearing and reappearing as they go to the ground then return to another perch." It thus appears that Bahr's comment is misleading, and probably reflects limited observation.

#### LITERATURE CITED

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#### SHAGS IN MID-TASMAN

In between voyages John Jenkins received from John Lampitt, Radio Officer on *Union Rotorua* two letters which describe the occurrence of shags far out of sight of land in the Tasman Sea. The letters were passed to me and I was invited to extract the relevant passages.

(1) *Union Rotorua* towards Melbourne 2 October 1977

I thought you might be interested to hear that we were visited by a squadron of shags in mid-Tasman yesterday. We were in position 37°16'S 157°17'E at 1645 hrs when ten large shags arrived and circled the ship several times, before joining the usual albatrosses and tubenoses